

RAC AGENDA – July/August 2018



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|----|--|----------------------|
| 1. | Welcome, RAC Introductions and RAC Procedure
- RAC Chair | |
| 2. | Approval of Agenda and Minutes
- RAC Chair | |
| 3. | Wildlife Board Meeting Update
- RAC Chair | |
| 4. | Regional Update
- DWR Regional Supervisor | INFORMATIONAL |
| 5. | R657-11 - Furbearer Rule Amendments
- Darren DeBloois, Mammals Coordinator | ACTION |
| 6. | Furbearer and Bobcat Harvest Recommendations for 2018-2019
- Darren DeBloois, Mammals Coordinator | ACTION |
| 7. | Cougar Recommendations and Rule Amendments for 2018-2019
- Darren DeBloois, Mammals Coordinator | ACTION |
| 8. | R657-48 – Sensitive Species Rule Amendments
- Kimberly Hersey, Nongame Mammals Coordinator | ACTION |

Regional Presentations Only

- | | | |
|-----|--|----------------------|
| NRO | Hardware Ranch Management Plan
Brad Hunt, Hardware Ranch Manager | INFORMATIONAL |
| NRO | Howard Slough WMA Habitat Management Plan
Rich Hansen, Wildlife Biologist III | INFORMATIONAL |
| SRO | Fillmore WMA Habitat Management Plan
Gary Bezzant, Regional Habitat Manager | INFORMATIONAL |

Meeting Locations

- | | | | |
|-----------------|---|------------------------|--|
| NR RAC – | July 25th, 6:00 PM
Brigham City Community Center
24 N. 300 W., Brigham City | SER RAC – | August 1st, 6:30 PM
John Wesley Powell Museum
1765 E. Main St., Green River |
| CR RAC – | July 26th, 6:30 PM - Thursday
Springville Library
45 South Main Street, Springville | NER RAC – | August 2nd, 6:30 PM
Wildlife Resources NER Office
318 North Vernal Ave, Vernal |
| SR RAC – | July 31st, 7:00 PM
Sevier School District Office
180 E. 600 N., Richfield | Board Meeting – | August 30th, 9:00 AM
DNR, Boardroom
1594 W. North Temple, SLC |



GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Wildlife Resources

MICHAEL D. FOWLKS
Interim Division Director

MEMORANDUM

TO: Utah Wildlife Board and Regional Advisory Council Members
FROM: Darren DeBloois, Predatory Mammals and Furbearer Program Coordinator
DATE: July 10, 2018
SUBJECT: **2018-19 Furbearer and Trapping Rule Amendments**

Last year we made some recommended amendments to the Furbearer and Trapping Rule (R657-11). During that process we became aware that had missed feedback from livestock producers that caused concerns about aspects of the rule changes. Shortly after the Wildlife Board Meeting last year we convened a committee to address concerns raised during the RAC and Board process. This year we are making recommendations based on discussions in that committee.

Highlights of our proposed changes are:

- Allow the owner of traps to designate another person to check and remove wildlife from their trap(s) provided:
 - The trap is appropriately marked with the owners trap registration number
 - The person has required licenses when working with protected wildlife sets
 - The person does not have a denied or suspended trap registration license
 - The person has written authorization from the trap owner
 - The trap owner assumes criminal liability and civil responsibility for the designated person
- Add language acknowledging that take of coyotes and raccoons is regulated by the Utah Department of Agriculture and Food, and any references to coyotes and raccoons in the rule is strictly limited to identifying types of trapping devices likely to take protected wildlife in addition to the target species
- Clarify who may legally euthanize a bobcat caught in a trapping device
- Clarify that owners of domestic pets caught in a trapping device may only disturb the device to remove their pet



R657. Natural Resources, Wildlife Resources.[]

R657-11. Taking Furbearers and Trapping.

R657-11-1. Purpose and Authority.

(1) Under authority of Sections 23-14-18 and 23-14-19, the Wildlife Board has established this rule for taking furbearers and trapping.

(2) Specific dates, areas, number of permits, limits, and other administrative details which may change annually are published in the guidebook of the Wildlife Board for taking furbearers.

(3) Take of coyotes and raccoons is regulated by the Department of Agriculture and Food pursuant to Title 4, Chapter 23, Agricultural and Wildlife Damage Prevention Act. The division, through the Wildlife Board, is charged in Sections 23-14-1 and 23-14-18 to conserve protected wildlife and establish regulations considered necessary to accomplish that directive, including regulating the means by which protected wildlife may be taken. Trapping devices are largely indiscriminate and frequently capture nontargeted protected wildlife. The trapping device use regulations in this rule concerning coyotes and raccoons are intended solely to minimize take of nontargeted protected wildlife, maximize potential for successful release of nontargeted protected wildlife, detect illegal trap sets targeting protected wildlife, and protect compliant trappers from criminal liability otherwise applicable to taking nontargeted protected wildlife in a trapping device.

R657-11-2. Definitions.

(1) Terms used in this rule are defined in Section 23-13-2.

(2) In addition:

(a) "Artificial cubby set" means any artificially manufactured container with an opening on one end that houses a trapping device.

(b) "Bait" means any lure containing animal parts larger than one cubic inch with the exception of white-bleached bones with no hide or flesh attached.

(c) "Cage trap" means any enclosure containing a one-way door triggered by a treadle or pan that prevents escape of an animal after the door closes.

(d) "Exposed bait" means bait which is visible from any angle, except when used in an artificial cubby set.

(e) "Foothold trap" means any underspring or jump trap, longspring trap or coil-spring trap with two smooth arms or jaws that come together when an animal steps on a pan in the center of the trap.

(f) "Fur dealer" means any individual engaged in, wholly or in part, the business of buying, selling, or trading skins or pelts of furbearers within Utah.

(g) "Fur dealer's agent" means any person who is employed by a resident or nonresident fur dealer as a buyer.

(h) "Good condition" means the carcass is fresh or frozen and securely wrapped to prevent decomposition so that the tissue remains suitable for analysis.

(i) "Green pelt" means the untanned hide or skin of any furbearer.

(j) "Owner" means the person who has been issued a trap registration number associated with one or more trapping devices.

(k) "Pursue" means to chase, tree, corner, or hold a furbearer at bay.

(l) "Scent" means any lure composed of material of less than one cubic inch that has a smell intended to attract animals.

(m) "Trapping device" means any apparatus used to remotely capture or kill an animal, including a cage trap, foothold trap, snare wire, or any other body gripping mechanism.

R657-11-3. License, Permit and Tag Requirements.

(1) A person who has a valid furbearer license may take furbearers during the established furbearer seasons published in the guidebook of the Wildlife Board for taking furbearers.

(2) A person who has a valid furbearer license and valid bobcat permits may take a bobcat during the established bobcat season published in the guidebook of the Wildlife Board for taking furbearers.

(3) A person who has a valid furbearer license and valid marten trapping permit may take marten during the established marten season published in the guidebook of the Wildlife Board for taking furbearers.

(4) A person who has a valid trap registration license may use a trapping device to take furbearers, coyotes, or raccoons, as authorized in the Wildlife Code, this rule and the guidebooks of the Wildlife Board.

(5) Any license, permit, or tag that is mutilated or otherwise made illegible is invalid and may not be used for taking or possessing furbearers.

R657-11-4. Bobcat Permits.

(1) Bobcat permits can only be obtained and are only valid with a valid furbearer license.

(2)(a) A person may obtain up to the number of bobcat permits authorized each year by the Wildlife Board.

(b) Permit numbers shall be published in the guidebook of the Wildlife Board for taking furbearers.

(3) Bobcat permits will be available during the dates published in the guidebook of the Wildlife Board for taking furbearers and may be obtained by submitting an application through the division's Internet address.

(4) Bobcat permits are valid for the entire bobcat season.

R657-11-5. Tagging Bobcats.

(1)(a) Only a person who possesses a valid bobcat tag issued in their name and who is present upon discovery of a bobcat in their marked trapping device or the device of another under R657-11-9(6) may euthanize the animal.

(b) The person who euthanizes a bobcat caught in a trapping device is required to attach their bobcat tag to the carcass, as provided below.

(2) The pelt or unskinned carcass of any bobcat must be tagged in accordance with Section 23-20-30.

(~~2~~3) The tag must remain with the pelt or unskinned carcass until a permanent tag has been affixed.

(~~3~~4) Possession of an untagged green pelt or unskinned carcass is prima facie evidence of unlawful taking and possession.

(~~4~~5) The lower jaw of each bobcat taken must be removed and tagged with the numbered jaw tag corresponding to the number of the temporary possession tag affixed to the hide.

R657-11-6. Marten Permits.

(1) A person may not trap marten or have marten in possession without having a valid furbearer license and a marten trapping permit in possession.

(2) Marten trapping permits are available free of charge from any division office.

R657-11-7. Permanent Possession Tags for Bobcat and Marten.

(1) A person may not:

(a) possess a green pelt or unskinned carcass from a bobcat or marten that does not have a permanent tag affixed after the second Friday in March;

(b) possess a green pelt or the unskinned carcass of a bobcat with an affixed temporary bobcat possession tag issued to another person, except as provided in Subsections (5) and (6); or

(c) buy, sell, trade, or barter a green pelt from a bobcat or marten that does not have a permanent tag affixed.

(2) Bobcat and marten pelts must be delivered to a division representative to have a permanent tag affixed and to surrender the lower jaw for each harvested bobcat.

(3) Bobcat and marten pelts may be delivered to the following division offices, by appointment only, during the dates published in the guidebook of the Wildlife Board for taking furbearers:

(a) Cedar City - Regional Office;

(b) Ogden - Regional Office;

(c) Price - Regional Office;

(d) Salt Lake City - Salt Lake Office;

(e) Springville - Regional Office; and

(f) Vernal - Regional Office.

(4) There is no fee for permanent tags.

(5) Bobcat and marten which have been legally taken may be transported from an individual's place of residence by an individual other than the furharvester to have the permanent tag affixed; bobcats must be tagged with a temporary possession tag and accompanied by a valid furbearer license belonging to the furharvester.

(6) Any individual transporting a bobcat or marten for another person must have written authorization stating the following:

(a) date of kill;

(b) location of kill;

(c) species and sex of animal being transported;

(d) origin and destination of such transportation;

(e) the name, address, signature and furbearer license number of the furharvester;

(f) the name of the individual transporting the bobcat or marten; and

(g) the furharvester's marten permit number if marten is being transported.

(7) Green pelts of bobcats and marten legally taken from outside the state may not be possessed, bought, sold, traded, or bartered in Utah unless a permanent tag has been affixed or the pelts are accompanied by a shipping permit issued by the wildlife agency of the state where the animal was taken.

(8)(a) Furharvesters taking marten are required to present the entire skinned carcass to the division in good condition when brought for permanent tagging.

R657-11-8. Trap Registration Numbers.

(1)(a) Except as provided in Subsection (1)(a)(ii), a person must possess a valid trap registration license before using any trapping device to take a furbearer, coyote, or raccoon.

(i) A trap registration license is required in addition to any other license, permit, or tag required by this rule to take a furbearer.

(ii) A trap registration license is not required for trapping a coyote, or raccoon when the trapping device is set within 600 feet of a building or structure occupied or utilized by humans or domestic livestock, provided the trapping device is set with the landowner [+]'s or lessee [+]'s permission.

(b) To obtain a trap registration license, a person must:

(i) provide the following information when requested by the division:

(A) full name;

(B) complete home address;

(C) email address;

(D) phone number;

(E) date of birth; and

(F) any other information requested by the division; and

(ii) pay a \$10 license fee.

(c) The division may deny issuing a trap registration license if the applicant;

(i) is subject to an administrative or judicial order suspending any hunting, trapping or fishing privilege;

(ii) has violated any provision in Title 23 of the Utah Code, or rules or guidebooks of the Wildlife Board; or

(iii) fails to pay the one-time \$10 license fee.

(d) The division may suspend a trap registration license, as provided in Sections 23-19-9, 23-25-5, and 23-25-6.

(e) The trap registration license must be carried on the person of the individual it is issued to while setting, checking or moving trapping devices.

(f) A trap registration license shall include a unique trap registration number printed on its face that is permanently assigned to the licensee.

(2)(a) Each trapping device used to take a furbearer, coyote, or raccoon must be permanently, legibly, and indelibly marked or tagged with the trap registration number of the owner.

(b) A trap registration number is not required on a trapping device set within 600 feet of a building or structure occupied or utilized by humans or domestic livestock, provided the trapping device is set:

- (i) to capture a coyote or raccoon; and
 - (ii) with the landowner [~~+~~]'s or lessee [~~+~~]'s permission.
- (3) No more than one trap registration number may be on a single trapping device.
- (4) Each individual is issued only one trap registration number.
- (5) Except as provided in R657-11-9, a person may not take a furbearer, coyote, or raccoon with any trapping device marked with the trap registration number of another person.
- (6) A person may not lend, transfer, sell, give, or assign a trap registration license or trap registration number to another person or entity.
- (7) Any person who has obtained a trap registration number must notify the division within 30 days of any:
- (a) change in address: or
 - (b) theft of trapping devices.

R657-11-9. Trapping Devices.

- (1) Any foothold traps used to take a furbearer, coyote, or raccoon must have spacers on the jaws which leave an opening of at least 3/16 of an inch when the jaws are closed, except;
- (a) rubber-padded jaw traps,
 - (b) traps with jaw spreads less than 4.25 inches, and
 - (c) traps that are completely submerged under water when set.
- (2)(a) Any cable devices (i.e snares), used to take a furbearer, coyote, or raccoon, except those set in water or with a loop size less than 3 inches in diameter, must be equipped with a breakaway lock device that will release when any force greater than 300 lbs. is applied to the loop.
- (b) Breakaway cable devices must be fastened to an immovable object solidly secured to the ground.
 - (c) The use of drags is prohibited.
- (3) On the middle section of the Provo River, between Jordanelle Dam and Deer Creek Reservoir, the Green River, between Flaming Gorge Dam and the Utah Colorado state line; the Colorado River, between the Utah Colorado state line and Lake Powell; and the Escalante River, between Escalante and Lake Powell, trapping for a furbearer, coyote, or raccoon within 600 yards of either side of these rivers, including their tributaries from the confluences upstream [~~1/2~~] $\frac{1}{2}$ mile, is restricted to the following devices:
- (a) Nonlethal-set foot hold traps with a jaw spread less than 5 1/8 inches, and nonlethal-set padded foot hold traps. Drowning sets with these traps are prohibited.
 - (b) Body-gripping, killing-type traps with body-gripping area less than 30 square inches.
 - (c) Nonlethal dry land cable devices equipped with a stop-lock device that prevents it from closing to less than a six-inch diameter.
 - (d) Size 330, body-gripping, killing-type traps modified by replacing the standard V-trigger assembly with one top side parallel trigger assembly, with the trigger placed within one inch of the side, or butted against the vertical turn in the Canadian bend.
- (4) A person may not disturb or remove any trapping device, except:

- (a) the owner of the trapping device;
- (b) peace officers in the performance of their duties;
- (c) the landowner where the trapping device is set;
- (d) the owner of a domestic pet [~~is~~] caught in the device may disturb the device to remove the domestic pet; or.

(e) as provided in Subsection (6).

(5) A person may not kill or remove wildlife caught in any trapping device, except:

(a) the owner of the trapping device who possesses the permit, license, tag, or legal authorization required for the species that is captured;

(b) a peace officer in the performance of their duties;

(c) as provided in Subsection (6); or

(d) as provided in R657-11-11.

(6)(a) A person, other than the owner, may [~~temporarily~~] possess, set, disturb or remove a trapping device; or temporarily possess, kill or remove wildlife caught in a trapping device provided:

(i) the trapping device is appropriately marked with the owner's trap registration number;

(ii) the person possesses a valid [~~trap registration license,~~] furbearer license [~~]~~ and appropriate permits or tags when working with furbearer sets; [~~and~~]

(iii) the person's trap registration license or furbearer license are neither denied nor suspended; and

(~~iii~~) iv) the person has obtained written authorization from the owner of the trapping device [~~stating~~] with the following information printed on the authorization in permanent ink:

(A) date written authorization was obtained;

(B) name [~~and~~], address, and phone number of the owner;

(C) owner's trap registration number;

(D) the name of the individual being given authorization; and

(E) signature of owner.

(b) Nothing in Subsection (6)(a) authorizes a person to use the owner [~~']~~'s trap registration license, furbearer license, permit or tag.

(7) The owner of any trapping device providing written authorization to another person under Subsection (6) shall be [~~strictly~~] criminally liable and civilly responsible under Section 23-19-9 for any violations of Title 23, this rule, or applicable guidebooks resulting from the use of the trapping device by the authorized person.

(8) The owner of any trapping device providing written authorization to another person under Subsection (6) must keep a record of all persons obtaining written authorization and furnish a copy of the record upon request from a conservation officer.

(9)(a) A person may not set any trapping device on posted private property without the landowner's or lessee [~~']~~'s written permission.

(b) Wildlife officers should be informed as soon as possible of any illegally set trapping devices.

(10) Peace officers in the performance of their duties may seize all trapping devices and wildlife used or held in violation of this rule.

(11) Except as provided in Subsection (6), a person may not possess any trapping device that is not permanently marked or tagged with that person's trap registration number while setting, checking, or moving a trapping device targeting a furbearer, coyote, or raccoon.

(12) All trapping devices used to take a furbearer, coyote, or raccoon must be checked and animals removed at least once every 48 hours, except;

(a) killing traps striking dorso-ventrally;

(b) drowning sets; and

(c) lethal cable devices that are set to capture on the neck, that have a nonrelaxing lock, without a stop, and are anchored to an immovable object; which must be checked every 96 hours.

(~~14~~ 13)(a) A person may not remove from a trapping device and thereafter transport or possess:

(i) live protected wildlife [~~.—~~]; or

(ii) a live coyote or raccoon in violation of Section 4-23-111.

(b) Any live animal found in a trapping device must be [~~killed or~~]:

(i) euthanized and removed from the device by the trapper within the 48-hour trap check period in R657-11-9(12); or

(ii) released immediately by the trapper unharmed.

(~~15~~ 14) The trapping restrictions in Subsections (1), (2), and (3) do not apply to a trapping device set within 600 feet of a building or structure occupied or utilized by humans or domestic livestock, provided the trapping device is set:

(a) to capture a coyote or raccoon; and

(b) with the landowner [~~+~~]'s or lessee [~~+~~]'s permission.

R657-11-10. Use of Bait.

(1) A person may not use protected wildlife or its parts as bait or scent to take a furbearer, coyote, or raccoon, except for the following;

(a) White-bleached bones of protected wildlife with no hide or flesh attached; and

(b)(i) parts of legally taken furbearers; and

(ii) nonprotected wildlife.

(2) Trapping devices used to take furbearer, coyote, or raccoon;

(a) may not be set within 30 feet of any exposed bait;

(b) may not be placed near carcasses of protected wildlife provided the carcass has not been moved for the purpose of trapping and the trapping device is not located within 30 feet of the carcass.

(3) White-bleached bones with no hide or flesh attached may be set within 30 feet of a trapping device.

(4)(a) Bait used inside an artificial cubby set must be placed at least eight inches from the opening.

(b) Artificial cubby sets must be placed with the top of the opening even with or below the bottom of the bait so that the bait is not visible from above.

(c) A person using bait is responsible if it becomes exposed for any reason.

(5) The trapping restrictions in Subsections (2) and (4) do not apply to a trapping device set within 600 feet of a building or structure occupied or utilized by humans or domestic livestock, provided the trapping device is set;

- (a) to capture a coyote, or raccoon; and
- (b) with the landowner's or lessee's permission.

R657-11-11. Accidental Trapping.

(1)(a) Any protected wildlife accidentally caught in a trapping device that is alive must be immediately released unharmed by a person authorized in R657-11-9(5) and (6).

(b) All incidents of accidental trapping of protected wildlife must be reported to the division within 48 hours.

(2)(a) Permission must be obtained from a division representative to remove from a trapping device the carcass of any protected wildlife accidentally caught.

(b) The carcass remains the property of the state and must be turned over to the division.

(3) Black-footed ferret, lynx and wolf are protected species under the Endangered Species Act. Accidental trapping or capture of any federally protected species must be immediately reported to both the U.S. Fish and Wildlife Service and the division.

(4) A person that captures or kills an unauthorized species of protected wildlife in a trapping device is not criminally liable under state law for that take, provided the person:

- (a) was not attempting to take the unauthorized species;
- (b) possesses a valid trap registration license [or a valid written authorization from the owner of the trapping device as provided in R657-11-9\(6\)](#);
- (c) possesses the licenses, permits and tags required to trap the targeted wildlife species; and
- (d) otherwise complies with the provisions of the Wildlife Code, this rule, and guidebooks applicable to trapping the targeted wildlife species.

R657-11-12. Methods of Take and Shooting Hours.

(1) Furbearers, except bobcats and marten, may be taken by any means, excluding explosives and poisons, or as otherwise provided in Section 23-13-17.

(2) Bobcats may be taken only by shooting, trapping, or with the aid of dogs as provided in Section R657-11-26.

(3) Marten may be taken only with an elevated, covered set in which the maximum trap size shall not exceed 1 1/2 foothold or 160 Conibear.

(4) Taking furbearers by shooting or with the aid of dogs is restricted to one-half hour before sunrise to one-half hour after sunset, except as provided in Section 23-13-17.

(5) A person may not take any wildlife from an airplane or any other airborne vehicle or device or any motorized terrestrial or aquatic vehicle, including snowmobiles and other recreational vehicles.

R657-11-13. Spotlighting.

- (1) Except as provided in Subsection (3):
 - (a) a person may not use or cast the rays of any spotlight, headlight, or other artificial light to locate protected wildlife while having in possession a firearm or other weapon or device that could be used to take or injure protected wildlife; and
 - (b) the use of a spotlight or other artificial light in a field, woodland, or forest where protected wildlife are generally found is probable cause of attempting to locate protected wildlife.
- (2) The provisions of this section do not apply to:
 - (a) the use of the headlights of a motor vehicle or other artificial light in a usual manner where there is no attempt or intent to locate protected wildlife; or
 - (b) a person licensed to carry a concealed weapon in accordance with Title 53, Chapter 5, Part 7 of the Utah Code, provided the person is not utilizing the concealed weapon to hunt or take wildlife.
- (3) The provisions of this section do not apply to the use of an artificial light when used by a trapper to illuminate his path and trap sites for the purpose of conducting the required trap checks, provided that:
 - (a) any artificial light must be carried by the trapper;
 - (b) a motor vehicle headlight or light attached to or powered by a motor vehicle may not be used; and
 - (c) while checking trapping devices with the use of an artificial light, the trapper may not occupy or operate any motor vehicle.
- (4) Spotlighting may be used to hunt coyote, red fox, striped skunk, or raccoon where allowed by a county ordinance enacted pursuant to Section 23-13-17.
- (5) The ordinance shall provide that:
 - (a) any artificial light used to spotlight coyote, red fox, striped skunk, or raccoon must be carried by the hunter;
 - (b) a motor vehicle headlight or light attached to or powered by a motor vehicle may not be used to spotlight the animal; and
 - (c) while hunting with the use of an artificial light, the hunter may not occupy or operate any motor vehicle.
- (6) For purposes of the county ordinance, "motor vehicle" shall have the meaning as defined in Section 41-6-1.
- (7) The ordinance may specify:
 - (a) the time of day and seasons when spotlighting is permitted;
 - (b) areas closed or open to spotlighting within the unincorporated area of the county;
 - (c) safety zones within which spotlighting is prohibited;
 - (d) the weapons permitted; and
 - (e) penalties for violation of the ordinance.
- (8)
 - (a) A county may restrict the number of hunters engaging in spotlighting by requiring a permit to spotlight and issuing a limited number of permits.
 - (b) A fee may be charged for a spotlighting permit.
- (9) A county may require hunters to notify the county sheriff of the time and place they will be engaged in spotlighting.

(10) The requirement that a county ordinance must be enacted before a person may use spotlighting to hunt coyote, red fox, striped skunk, or raccoon does not apply to:

(a) a person or his agent who is lawfully acting to protect his crops or domestic animals from predation by those animals; or

(b) a wildlife service [redacted]'s agent acting in his official capacity under a memorandum of agreement with the division.

R657-11-14. Use of Dogs.

(1) Dogs may be used to take furbearers only from one-half hour before sunrise to one-half hour after sunset and only during the prescribed open seasons.

(2) The owner and handler of dogs used to take or pursue a furbearer must have a valid, current furbearer license in possession while engaged in taking furbearers.

(3) When dogs are used in the pursuit of furbearers, the licensed hunter intending to take the furbearer must be present when the dogs are released and must continuously participate in the hunt thereafter until the hunt is completed.

R657-11-15. State Parks.

(1) Taking any wildlife is prohibited within the boundaries of all state park areas except those designated as open by the Division of Parks and Recreation in Section R651-614-4.

(2) Hunting with a rifle, handgun, or muzzleloader on park areas designated open is prohibited within one mile of all park facilities including buildings, camp or picnic sites, overlooks, golf courses, boat ramps, and developed beaches.

(3) Hunting with shotguns, crossbows, and archery equipment is prohibited within one quarter mile of the above stated areas.

R657-11-16. Transporting Furbearers.

(1)(a) A person who has obtained the appropriate license and permit may transport green pelts of furbearers. Additional restrictions apply for taking bobcat and marten as provided in Section R657-11-6.

(b) A registered Utah fur dealer or that person's agent may transport or ship green pelts of furbearers within Utah.

(2) A furbearer license is not required to transport red fox or striped skunk.

R657-11-17. Exporting Furbearers from Utah.

(1) A person may not export or ship the green pelt of any furbearer from Utah without first obtaining a valid shipping permit from a division representative.

(2) A furbearer license is not required to export red fox or striped skunk from Utah.

R657-11-18. Sales.

(1) A person with a valid furbearer license may sell, offer for sale, barter, or exchange only those species that person is licensed to take, and which were legally taken.

(2) Any person who has obtained a valid fur dealer or fur dealer's agent certificate of registration may engage in, wholly or in part, the business of buying, selling, or trading green pelts or parts of furbearers within Utah.

(3) Fur dealers or their agents and taxidermists must keep records of all transactions dealing with green pelts of furbearers.

(4) Records must state the following:

(a) the transaction date; and

(b) the name, address, license number, and tag number of each seller.

(5) A receipt containing the information specified in Subsection (4) must be issued whenever the ownership of a pelt changes.

(6)(a) A person may possess furbearers and tanned hides legally acquired without possessing a license, provided proof of legal ownership or possession can be furnished.

(b) A furbearer license is not required to sell or possess red fox or striped skunk or their parts.

R657-11-19. Wasting Wildlife.

(1) A person may not waste or permit to be wasted or spoiled any protected wildlife or its parts as provided in Section 23-20-8.

(2) The skinned carcass of a furbearer may be left in the field and does not constitute waste of wildlife.

R657-11-20. Depredation by Badger, Weasel, and Spotted Skunk.

(1) Badger, weasel, and spotted skunk may be taken anytime without a license when creating a nuisance or causing damage, provided the animal or its parts are not sold or traded.

(2) Red fox and striped skunk may be taken any time without a license.

R657-11-21. Depredation by Bobcat.

(1) Depredating bobcats may be taken at any time by duly appointed Wildlife Services agents, employed by Wildlife Services, while acting in the performance of their assigned duties and in accordance with procedures approved by the division.

(2) A livestock owner or his employee, on a regular payroll and not hired specifically to take furbearers, may take bobcats that are molesting livestock.

(3) Any bobcat taken by a livestock owner or his employee must be surrendered to the division within 72 hours.

R657-11-22. Depredation by Nuisance Beaver.

(1) Beaver doing damage or other nuisance behaviors may be taken or removed during open and closed seasons with either a valid furbearer license or a nuisance permit.

(2) A nuisance permit to remove beaver must first be obtained from a division office or conservation officer.

R657-11-23. Survey.

Each permittee who is contacted for a survey about their furbearer harvesting experience should participate in the survey regardless of success. Participation in the survey helps the division evaluate population trends, harvest success and collect other valuable information.

R657-11-24. Reserved.

R657-11-25. Season Dates and Bag Limits.

Season dates, bag limits, and areas with special restrictions are published annually in the guidebook of the Wildlife Board for taking furbearers.

R657-11-26. Approval to Trap on State Waterfowl Management Areas.

(1)(a) Trapping wildlife, including nonprotected species, on state waterfowl management areas is prohibited unless specifically authorized by the division. Trapping is a property management tool used to protect waterfowl populations and infrastructure improvements found on the property.

(b) The authorization to trap on state waterfowl management areas shall be provided through a certificate of registration that is awarded to an individual or individuals through a competitive proposal solicitation process.

(c) On or before October 1 of each year, the division shall publicly notice which state waterfowl management areas are available for proposal by publishing the notice on its website and by publishing a notice in a newspaper of general circulation at least once a week for two consecutive weeks.

(d) The notification and advertising shall include:

(i) the deadline for applying for the certificate of registration;

(ii) the wildlife species authorized for trapping;

(iii) a general description of the trapping area authorized under the certificate of registration;

(iv) the desired form of compensation to the division, whether monetary, in-kind, or both;

(v) the division's management objectives for the state waterfowl management area; and

(vi) any special considerations or limitations the division will require of the trapper or trappers while they are on the state waterfowl management area.

(2)(a) Applications must include the following:

(i) a nonrefundable application fee;

(ii) the name of the state waterfowl management area being applied for;

(iii) a description of the applicant's familiarity with the state waterfowl management area being applied for;

(iv) a list of the individuals who will conduct trapping activities under the certificate of registration;

(v) a description of each individual's experience trapping and their ability to utilize removal of targeted species to protect waterfowl and wildlife populations and infrastructure found at state waterfowl management areas;

(vi) the projected number of animals, specifically muskrat, that may be removed via trapping;

(vii) how the proposal accomplishes the identified management objectives for the waterfowl management area;

(viii) how the proposal conforms with any special considerations or limitations identified by the division in its public notice; and

(viii) a bid amount to be paid to the Division in exchange for the authorization to trap on the state waterfowl management area.

(c) All individuals listed on the application who will conduct trapping activities under the certificate of registration must:

(i) possess a trap registration license;

(ii) use traps marked with the owner's trap registration number; and

(iii) meet all age, proof of hunter education and furharvester

requirements, including youth restrictions as provided in Utah Code 23-19-24, 23-19-11 and 23-20-20.

(d) The bid amount described in Subsection (vi) above may include non-monetary, in-kind contributions.

(3)(a) Late or incomplete applications may be rejected.

(b) A separate application must be submitted for each state waterfowl management area the applicant wishes to trap on.

(c) In the event that there is more than one application for a certain state waterfowl management area, the division will analyze each application and select a successful applicant or applicants whose proposal best accomplishes the division objectives identified in the public notice.

(4) The selected applicant will be issued a certificate of registration authorizing trapping activities on the state waterfowl management area for a period of up to two years.

(5) A certificate of registration issued pursuant to this Part may be revoked, suspended, or terminated consistent with the terms of Utah Code 23-19-9 and Utah Admin. Code R657-26.

R657-11-27. Trapping Fees on State Waterfowl Management Areas.

(1) Upon verified payment of required fees, certificates of registration will be mailed to successful applicants granted trapping privileges on state waterfowl management areas.

(2) If a successful applicant fails to make full payment within 14 days of the results posting date, an alternate trapper will be selected.

(3) Certificates of registration are not valid until signed by the superintendent in charge of the area to be trapped.

R657-11-28. Vehicle Travel on State Waterfowl Management Areas.

Vehicle travel is restricted to developed roads. However, written permission for other travel may be obtained from the waterfowl management area superintendent.

R657-11-29. Trapping Hours on State Waterfowl Management Areas.

On waterfowl management areas traps may be checked only between one-half hour before official sunrise to one-half hour after official sunset.

R657-11-30. Trapper Responsibilities on State Waterfowl Management Areas.

(1) All trappers are directly responsible to the waterfowl management area superintendent.

(2) Violation of management or trapping rules, including failure to return a trapping permit within five days of cessation of trapping activities, or failure to properly trap an area, as determined and recommended by the superintendent, may be cause for cancellation of trapping privileges, existing and future, on all waterfowl management areas.

R657-11-31. Reserved.

R657-11-32. Wildlife Management Areas.

A person may not use motor vehicles on division-owned wildlife management areas closed to motor vehicle use without first obtaining written authorization from the appropriate division regional office.

KEY: wildlife, furbearers, game laws, wildlife law

Date of Enactment or Last Substantive Amendment: November 25, 2017

Notice of Continuation: July 13, 2015

Authorizing [7] and Implemented or Interpreted Law: 23-14-18; 23-14-19; 23-13-17



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Governor

SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Wildlife Resources

MICHAEL D. FOWLKS
Interim Division Director

MEMORANDUM

TO: Utah Wildlife Board and Regional Advisory Council Members
FROM: Darren DeBloois, Predatory Mammals and Furbearer Program Coordinator
DATE: July 10, 2018
SUBJECT: **2018-19 Bobcat and Furbearer Recommendations**

We are recommending the following season dates and permit allocations for Furbearing Species:

- Beaver and Mink: September 22, 2018 – April 3, 2019
- Badger, Gray Fox, Kit Fox, Ringtail, Spotted Skunk, Marten and Weasel: September 22, 2017 – March 1, 2019
- Bobcat: Two out of three management targets are within plan objectives. As per the Utah Bobcat Management Plan, we are not recommending any changes to permit allocation or season dates. Individuals will be allowed up to 6 permits with no cap on permits overall. Bobcat season will be November 14, 2018 – March 1, 2019





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MEMORANDUM

TO: Utah Wildlife Board/Regional Advisory Council Members
FROM: Darren DeBloois, Predatory Mammals and Furbearer Program Coordinator
DATE: July 10, 2018
SUBJECT: **2018-19 COUGAR PERMIT RECOMMENDATIONS**

The attached table summarizes the Utah Division of Wildlife Resources recommended limited entry, split and harvest objective permit allocations for the 2018-19 cougar-hunting season. These recommendations have been made taking into consideration cougar harvest data from 2017-18, prey population dynamics for mule deer and bighorn sheep, and using the Utah Cougar Management Plan. Adjustments to permits are within the parameters set out in the Utah Cougar Management Plan, and will help ensure healthy cougar populations while addressing local issues of concern including impacts to specific prey populations, livestock depredation and maintaining cougar hunting opportunities across the State.

Highlights:

1. We recommend a reduction of permits on the Ogden, Wasatch Mtns, Cascade, and Wasatch Mtns, Timpanogos because those units are failing to meet management objective set forth in the Utah Cougar Management Plan. We are also recommending changing the Ogden unit season structure from Harvest Objective to Split in order to encourage more selectivity from hunters and decrease female take.
2. We recommend increases of permits and or quotas on 21 units because they are meeting the objectives set forth in the Cougar Management Plan. These units include:
 - a. Beaver (9-13)
 - b. Box Elder, Desert (5-10) and change season from Split to HO
 - c. Box Elder, Raft River (8 – 10)
 - d. Central Mtns, Nebo-West Face (12-15)
 - e. Central Mtns, Northeast Manti (13-16)
 - f. Central Mtns, Northwest Manti (9-11)
 - g. Central Mtns, Southeast Manti (18-22)
 - h. Central Mtns, Southwest Manti (12-18)

July 11, 2018

Subject: 2017 Cougar Recommendations

- i. East Canyon (10-15) and change season from LE to Split
 - j. Fillmore, Pahvant (14-19)
 - k. Monroe (9-15)
 - l. Morgan-South Rich (10-15) and change season from LE to Split
 - m. Oquirrh-Stansbury (12-14) and change season from LE to Split
 - n. Panguitch Lake (10-12)
 - o. Pine Valley, North (12-14)
 - p. Plateau, Boulder (14-16)
 - q. South Slope, Bonanza/Diamond Mtn/Vernal (20-24)
 - r. Wasatch Mtns, Avintaquin-Wildcat (15-20)
 - s. Wasatch Mtns, Currant Creek-North (12-15)
 - t. West Desert, Tintic-Vernon (9-12)
 - u. Zion (20-23)
3. We propose changing the Pausaugunt unit from Harvest Objective to Split with the following season:
- a. LE 11/7/18 – 2/24/19
 - b. HO 2/28/19 – 5/31/19
4. We propose changing the Plateau, Thousand Lakes unit from Harvest Objective to Split.
5. Other dates are as follows:
- a. Limited Entry Only: November 7, 2018 – May 31, 2019
 - b. Split: LE November 7, 2018 – Feb. 24, 2019; HO February 28, 2019 – May 31, 2019
 - c. Harvest Objective: November 7, 2018 – November 5, 2019
 - d. Unlimited Units: November 7, 2018 – November 5, 2019
 - e. Pursuit Season: November 7, 2018 – May 31, 2019

Unit Number	Unit Name	Predator Management Considerations	Summary of Harvest Data from last 3 Years					Permits/Quota Recommendation	Hunt Strategy	Recommended Permit/Quota Change
			Males	Females	Total	% females (Target <40%)	% >5 yrs old (Target 15 - 20%)			
22	Beaver	No	22	4	26	15%	38%	13	Split	4
10a	Book Cliffs, East	Deer	47	36	83	43%	29%	29	HO	0
10b/11b	Book Cliffs, Rattlesnake Canyon/Nine Mile, South	BHS	1	0	1	0%	0%	Unl	Unlimited	
1b	Box Elder, Desert	BHS	6	4	10	40%	50%	10	HO	5
1c	Box Elder, Pilot Mtn	BHS	0	0	0	--	--	6	HO	0
1a	Box Elder, Raft River	No	15	1	16	6%	43%	10	Split	2
2	Cache	No	42	26	68	38%	17%	25	HO	0
16a	Central Mtns, Nebo (excludes West Face)	Deer/BHS	31	10	41	24%	11%	12	split	0
16a1	Central Mtns, Nebo-West Face	BHS	16	3	19	16%	25%	15	split	3
16b2	Central Mtns, Northeast Manti	Deer	14	7	21	33%	33%	16	split	3
16b1	Central Mtns, Northwest Manti	Deer	16	7	23	30%	23%	11	split	2
16c2	Central Mtns, Southeast Manti	Deer	34	9	43	21%	29%	22	split	4
16c1	Central Mtns, Southwest Manti	Deer	22	7	29	24%	31%	18	split	6
6&7	Chalk Creek/Kamas	No	20	3	23	13%	32%	12	LE	0
5	East Canyon	No	17	4	21	19%	40%	15	Split	5
5a	East Canyon, Davis	No	6	3	9	33%	13%	5	Split	0
21a	Fillmore, Oak Creek	BHS	6	8	14	57%	21%	12	HO	0
21b	Fillmore, Pahvant	Deer	26	7	33	21%	20%	19	Split	5
15	Henry Mtns	BHS	8	4	12	33%	10%	12	HO	0
26	Kaiparowits	BHS	3	0	3	0%	0%	Unl	Unlimited	
13	La Sal	Deer/BHS	12	5	17	29%	13%	15	HO	0
23	Monroe	Deer	19	8	27	30%	25%	15	Split	6
4	Morgan-South Rich	No	19	4	23	17%	23%	15	Split	5
24	Mt Dutton	No	16	7	23	30%	39%	15	Split	0
11a	Nine Mile, North	BHS	40	24	64	38%	22%	25	HO	0
8ab	North Slope, Summit/West Daggett	BHS	11	5	16	31%	43%	10	HO	0
8c	North Slope, Three Corners	BHS	5	3	8	38%	0%	10	HO	0
3	Ogden	No	23	21	44	48%	15%	12	Split	-1
18	Oquirrh-Stansbury	BHS	16	4	20	20%	35%	14	Split	2
28	Panguitch Lake	No	27	4	31	13%	25%	12	Split	2
27	Paunsaugunt	Deer	7	6	13	46%	46%	10	Split	0
30a	Pine Valley, North	No	24	5	29	17%	24%	14	HO	2
30b	Pine Valley, South	BHS	13	9	22	41%	26%	12	HO	0
25c	Plateau, Boulder	Deer	27	10	37	27%	37%	16	Split	2
25a	Plateau, Fishlake	No	28	10	38	26%	13%	16	Split	0
25b	Plateau, Thousand Lakes	Deer	2	4	6	67%	33%	4	Split	0
14b	San Juan, Desert	BHS	0	1	1	100%	100%	Unl	Unlimited	
14a	San Juan, Mountains	Deer/BHS	30	13	43	30%	13%	25	HO	0
12	San Rafael	BHS	0	3	3	100%	0%	Unl	Unlimited	
9bcd	South Slope, Bonanza/Diamond Mtn/Vernal	Deer	34	20	54	37%	29%	24	HO	4
9a	South Slope, Yellowstone	Deer	12	11	23	48%	47%	10	HO	0
20	Southwest Desert	No	12	7	19	37%	26%	13	HO	0
17c	Wasatch Mtns, Avintaquin-Wildcat	BHS	29	12	41	29%	13%	20	HO	5
17a2	Wasatch Mtns, Cascade	No	8	7	15	47%	14%	4	HO	-1
17b	Wasatch Mtns, Currant Creek-North	No	20	1	21	5%	48%	15	LE	3
17a1	Wasatch Mtns, Timpanogos	No	10	9	19	47%	13%	5	HO	-2
17a3	Wasatch Mtns, West-Strawberry	No	19	2	21	10%	14%	11	LE	0
17a4	Wasatch Mtns, Salt Lake	No	0	0	0	--	--	6	HO	0
19a	West Desert, Mtn Ranges	No	3	2	5	40%	25%	8	HO	0
19b	West Desert, Tintic-Vernon	No	8	1	9	11%	33%	12	Split	3
29	Zion	No	33	13	47	28%	29%	23	HO	3
STATEWIDE TOTALS			859	374	1,234	30%	25%	653		72



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DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
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Division of Wildlife Resources

MICHAEL D. FOWLKS
Division Director

MEMORANDUM

Date: July 12, 2018

To: Wildlife Board and Regional Advisory Council Members

From: Kimberly Hersey, Nongame Mammals Coordinator

Subject: Rule Amendments – R657-48 Sensitive Species

The Utah Division of Wildlife Resources is recommending changes to the Wildlife Sensitive Species rule in order to simplify the rule and clean up out dated language. The changes will remove the process of automatically adding ESA species and conservation agreements, and remove the wildlife habitat designations.

See the attached redline rule for details.

R657. Natural Resources, Wildlife Resources.[]

R657-48. Wildlife Sensitive Species [~~of Concern and Habitat Designation Advisory Committee.~~]

R657-48-1. Authority and Purpose.

(1) Pursuant to [~~Sections~~Section 23-14-19[~~and 63-34-5(2)(a)~~] of the Utah Code, this rule:

(a) [—(a)— establishes the Wildlife Species of Concern and Habitat Designation Advisory Committee;]

~~[(b) defines its purpose and relationship to local, state and federal governments, the public, business, and industry functions of the state;]~~

~~[(c) defines the Utah Sensitive Species List; and]~~

~~[(d) defines the procedure for:][(i) the designation of wildlife species of concern as part of a process to preclude listing under the ESA; and]~~establishes the process for designating wildlife sensitive species as part of an effort to prevent further imperilment of wildlife species native to Utah and preclude additional listings under the ESA;

~~[(ii) review, identification and analysis of wildlife habitat designation and management recommendations relating to significant land use development projects.]~~

(b)]_defines the Utah Sensitive Species List; and (c) defines the manner in which the Sensitive Species List is intended to be used.

R657-48-2. Definitions.

(1) [—(1)—]The terms used in this rule are defined in Section 23-13-2.

(2) [—(2)—]In addition:

(a) [—(a)—]"Committee" means the Wildlife Sensitive Species[~~of Concern and Habitat Designation~~] Advisory Committee.

~~[(b) "Conservation species" means wildlife species or subspecies that are currently receiving special management under a conservation agreement developed or implemented by the state to preclude the need for listing under the ESA.]~~

(b) [—(c)—]"Department" means the Department of Natural Resources.

(c) [—(d)—]"Division" means the Division of Wildlife Resources within the Department.

(d) [—(e)—]"ESA" means the federal Endangered Species Act.

(e) [—(f)—]"Executive Director" means Executive Director of the Department.

~~[(g) "Habitat identification material" means maps, data, or documents prepared by the Division in the process of specifying wildlife habitat.]~~

~~[(h) "Management recommendations" means determinations of, amount of, level of intensity, timing of, any restrictions, conditions, mitigation, or allowances for activities proposed for a project area pursuant to this rule.]~~

~~[(i) "NEPA" means the National Environmental Policy Act as defined in 42 U.S.C. Section 4321-4347.]~~

(f) [—(j)—]"Interested Person" means an individual, firm, association, corporation, limited liability company, partnership, commercial or trade entity, any agency of the United States Government, the State of Utah, its departments, agencies and political subdivisions.

~~[(k) "Project area" means the geographical area covered by a significant land use development.]~~

~~[(l) "Proposed wildlife habitat designation" means identified habitat in a project area undergoing review pursuant to this rule.]~~

~~[(m) "Significant land use development" means any project or development identified as such by the Executive Director, or as approved through petition as described in Section R657-48-5.]~~

~~[(n) "Wildlife habitat designation document" means the written decision of the Executive Director after following the provisions of this rule for wildlife habitat designation and management recommendations for a project area.]~~

~~[(o) "State sensitive species" means:]~~

~~[(i) wildlife species or subspecies listed under the ESA, and now or previously present in Utah;]~~

~~[(ii) wildlife species or subspecies de-listed under the ESA during the past six months that are now or were previously present in Utah;]~~

~~[(iii) wildlife species or subspecies now or previously present in Utah that are currently proposed by the U.S. Fish and Wildlife Service for listing under ESA;]~~

~~[(iv) candidate wildlife species or subspecies under the ESA now or previously present in Utah;]~~

~~[(v) wildlife species or subspecies removed from the ESA candidate list during the past six months that are now or were previously present in Utah;]~~

~~[(vi) conservation species; or]~~

~~[(vii) wildlife species of concern.]~~

~~[(p) "Wildlife habitat designation" means the wildlife habitat identification within a project area issued pursuant to this rule.]~~

~~[(q) "Wildlife habitat identification" means the description, classification and assignment by the Division of any area of land or bodies of water as the habitat, range or area of use, seasonally, historically, currently, or prospectively of or by any species of game or non-game wildlife in the State of Utah.]~~

~~[(r) "Wildlife species of concern" means a wildlife species or subspecies within the state of Utah for which there is credible scientific evidence to substantiate a threat to continued population viability.]~~

~~[(s) "Wildlife species of concern]~~

(g) "Wildlife sensitive species" means a native wildlife species or subspecies within the state that is undergoing or is likely to undergo substantial declines in population size or distribution, throughout significant portions of its range within the state, without cooperative management intervention or mitigation of threats.

(h) "Wildlife sensitive species designation" means the decision to bestow [~~wildlife species of concern~~]or remove wildlife sensitive species status on a wildlife species or subspecies, [~~or remove wildlife species of concern status from a wildlife species or subspecies,~~]pursuant to this rule.

(i) [(t)]"Utah Sensitive Species List" means the list of all current state sensitive species.

R657-48-3. Department Responsibilities.

(1) [—(1)—]There is established a Wildlife Sensitive Species [~~of Concern and Habitat Designation~~]Advisory Committee within the Department of Natural Resources.

(2) [~~—(2)—~~]The Department shall provide staff support, arrange meetings, keep minutes, and prepare and distribute final recommendations.

R657-48-4. Committee Membership and Procedure.

(1) Committee membership shall consist of:

(a) [~~—(a)—~~]the Executive Director of the Department;

(b) [~~—(b)—~~]the Director of the Utah Public Lands Policy Coordinating Office or a designee;

(c) [~~—(c)—~~]the Director of the Division or a designee;

(d) [~~—(d)—~~]the Director of the Division of Oil, Gas and Mining or a designee;

(e) [~~—(e)—~~]the Director of the Division of Water Resources or a designee; and

(f) [~~—(f)—~~]any other Department Division heads or designees as determined by the Executive Director of the Department.

(2) [~~—(2)—~~]The Executive Director shall serve as chair.

(3) [~~—(3)—~~]Three members, consisting of the Executive Director, the Division Director and the Director of the Division of Oil, Gas and Mining, shall constitute a quorum for meetings of the Committee.

(4) [~~—(4)—~~]The Committee shall meet as specified by the Executive Director.

(5) [~~The following procedure shall be used for submitting review items~~]The Division Director shall submit all proposed wildlife sensitive species designations to the Executive Director for [~~inclusion on the~~]Committee [~~agenda:~~]review.

[~~—(a) the Division Director shall submit for committee review all proposed wildlife species of concern designations; and~~]

[~~—(b) the Division Director shall submit for committee review any proposed or existing wildlife habitat designations and corresponding management recommendations within a project area.~~]

(i) The Division shall support its proposals for wildlife sensitive species [~~of concern~~]designations[~~, wildlife habitat designations and management recommendations~~] with:

(A) studies, investigations and research supporting the need for the designations[~~and the potential impacts of each proposal~~];

(B) field survey and observation data; and/or

(C) federal, state, local and academic information on habitat, historical and current species distribution, [~~and~~]threats to the species, population trends, and/or other data or information collected in accordance with generally accepted scientific techniques and practices[~~;~~], including findings expressed in the Utah Wildlife Action Plan.

(6) The Department will provide an [~~analysis~~]assessment of potential impacts of the proposed designations and the existing social and economic needs of the affected communities and interests.

R657-48-5. Public Participation and Setting of Meeting Agenda.

[~~—(1) An interested person may petition the Executive Director for a hearing before the Committee to designate a project as a significant land use development for purposes of this rule.~~]

~~[(2) The Executive Director shall act to approve or disapprove a petition or extension request within 14 calendar days.]~~

(1)(a) All meetings of the Wildlife Sensitive Species Advisory Committee shall comply with the Utah Open and Public Meetings Act, Utah Code Ann. § 52-4-101 et seq.

~~[(3)b](a) The meeting agenda shall consist of items determined by the Executive Director, and copies shall be sent to Committee members [and other interested persons as requested].~~

~~[(b)c] The agenda shall be posted on the Division website and distributed to the Committee members at least 28 calendar days prior to the meeting.~~

~~[(c) Requests to receive notices and agendas must be submitted in writing to the Executive Director's Office as provided in Subsection R657-48-9(1).]~~

~~[(4)2] Any interested person may:~~

~~(a) submit comments on proposed wildlife sensitive species [of concern and wildlife habitat] designations;~~

~~(i) comments must be submitted in writing to the Executive Director for review and must be submitted at least seven calendar days prior to the meeting; or~~

~~[(b) request an extension of up to 30 calendar days to review a proposed Committee action; or]~~

~~[(e)b] request to make an oral presentation before the Committee.~~

~~(i) An interested person seeking to make a presentation before the Committee concerning any matter under review, must submit a written request and supporting documentation to the Executive Director at least [14] seven calendar days prior to the meeting.~~

R657-48-6. Committee Review Actions.

(1) In conducting a review of issues, the Committee may:

(a) ~~[(a)]~~ require additional information from the Division, the Department or interested persons;

(b) ~~[(b)]~~ require the Division or interested persons to make presentations before the Committee or provide additional documentation in support or opposition of the recommendation;

(c) ~~[(c)]~~ schedule additional meetings where public interest or agency concern merits additional discussion;

(d) ~~[(d)]~~ undertake additional review functions as needed; or

(e) ~~[(e)]~~ consider the need for involvement of other persons or agencies, or whether other action may be needed.

(2) Following the Committee's review and recommendation, the Executive Director shall ~~[(a)]~~ make a final determination and, if warranted, recommend the approval of any or all proposed wildlife sensitive species ~~[of concern]~~ designations to the Wildlife Board; ~~[or]~~

~~[(b) in the case of proposed wildlife habitat designations, make a final determination.]~~

(3) The Executive Director's decision will be announced at that meeting, or the next formal meeting, on the proposed wildlife sensitive species [~~of concern designations or habitat~~] designations, unless an alternative time is required by federal or state law, or rule.

R657-48-7. Wildlife Sensitive Species [~~of Concern~~] Designation Process.

(1) A wildlife sensitive species [~~of concern~~] designation shall be made only after the Executive Director, following consideration of the Committee's recommendations, has made a formal written recommendation to the Wildlife Board, and after that Board has considered:

(a) [~~(a)~~] the Executive Director's recommendation, and all comments on such recommendation; and

(b) all data, testimony and other documentation presented to the Committee and the Wildlife Board pertaining to such proposed designation.

(2) All wildlife sensitive species [~~of concern~~] designations shall be made [:(~~(a)~~)] pursuant to the procedures specified in this rule [; and] [~~(b)~~] ~~as an independent public rulemaking pursuant to the Administrative Rulemaking Act, Title 63G, Chapter 4 of the Utah Code~~.

[~~(3) With each proposed wildlife species of concern designation, the accompanying analysis shall include either a species status or habitat assessment statement, a statement of the habitat needs and threats for the species, the anticipated costs and savings to land owners, businesses, and affected counties, and the inclusion of the rationale for the proposed designation.~~]

(3) [(~~(4)~~)] The Wildlife Board may approve, deny or remand the proposed wildlife sensitive species [~~of concern~~] designation recommendation to the Executive Director.

(4) [~~(5)~~] Until a proposed wildlife sensitive species [~~of concern~~] designation is finalized, the proposed designation may not be used or relied upon by any governmental agency, interested person, or entity as an official or unofficial statement of the state of Utah.

(5) [~~(6)~~] The Division shall maintain all data collected and other information relied upon in developing proposed wildlife sensitive species [~~of concern~~] designations as part of the administrative record and make such information available, subject to the Government Records Access and Management Act as defined in Section 62-2-101, for public review and copying upon request.

(6) [~~(7)~~] The Division shall maintain the Utah Sensitive Species List and update the list as necessary to maintain [~~consistency with Subsection R657-48-2(2)(o) as the statuses of~~] up-to-date status information on sensitive species which change [~~due to one or more of the following~~] because of:

[~~(a) wildlife species of concern or other wildlife species are listed under ESA;~~]

[~~(b) wildlife species are de-listed under ESA;~~]

(a) [(~~(c)~~)] wildlife species' [~~names change~~] name changes due to taxonomic revisions;

(b) [~~(d)~~] new wildlife sensitive species [~~of concern~~] are designated pursuant to this rule; or

- ~~[(e) wildlife species of concern status is removed from species pursuant to this rule;]~~
- ~~[(f) conservation agreements are developed and implemented for species;]~~
- ~~[(g) conservation agreements become invalid;]~~
- ~~[(h) species become candidates for listing under ESA;]~~
- ~~[(i) species lose candidate status under ESA;]~~
- ~~[(j) species are formally proposed for listing under ESA by the U.S. Fish and Wildlife Service; or]~~
- ~~[(k) species lose proposed status under ESA.]~~
- ~~[(8) If a species designated as a wildlife species of concern is listed under ESA, is proposed for listing under ESA, becomes a candidate for listing under ESA, or becomes a conservation species, the changed species status will be reflected in the Utah Sensitive Species List. If the species subsequently loses its ESA status or the conservation agreement becomes invalid, the species will revert to wildlife species of concern status.]~~
- (c) wildlife sensitive species status is removed from species pursuant to this rule.

R657-48-8. [~~Wildlife Habitat Designations and Management Recommendations.~~]Availability and Intended Uses.

- ~~[(1) Wildlife habitat designations and management recommendations for project areas will be made pursuant to the procedures specified by this rule.]~~
- ~~[(2) Any Department or Division map, identification of habitat, document or other material that is provided or released to, or used by any persons, including federal agencies, which includes wildlife habitat designations that have been adopted under this rule will so indicate.]~~
- ~~[(3) A proposed wildlife habitat designation and management recommendation shall be adopted by the Executive Director only after the Executive Director, following consideration of the Committee's recommendations, has considered all data, testimony and other documentation presented to the Committee pertaining to such proposed designation.]~~
- ~~[(4) Until a final determination on a proposed wildlife habitat and management recommendation has been made by the Executive Director, the proposed wildlife habitat or management recommendations may not be used or relied upon by any other governmental agency, interested person, or entity as an official or unofficial statement of the state of Utah.]~~
- ~~[(5) A Wildlife Habitat Designation document developed for the purpose of this rule, having been completed by the Executive Director, shall be attached to the wildlife habitat identification materials and made available for public review or copying upon request.]~~
- ~~[(6) The Division shall maintain all data collected and other information relied upon in developing proposed wildlife habitat designations and management recommendations as part of the administrative record, and make this information available in accordance with the Government Records Access and Management Act as defined in Section 62-2-101, for public review and copying upon request.]~~

[R657-48-9. Distribution.]

~~[(1) The Division shall send by mail or electronic means a copy of a proposed wildlife species of concern designation or wildlife habitat and management determination established under this rule to the following:]~~

~~[(a) any person who has requested in writing that the Division provide notice of any proposed wildlife species of concern designations or proposed wildlife habitat and management recommendations under this rule; and]~~

~~[(b) county commissions and tribal governments, which have jurisdiction over lands that are covered by a proposed wildlife habitat designation and management recommendation and of lands inhabited by a species proposed to be designated as a wildlife species of concern under this rule.]~~

(1) The Division shall make available by common electronic means on its website the wildlife sensitive species which are designated by this rule.

(2) Wildlife sensitive species designations are intended to inform natural resource management practices across the state by highlighting which wildlife species may warrant increased conservation attention through such means as habitat restoration, active species management, and avoidance, reduction, and mitigation of impacts, with ultimate goals of reducing the likelihood of future listings under the Endangered Species Act, and conserving the diversity of wildlife species native to Utah.

(2)3 Wildlife sensitive species [~~of concern~~]designations[~~, wildlife habitat designations or management recommendations~~] may not be used by governmental entities as a basis to involuntarily restrict the private property rights of landowners and their lessees or permittees.

KEY: sensitive species[~~of concern*~~, ~~habitat designation~~]

Date of Enactment or Last Substantive Amendment: August 8, 2006

Notice of Continuation: May 2, 2016

Authorizing, and Implemented or Interpreted Law: 23-14-19; 63-34-5(2)(a)

Utah Division of Wildlife Resources

Hardware Ranch Wildlife Management Area Management Plan 2018 - 2023



DRAFT

EXECUTIVE SUMMARY

Hardware Ranch Wildlife Management Area Habitat Management Plan Conservation Outreach Plan And Facilities Management Plan July 2018

Hardware Ranch Advisory Committee

This Committee is comprised of a group of stakeholders that represents various public interests who are interested in the management of the HRWMA, and includes members representing local community leaders, sportsmen, researchers, educators, biologists, and WMA managers. This Committee was assembled to advise and offer comment during the process to develop this management plan. HRWMA advisory committee members are listed below:

- Curt Webb; District 5, Utah House of Representatives
- Eric Newell; Dir. Technology and Experiential Learning, Edith Bowen Lab School, Utah State University
- Eric Thacker; Assistant Professor, College of Natural Resources, Utah State University
- Jake Forsgren; Cache County Weed Department
- Mike Laughter; Mule Deer Foundation
- Stephanie Miller; Mayor, Hyrum City
- Sandy Emile; President & CEO, Cache Chamber of Commerce
- Phil Douglass; Conservation Outreach Manager, Northern Region, UDWR
- Bradley Hunt; Hardware Ranch WMA Manager, Northern Region; UDWR
- Darren DeBloois; Mammals Program Coordinator, UDWR
- James Christensen; Asst. Wildlife Program Manager, Northern Region, UDWR

Habitat Management Plan Structure

In order to capture the wide scope of on-going management activities, outreach/education efforts, and facilities maintenance, the Hardware Ranch WMA Management Plan is structured as follows:

- Part 1: Habitat Management Plan & Appendices
- Part 2: Outreach Management Plan & Appendices
- Part 3: Facilities Management Plan

Primary Purposes of Hardware Ranch Wildlife Management Area

The primary purposes of Hardware Ranch Wildlife Management Area (HRWMA) are:

- Preserve, restore, and enhance both aquatic and terrestrial habitat for wildlife
- Maintain wildlife populations to meet wildlife management objectives
- Conserve, protect, and recover sensitive wildlife species and their habitats.
- Provide opportunities for awareness and exploration, and to inspire stewardship of wildlife resources through education, interpretation, volunteer opportunities, and partnerships.
- Provide safe, functional, clean, and orderly appearance of all facilities and associated lands

Background

Beginning in 1946, the Utah Fish and Game Department (UFGD; now the Utah Division of Wildlife Resources (UDWR)) began purchasing the property identified as the Hardware Ranch Wildlife Management Area. The intent of the acquisition was to establish a wintering area and supplemental feed ground to alleviate depredation on farm lands in Cache Valley. By providing a wintering area with natural browse, along with supplemental feed, there would be enough forage to support the wintering elk and deer migrating to the valley each winter. Winter outreach via horse drawn sleigh rides began on the WMA in the 1950s.

HRWMA is currently comprised of 14,332 acres of land. This land is managed by the UDWR for wildlife and wildlife habitat, while allowing for appropriate wildlife-oriented recreational activities.

Wildlife

HRWMA provides crucial winter habitat for a variety of terrestrial species, but particularly for big game, upland game, and sensitive species. Principle big game species that utilize HRWMA include rocky mountain elk, mule deer, moose, and pronghorn antelope. Typical upland game animals include: wild turkey; sandhill crane; ruffed and dusky grouse; chukar partridge; mourning dove; snowshoe hare; and mountain cottontail rabbit. Other species of interest include beaver, black bear, cougar and non-native trout species (rainbow, brook and brown).

Wildlife species considered a Species of Greatest Conservation Need (Wildlife Action Plan 2015-2025) which either currently occur on the WMA or are suspected to occur include: bald eagle; golden eagle; greater-sage grouse; sharp-tailed grouse; lewis' woodpecker; northern pygmy owl; flammulated owl; townsend's big-eared bat; fringed myotis; little brown myotis; gray wolf; canada lynx; northern leopard frog; great plains toad; boreal toad; bonnevillie cutthroat trout; and eureka mountain snail.

Disease Concerns/Considerations

Due to the concentration of large animal populations in a somewhat confined area, there is an increasing concern regarding possible disease transmission between wild cervids, and domestic livestock. The disease of particular concern is the infectious bacterial disease Brucellosis (*Brucella abortus*), which can cause reproductive problems (abortions, stillbirth, infertility) in most species of animals.

Consequently, HRWMA traps a minimum of 40 breeding age cow elk annually to test for Brucellosis. These elk are tagged and blood tested for evidence of the disease. Upon receiving a clean bill of health they are then released back into the wild population on the meadow. So far all test results have been negative.

To further address disease concerns UDWR placed 26 GPS (global positioning system) collars on trapped, breeding age cow elk during the winter of 2016-17. This effort is part of an interagency cooperative effort with Idaho and Wyoming to develop a more accurate distribution of potential disease carriers coming from known feed grounds in close proximity to northern Utah, south-eastern Idaho, and south-western Wyoming. Overall 120 collars will be placed throughout the study area to monitor movements, establish preferred habitat locations for calving, and test for diseases.

During years 1 and 2 of the study, no discernible change in feeding will take place at Hardware Ranch WMA. This will enable wildlife biologists to establish a baseline of elk movements, habitat use, and elk-deer interactions on the winter range that the WMA provides. During years 3 through 5, a more dispersed feeding pattern will be implemented on the WMA to spread the wintering herd over a larger area and reduce the potential for disease transmission by reducing the individual proximity found on typical feed rows. Changes in elk and mule deer behavior will be observed. Following the completion of the study, biological recommendations concerning the future of the feeding program can be evaluated and addressed in the next Habitat Management Plan, in approximately 5 years.

Habitat Conditions/Problems

Invasive and noxious weeds are a concern to maintaining healthy winter wildlife habitats. HRWMA's greatest weed concerns are: canada thistle; spotted knapweed; black henbane; medusahead rye grass; and cheatgrass. There have also been small populations of North Africa grass and camelthorn identified on the WMA in the last 2 years. These populations are suspected to have come to the WMA via the marked increase in OHV use. Large OHV "tour groups" have become increasingly popular in the last year, as well as the number of individual riders.

Large areas of encroaching Juniper are also present. These large areas reduce browse species which are critical for wintering mule deer. HRWMA Management is working closely with NRO habitat biologists and local sportsman groups to work on reducing the juniper footprint on the WMA.

The WMA also mandates the use of weed free hay for all domestic animals (i.e., pack and riding horses) that are fed on the WMA (i.e., not grazing animals) to reduce the potential spread of noxious weeds. The existing signs located throughout the WMA need to be updated to better notify users of this mandate.

Habitat Improvement

In conjunction with the ongoing GPS collar study evaluating elk movements and possible disease transmission concerns, habitat conditions on HRWMA will be evaluated and areas identified in the immediate vicinity surrounding the trap facilities and meadow area where treatments can be applied to increase the holding capacity for elk.

Livestock grazing is a useful tool for vegetation management and will continue on the WMA. The cattle grazing seeks to maintain a good shrub/grassland mix that provides excellent winter habitat for elk and mule deer. The sheep grazing reduces the amount of Dyer's woad occurring in Blacksmith Fork Canyon on the WMA, and also helps with the maintenance of good mixture of shrub/grassland in sheep allotments. The grazing has also helped to reduce the presence of fine fuels which has helped in slowing down wildland fires when they have occurred.

Beaver are also used to create and enhance wet meadow and riparian habitats throughout the WMA, with documented habitat improvements. Beaver will continue to be utilized to enhance these habitats.

Conservation Outreach & Public Education

Public education is the hallmark of HRWMA's mission. An extensive outreach education program has been developed and maintained at HRWMA.

Education

The education effort at HRWMA centers around three main programs; Mountain Wilds to Wetland Wonders (MWWW), Kids in Action (KIA), and All About Elk. MWWW is conducted in partnership with the US Fish & Wildlife Service's Bear River Migratory Bird Refuge (BRBR) and involves 4th grade students from Box Elder County schools. The fall component of MWWW is conducted at HRWMA and the spring component is held at BRBR. While participating in this program students learn about wildlife and ecosystems in the respective areas; montane & wetland habitats.

KIA is hosted at HRWMA and is a joint effort between UDWR, USDA APHIS, and Cache County Weed Department. KIA is held twice a summer and involves high school students from Logan High School and 5th graders from Edith Bowen Laboratory Elementary School at Utah State University. While involved in this program students learn about invasive and noxious weeds and what tools, including biological control agents, are available to land managers to combat them. Using legitimate scientific protocols and equipment, the field day involves identifying existent bio-control populations, bio-control agent sampling, and release of new agents.

HRWMA's All About Elk education program runs concurrently with our winter outreach program and educates visiting students about predator-prey relationships, the essential needs of wildlife for sustainable populations, and the role hunting plays in wildlife management. Students of all ages, ranging from pre-kindergarten to high school, participate in All About Elk, and come from near and far to participate in the program.

Winter Programming

During the winter, HRWMA conducts an outreach program built around the feeding of 500-700 rocky mountain elk. This program includes horse drawn sleigh rides through the elk herd, where a captive audience receives a 20-25 minute UDWR approved message about the history of the WMA, elk biology, and the role the UDWR plays in managing the State's wildlife. This program will see as many as 30,000 visitors in a 13-week period.

Our winter outreach season begins with the Annual Elk Festival held the second Saturday in December. Various conservation group partners, local chapters, and sister agencies participate in this event. In the last 5 years the Elk Festival has grown from an average of 500 attendees to over 1,200. An amateur elk calling contest was featured during the 2017-2018 season.

In 2015 a muzzleloader/snowshoeing biathlon was added as way to promote winter recreation and shooting sports. It was successful and is now an anticipated annual event.

Hunting Education/Clinics

HRWMA hosts an advanced skills clinic related to hunting wild turkeys throughout the state. This clinic is conducted by the National Wild Turkey Federation and focuses on calling techniques, decoy setups, working difficult birds, camouflage, hunter safety, and much more.

In 2018 a basic skills clinic providing an introduction to muzzleloaders was offered in conjunction with the muzzleloader/snowshoeing biathlon. The clinic is conducted by the Willow Creek Free Trappers, a local group of mountain men and muzzleloading enthusiasts. The clinic focuses on basic safety, loading, and firing muzzleloaders. This experience was offered to all visitors of the WMA.

Recreational Opportunities

HRWMA is full of recreational opportunities. It is quite a popular hunting area for both big game and upland game species. Fishing is available on the Blacksmith Fork River, and on Rock and Curtis Creeks. It is not uncommon to see deer, elk, moose, turkeys, and sage grouse while recreating on the property.

As OHV use has grown in popularity the mountains and roads surrounding HRWMA are a popular spot for the public to get out and ride. HRWMA is the center hub of the Shoshone ATV Trail system, which connects Logan Canyon to Monte Cristo. Much of this trail is groomed during the winter and utilized by snowmobile riders also. Camping is another activity which is increasing annually. All of the sites on HRWMA are primitive and dispersed. Some areas are excluded from these activities to protect sensitive habitats.

Access Issues

HRMWA is currently open year round to the public with the exception of the bowl containing the sleigh ride meadow, comprising roughly 830 acres. As a WMA managed for the benefit of wildlife, and given that Hardware Ranch WMA is mostly used by wildlife during the winter, this plan recommends that the lands of Hardware Ranch WMA be closed from Jan. 1 to the second Saturday in April to protect wintering wildlife. While permitted, it is recommended that winter recreation be relegated to established/groomed trails only. This closure period is similar to other WMAs managed in the northern part of the state, and excludes Division sponsored activities.

Camping is major component of WMA access and is the most problematic issue. There are undeveloped, primitive sites along SR-101, and dispersed camping occurs all along the Laketown road heading north through the WMA. Camping begins in earnest on the WMA on or around Easter weekend, and is consistent through the end of the hunts in November. The busiest season of the year is between Memorial Day and Labor Day. October is also extremely busy during the elk hunt.

Recent years have shown an increase in hunting pressure in the meadows along SR-101. Hunters often "camp-out" all day in the pull outs along the highway to intercept elk crossing from the Ogden unit to the Cache unit, and then fire indiscriminately at crossing elk over the length of the meadow toward each other and Camp Wapiti, a large campsite near the meadows. Action was taken in the summer of 2017 to restrict the pull outs and shoulders of the road between Camp Wapiti and the WMA facilities to "no parking" areas. Parking is now directed to extra space near Camp Wapiti to disperse hunting, and encourage more ethical and safe means of harvesting an animal.

Facilities and General Maintenance Activities

All fences and gates will be maintained to protect habitat quality. Continuing will be the ongoing project of replacing 50+ year old wooden fences that are breaking down and falling apart. Habitat Council funding has aided this effort the last 2 years. HRWMA's access roads and parking lots will be maintained, including posting appropriate signs to communicate rules and regulations. All equipment, water control structures, bridges, and other capital resources will have continual maintenance and will be updated as necessary. Information and regulatory signs will be replaced as needed. There is a need to add more definitive signs to WMA entrances and check the property boundaries for adequate or out of date signage. Noxious and invasive weeds will be monitored and controlled using herbicide applications supplemented with biological control agents.

The existing irrigation system is being evaluated to determine its effectiveness. Following this evaluation ditches will be adjusted, moved, or re-cut as needed in order to improve irrigation on the hay meadow.

Property Management Needs

- Inspect, repair, and replace fences that are breaking down. Ensure range fences for grazing livestock are adequate.
- Increase and/or update signage to mark WMA boundaries and entrances.
- Improve the present irrigation system to more efficiently use water rights and maximize hay production.
- Annually work with DFCM and DWR leadership to study the present condition of WMA facilities. Use the findings to bring the facility to a greater than 90% rating.

Proposed Management Changes to HRWMA

- Match other northern WMA closures to protect wildlife during the winter. UDWR recommends that the lands known as HRWMA be annually closed from Jan. 1 to the second Saturday in April to protect wintering wildlife, and that winter recreation on the WMA be relegated to established/groomed trails only. This winter closure period is also used on other UDWR northern region WMA's to protect wintering wildlife populations from human disturbances which causes additional stress to animals during late winter conditions.
- During the winter of 2018-2019, winter feeding will begin to be reduced and be done in a dispersed fashion to reduce the close proximity of elk feeding in typical feed rows. This new feeding pattern will be monitored for changes in wildlife behavior and activities.

- Following the completion of the GPS collar study on elk movements, biological recommendations concerning the future of the feeding program can be evaluated and addressed in the next Habitat Management Plan, in approximately 5 years.
- Explore and implement different hunt strategies to address public safety concerns on the WMA during hunting season during the life of this plan.
- Explore and implement strategies to mitigate the effects of increased camping and commercial activities on the WMA during the life of the plan.

Wildlife and Habitat Goal, Objectives, and Strategies

Goal: Ensure that wildlife and the habitat they depend on are protected with consideration for the wildlife-oriented recreation activities.

Objective 1: Decrease elk impacts to landowners in Cache Valley during the life of the plan.

Strategy 1 - Raise 300 - 350 tons of hay to feed 550 - 650 wintering elk and draft horses for 120 days. (Maintains existing water rights).

Objective 2: Decrease the possibility of elk contracting brucellosis and potentially spreading it through the herd during the life of the plan.

Strategy 1 - Initiate, adjust, and terminate **annual** elk feeding according to the Hardware Ranch WMA Standard Operations Procedure, in consultation with the district biologist.

Strategy 2 - Evaluate elk feeding based on recommendations following the completion of the Cache Unit disease risk assessment study.

Strategy 3 - Evaluate risk of elk on Cache Unit coming into contact with brucellosis and elk in Idaho and Wyoming.

- a) 2017 - In coordination with Wildlife Section, installed 26 GPS collars on elk trapped at Hardware Ranch WMA.
- b) 2018 - With Wildlife Section, continue to trap and install GPS collars on elk at HRWMA and throughout the Cache Unit.
- c) 2019 - Monitor, in conjunction with Wildlife Section, the movements of GPS collared elk on Hardware Ranch WMA in response to feed reduction measures.
- d) 2020 - Educate public on Migration Initiative and risks associated with disease spread.
- e) 2021 - Educate public about proposed feed program adjustments based on risk assessments, determined from collar data.

Strategy 4 - Feed elk in mosaic pattern instead of feed rows to spread elk out and reduce risk of disease exposure in the feeding area.

Strategy 5 - Bait, trap, and hold elk in current facility for annual disease testing, in coordination with the district Wildlife Biologist.

Objective 3: Increase the quality and availability of winter range plant communities for big game species throughout the life of the plan.

Strategy 1 - Utilize UDWR Range Crew assessments and annual USU range transects to determine areas of needed improvement and/or maintenance.

Strategy 2 - Develop big game winter range improvement projects in areas that need habitat enhancement, considering impacts to other wildlife species. WMA manager will submit proposals, in consultation with habitat and wildlife biologists, through WRI.

Strategy 3 - Establish grazing prescriptions that enhance wildlife habitat. Contractors will provide their own portable facilities to handle livestock and will not use elk pens, hay meadows, or stream watering areas. Select watering areas may be approved by the WMA manager. Grazing projects will be initiated according to the DWR Lands Use Rule R657-28.

Strategy 4 - Grazing contractors will provide, in coordination with WMA manager, regular infrastructure maintenance and improvements through in-kind work performed for their grazing permits.

Strategy 5 - Identify, in approved publications, Hardware Ranch WMA as closed to unauthorized use from Jan 1 to the second Saturday in April to protect wintering wildlife.

- a) Authorized winter recreation permitted via Division sanctioned activities, Special Use Permits, and on established state & county roads and groomed trails.
- b) Establish a camping season.

Objective 4: Decrease habitat impacts in controlled and dispersed camping sites by a minimum of 25% over the life of the plan.

Strategy 1 - Protect habitat by educating WMA users through improved signage and regular contact with Division personnel.

- a) Make regular contact with people recreating on the WMA. (Once every 2-3 days)

- b) Provide placards containing guidelines of approved WMA usage to campers and other users.
- c) Contact law enforcement if other methods prove ineffective.

Strategy 2 - Explore strategies to mitigate excessive, unregulated use of WMA property and the impacts to habitat. Strategies may be implemented during the life of the plan and may include, but are not limited to:

- a) Assessing a WMA Daily Fee.
- b) Establishment of a WMA Camping Season.
- c) Reduction or elimination of approved camping locations.
- d) Review of DWR Lands Use Rule in regard to recreation related activities on Division lands.
- e) Develop a site plan for Camp Wapiti.
- f) Identify designated camping sites using logs, rock structures, and/or signage.
- g) Provide a pit toilet at Camp Wapiti to prevent campers from using the trees along the river as a latrine.
- h) Improve and maintain campground roads to reduce disturbance to other areas.
- i) Prevent the possibility of camping related wildfire by installing 3 campfire ring improvements annually, until all sites have rings that meet State standards.
- j) Plant trees to provide thermoregulation and beautification.

Strategy 3 - Educate campers about camping rules and encourage self-policing in more primitive camping areas through daily contact and installing Camping Sign-In boxes.

Strategy 4 - Ensure that all WMA use is in compliance with the Division Lands Use Rule regarding commercial activities on Division properties.

Strategy 5 - Identify in hunting & fishing guidebooks and on the ground through signage, areas that are closed or restricted seasonally.

- a) Identify in the Big Game Field Regulations guidebook the CLOSED Area on Hardware Ranch WMA.
- b) Identify in the Fishing Guidebook the CLOSED Area on Hardware Ranch WMA.
- c) Annually check and replace signs marking the CLOSED area surrounding the main hay production/feeding meadow.
- d) Open and close the Division gate to the Pole Hollow area on June 15 and September 15, respectively.
- e) Address public safety concerns during hunting season.
 - Close pull outs along SR-101 meadows to parking and prohibit parking along SR-101.
 - Provide more parking near Camp Wapiti to still allow hunting and fishing access to Rock Creek and the SR-101 meadows.

Strategy 6 - Enforce Division Land Management Rules after every effort has been made to communicate the rules to users. This may require a concerted law enforcement effort.

Objective 5: Decrease and prevent the spread of noxious weeds during the life of the plan.

Strategy 1 - Develop and implement policies to avoid the importation of invasive species to HRWMA.

- a) Continue the mandate of imported weed free hay on Hardware Ranch WMA.
- b) Maintain WMA roads (non-county roads) to encourage riders staying on designated roads.
- c) Redefine the Access Management Plan for the WMA, identifying approved roads.

Strategy 2 - Inventory invasive species in GIS layers and document their spread, containment, and/or eradication.

Strategy 3 - Perform efforts to effectively identify the perimeter of weed plant communities, contain and prevent spreading, and eradicate satellite populations.

Strategy 4 - Conduct rehabilitation of areas where control efforts are taking place, through reseeded and re-plantings of desirable communities.

Strategy 5 - Annually update the methods and priorities for weed and invasive species control.

Objective 6: Maintain existing riparian and aquatic habitat and explore opportunities to enhance these habitats during the life of the plan.

Strategy 1 - Identify riparian areas that require habitat enhancement, submit proposals in November annually and complete approved projects.

Strategy 2 - Maintain and/or replace riparian fencing enclosures annually.

Strategy 3 - Identify the need for beaver population adjustments by trapping or relocation in Rock Creek and Curtis Creek canyons, in consultation with Wildlife Section.

Strategy 4 - Identify areas for beaver mitigation based on HRWMA's Adaptive Beaver Management Plan, developed in concert with Utah State University's Watershed Sciences Department.

Objective 7: Maintain the current diversity of sensitive species on Hardware Ranch WMA throughout the life of the plan.

Strategy 1 - Coordinate all projects to avoid negative effects on sensitive species.

Strategy 2 - Identify methods to improve sage grouse habitat.

Strategy 3 - Livestock will not be grazed during the strutting season near occupied leks.

Outreach Goal, Objectives, and Strategies

Goal: Provide opportunities for awareness, exploration, and inspire stewardship of wildlife resources through education, interpretation, volunteer opportunities, and partnerships.

Objective 1: Maintain winter visitation at 25,000 visitors while monitoring visitation in response to elk feeding assessment.

Strategy 1 - Conduct sleigh rides each winter that emphasize awareness and enjoyment of wildlife recreation as a family activity.

Strategy 2 - Evaluate the public's attitudes toward feeding wildlife in general and at Hardware Ranch WMA through annual surveys.

Strategy 3 - Survey winter visitors to improve understanding of consumer base. (i.e. licensed/non- licensed, age, etc.)

Strategy 4 - Install a car counter to capture total impact of WMA use.

Objective 2: Maintain existing programs and increase opportunities to engage public interest and encourage year round visitation.

Strategy 1 - Conduct targeted events to promote conservation education and wildlife recreation oriented activities.

- a) September (2nd & 3rd weeks) - NR Field Days (NRFD), partnered with Utah State University
- b) October (T-Th) - Mountain Wilds Wetland Wonders (MWWW), partnered with Bear River Bird Refuge (BRBR), fall portion at HRWMA
- c) December - February - Winter Sleigh Rides
- d) December (2nd Sat.) - Elk Festival
- e) January (2nd Sat.) - Willy Wapiti's Smoke Pole Biathlon
- f) March - Spring Strut Turkey Hunting Clinic, conducted by National Wild Turkey Federation

- g) April (T-Th) - MWWW, partnered with BR Bird Refuge, spring portion at BRBR
- h) June & August - Kids in Action (KIA), partnered with USDA Forest Service, APHIS, Cache County Weed Dept., hosted at HRWMA

Strategy 2 - Evaluate the possibility of future events.

- a) Moonlight Sleigh Rides (around February 14)
- b) Take your own pictures of wildlife with our camera Day!
- c) More seminars and clinics; i.e. upland game, fly fishing, etc.

Strategy 3 - Develop summer activities and educational programs.

- a) Develop summer Jr. Ranger style program (Jr. Biologist)
- b) American West Heritage Center Handcart Treks (Jun - Jul)
- c) Hyrum City Community Service Day

Strategy 4 - Identify the HRWMA Visitor Center as an education center and provide a greater interactive, self educating experience in the Visitor Center through increasing interpretive displays.

Strategy 5 - Develop skills based clinics to educate new hunters and anglers and improve their interest and skills in hunting and fishing.

- a) Strategy 6 - Develop and annually conduct a visitor use survey to monitor public attitudes, concerns, and visitation.

Facilities Goal, Objectives, and Strategies:

Goal: Provide for safe, functional, clean, and orderly appearance of all facilities and associated lands.

Objective 1: Increase DFCM rating for Hardware Ranch WMA facilities from the 80th percentile to the 90th percentile during the life of the plan.

Strategy 1 - Maintain facilities and infrastructure according to the Standard Operations Procedure Manual (SOP).

- a) Perform regular maintenance activities outlined in the SOP.
- b) Review SOP Manual annually and update as needed.

Strategy 2 - Commission through the DFCM approval process, a Facility Program Study to evaluate the current status, needs, and associated costs with upgrading the facilities at HRWMA.

Strategy 3 - Develop an annual budget for Wildlife Inventory Maintenance (WIMS) items and track maintenance activities in WIMS.

- a) Monthly log into WIMS to record regular maintenance and document repairs.

Strategy 4 - Review existing capital inventory and recommend improvements and large repairs through the request process.

- a) Identify use of each structure.
- b) Improve siding on buildings to reduce man hours required for maintenance.
- c) Upgrade lighting to LED lighting bulbs and fixtures.
- d) Repave parking lots at VC, lower lot, and barnyard.
- e) Repave walking path from VC to lower lot and road to sleigh shack.

Strategy 5 - Develop and implement a landscaping plan including vegetation, irrigation, and public spaces around the Visitor Center to beautify and improve public perception of the WMA.

Strategy 6 - In coordination with DFCM upgrade and improve the WMA power corridor to provide consistent, stable power to the WMA.

- a) Establish a maintenance contract with Hyrum City Power or another line company to regularly maintain the power line and infrastructure at industry standard.

Objective 2: Increase irrigation capabilities for the production meadows.

Strategy 1 - Improve current state of irrigation ditches.

- a) Burn ditches every spring and spray with herbicide in the fall as needed.
- b) Fill in and re-dig ditches as needed to prevent erosion and leaking.

Strategy 2 - Explore opportunities to incorporate pressurized irrigation for improved meadow irrigation.

Objective 3: Maintain elk management facilities to annually monitor fed elk for disease.

Strategy 1 - Assist Wildlife Section with annual repairs to existing facility during the summer and fall.

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**Hardware Ranch
Wildlife Management Area**

- Habitat Management Plan Summary -

July 2018

Prepared by:

Utah Division of Wildlife Resources

Northern Region

**515 East 5300 South
Ogden, Utah 84405**



Hardware Ranch Wildlife Management Area Habitat Management Plan Summary July 2018

1. Background Information

Property Description:

Hardware Ranch Wildlife Management Area (HRWMA) is located in Cache County in northern Utah, approximately 16 miles east of Hyrum. HRWMA lies in parts of townships T10N and T11N; R2E, R3E, and R4E in the Blacksmith Fork River drainage, and encompasses approximately 14,332 acres. HRWMA is bordered by both United States Department of Agriculture, Forest Service-managed lands, and by private lands. Elevations in HRWMA range from 5,200 to 7,600 feet. The topography varies from rolling hills to steep canyons, with vegetation types including sagebrush, mountain brush, conifer, aspen and riparian corridors. Appendix A shows the location and boundaries of HRWMA. Detailed legal descriptions of HRWMA lands can be found in Appendix B.

Historical Background and Context

The state of Utah purchased the ranch in 1946 from the Ernst Lorentz Petersen family estate, who immigrated to Utah from Denmark in the 1860s. The property was known as the Box Elder Hardware Company. Historical land uses include ranching, cultivated fields, open range grazing, timber harvest, hunting, fishing, and other recreational pursuits. Beginning with the first land purchases in 1946, uses on the HRWMA have consistently included:

- Winter elk feeding to reduce crop depredation in Cache Valley
- Providing and improving habitat for big game and other wildlife species
- Accommodating public access for hunting, fishing and other wildlife related recreational uses

The town of Hyrum, located downstream near the mouth of Blacksmith Fork Canyon, was settled in 1860 by 23 pioneer families. By 1870, farming was well established in the southern areas of Cache Valley, and in 1873 construction of a road from Hyrum, east and up the canyon was initiated to get better access to ranching, mining, timber harvest and other ventures. This road provided access to the Hardware Ranch area. The canyon had always been a main route accessing good hunting and fishing, and the road eventually connected at the top to the historic Ant Flat Trail, which today continues south to the Monte Cristo area of Weber County and SR-39.

By 1900, unrestricted hunting by early settlers had eliminated most of the elk from their natural ranges in northern, central and south-central Utah. Although a hunting season was established in 1898, the only remnant Utah elk herd was in the Uinta Mountains. Interstate transplants brought 200 elk into Utah from Idaho, Montana, and Wyoming between 1912 and 1925, and elk from Yellowstone National Park were released into Logan Canyon, and near Brigham City at about the same time. Sportsmen from Smithfield also moved 5 elk from Montana into Smithfield Canyon during the same period. Elk populations began to increase and by 1929, small numbers

of elk were being moved within Utah in an attempt to redistribute them into areas that would aid and balance the recovery.

By the 1940s, the elk population in the mountains above Cache Valley had increased dramatically and numbered in the hundreds. A few hundred wintered along the benches and began causing depredation issues by eating haystacks and crops, and by interfering with the increasing dairy and agricultural activities. Mule deer were also thriving and contributing to crop depredation.

In July 1940, the then Utah Department of Fish and Game, now UDWR, proposed to purchase lands on the Millville Face at the mouth of Blacksmith Fork Canyon in order to reduce crop depredation by big game in Cache Valley (this area was not the HRWMA). *The Preliminary Project Statement* indicated:

“This area has, since colonization of the valley, been heavily grazed by livestock. After creation of the National Forests and control of grazing seasons thereon was initiated, these lands received added abuse as they were subjected to over-stocking during fall, winter, and spring months... Grazing by livestock should be prohibited if game animals are to be perpetuated in this locality... Although the State has done a great deal of supplemental feeding here for a number of years, the game herd has reached its peak and has definitely started down-hill with a heavy loss from poverty showing in the spring of 1939... With proper administration of these lands, game can again be increased without damaging results to the range... Some 2500 to 3000 deer and 400 to 500 elk are involved.”

Subsequent acquisitions added lands to the Millville Face Winter Range. In 1945, the Utah Department of Fish and Game proposed to purchase ground further up Blacksmith Fork Canyon, which was known as Hardware Ranch. The Federal Aid application (W-12-L) stated:

“The Hardware Ranch, located on the Blacksmith Fork River, between North and South Cottonwood canyons and Curtis Creek, has long been a troublesome area from the standpoint of damage complaints, principally from elk in haystacks in winter, and deer on cultivated and growing crops in spring... [The Ranch] produces from 150 to 300 tons of hay annually, dependent on the water supply... Since elk summered on and near the ranch, they soon became accustomed to feeding in the open stacks in winter and caused a great deal of loss to the owner... A few years ago, the State Department of Fish and Game constructed elk-tight stack yards to eliminate these losses. This resulted in a shift of practically the entire elk herd down the canyon and onto the face of the mountain between Hyrum and Providence where they came into competition with deer... and immediately adjacent to horticultural operations. ...Harvesting the crops [on Hardware Ranch] for use by game is an attempt to reestablish their wintering habits to this section and away from the foothill farm lands where numbers of game must be determined by the tolerance of the landowners.”

The Hardware Ranch Wildlife Management Area was established during a “procurement period of time” in the mid-1900s when the Federal Aid in Wildlife Restoration Act (1937) enabled

states to obtain properties to protect fish and wildlife habitats, and provide access for sportsmen(W-12-L). The Division has conducted a winter elk feeding program at HRWMA since the winter of 1947, and it has grown into a major public winter attraction in northern Utah.

Minerals

Information pertaining to mineral rights can be found in the UDWR Salt Lake Office. Additional mineral right information can also be found in Appendix B in association with the appropriate deed. UDWR would be concerned with the development of any mineral right interests, as they could impact wildlife through the disruption of surface habitats and seasonal use periods.

Water rights/shares

HRWMA has 42 separate water rights with all the rights now perfected. Approximately 12.023 cfs of water are designated for irrigation of the hay production meadows. Approximately 25 ac/ft is designated for domestic/culinary use. The bulk of UDWR’s water rights are stock watering rights. HRWMA’s irrigation rights are junior to water rights held by irrigation companies in Cache Valley. There are over 23 miles of irrigation ditches and roads that have approximately 15 water control structures (culverts and head gates) within them. These water control structures allow the water to be distributed to the 120 acres of the WMA that is used to raise the hay that supports the winter outreach feeding program.

Table 1. Hardware Ranch UDWR Water Rights.

Water Right #	Name	Flow (cfs)	Source	Priority
25-3704	UDWR	*	Dry Curtis Creek	1858
25-4252	UDWR	3.0 cfs or 342.60 ac-ft	Curtis Creek	1870
25-4261	UDWR	3.0 cfs or 35.70 ac-ft	Curtis Creek	1870
25-4262	UDWR	3.0 cfs	Curtis Creek	1870
25-4263	UDWR	3.0 cfs	Unnamed Spring	1870
25-4277	UDWR	*	Curtis Creek	1858
25-4283	UDWR	*	Unnamed Tributary to Curtis Creek	1858
25-4288	UDWR	*	Rock Creek	1858
25-4291	UDWR	*	South Cottonwood Canyon Creek	1858
25-4292	UDWR	*	South Cottonwood Canyon Creek	1858
25-4299	UDWR	*	Devil’s Gate Canyon Creek	1858
25-4356	UDWR	*	Devil’s Gate Canyon Creek	1858
25-4357	UDWR	*	Devil’s Gate Canyon Creek	1858
25-4358	UDWR	*	Curtis Creek	1858
25-4359	UDWR	*	Curtis Creek	1858
25-4360	UDWR	*	Dry Curtis Creek	1858
25-4361	UDWR	*	Curtis Creek	1858
25-4362	UDWR	*	Blacksmith Fork River	1858
25-4363	UDWR	*	Blacksmith Fork River	1858
25-4364	UDWR	*	Unnamed Tributary to Curtis Creek	1858
25-4365	UDWR	*	Blacksmith Fork River	1858

Water Right #	Name	Flow (cfs)	Source	Priority
25-4366	UDWR	*	Rock Creek	1858
25-4367	UDWR	*	South Cottonwood Canyon Creek	1858
25-4368	UDWR	*	South Cottonwood Canyon Creek	1858
25-4369	UDWR	*	South Cottonwood Canyon Creek	1858
25-4370	UDWR	*	Blacksmith Fork River	1858
25-4371	UDWR	*	Blacksmith Fork River	1858
25-4399	UDWR	*	Blacksmith Fork River	1858
25-4401	UDWR	0.015 cfs	Unnamed Spring Area	1858
25-4434	UDWR	0.008 cfs	Rock Creek	1858
25-4571	UDWR	*	Rock Creek	1858
25-4577	UDWR	*	Devil's Gate Canyon Creek	1858
25-4580	UDWR	*	Blacksmith Fork River	1858
25-4581	UDWR	*	Unnamed Trib. to Blacksmith Fork River	1858
25-4582	UDWR	*	Chub Creek	1858
25-4584	UDWR	*	Dry Curtis Creek	1858
25-4701	UDWR	*	Curtis Creek	1858
25-4745	UDWR	*	North Cottonwood Canyon Creek	1859
25-4747	UDWR	*	Devil's Gate Canyon Creek	1859
25-4757	UDWR	*	Unnamed Trib. to Curtis Creek	1859
25-9761	UDWR	0.25 ac-ft	Well water(Visitors Ctr. and residential)	1996
25-11151	UDWR	0.90 ac-ft	Well water (Visitors Ctr. and residential)	1870

*= No flows established; water right silent on flows.

Table 2. Hardware Ranch Water Rights owned by another party.

Water Right #	Name	Flow (cfs)	Source	Priority
25-4300	H.R. and Isabella S. Adams	*	Devils gate canyon creek	1858
25-4400	Hugh R. Adams	*	Blacksmith Fork River	1858
25-8042	Svend Johansen	0.25 ac-ft	Well and Stream	1979
25-4579	USA Forest Service	*	North Cottonwood Canyon	1858
25-4713	USA Forest Service	*	Rock Creek	1859
25-4583	USA Forest Service	*	Blacksmith Fork River	1858
25-4287	DEE's Inc	*	Blacksmith Fork River	1858

*= No flows established; water right silent on flows.

Easements/ROWS/MOUs

The UDWR has developed and/or granted several easements, leases, or agreements. They are as follows:

- UDWR MOU with Cache County Public Work, 2016; Agreement #171154. This MOU was jointly developed to assist with weed spraying activities on the WMA and permits annual foot & OHV surveys on HRWMA to identify & map new and existing colonies of invasive & noxious weeds. It also provides for the supply & application of herbicides to designated colony sites.

- South Cache Grazing Association; Grazing Proposal SCLA 2017-02-24. This agreement provides for 735 AUMs of cattle to be grazed on HRWMA for a specified period of time or until a management objective of greater than 80% removal of current annual growth from perennial and annual grasses has been achieved. SCLA holds the contract for a 5 year period, with an annual permit being issued specifying the grazing prescription.
- UDWR has contracted with JR. Goring of Goring Ranch to graze Dyer's wood on the south facing slopes of the WMA in Blacksmith Fork Canyon. In lieu of payment Goring Ranch is provided grazing for 160 AUMs of sheep on Hardware Plateau and Curtis Ridge.

Grazing History

Grazing has been a part of Hardware Ranch since approximately 1858 when the earliest pioneers began to run livestock east out of Cache Valley, and up Blacksmith Fork Canyon. Ranches and farms followed timber and mining operations well beyond where Levi Curtis homesteaded much of what is now Hardware Ranch Wildlife Management Area in 1868. Records indicate that big game was plentiful and by the early 1900s there were increasing conflicts between farmers trying to graze public land and store hay, and deer and elk looking for food in the winter. By the late 1930's the Utah Department of Fish and Game (UDFG) began exploring ways to mitigate the winter crop depredation in the valley, and to balance the habitat needs of wildlife against ever increasing livestock grazing along the foothills and in other important wildlife habitats.

HRWMA opened to the public under State ownership in the winter of 1945-46. Initially there was no attempt to feed large numbers elk and deer, but as public attraction to the ranch grew, so did a formal winter feeding program. In the spring, attention turned to spreading livestock grazing over the new public land in order to improve range grasses that would also benefit wildlife. Both sheep and cattle have grazed on HRWMA since then, with UDWR utilizing the grazing for vegetation manipulation, in exchange for "in-kind" work to maintain and improve fences and other infrastructure.

Range conditions and management objectives have changed over the 70+ years that Hardware Ranch has operated as a wildlife management area. Recent decades of prolonged drought, an explosion of noxious and invasive weeds, human encroachment on critical wildlife ranges and habitats, and dramatic shifts in big game populations have all contributed to the need to rehabilitate and protect critical habitat.

Through land acquisitions, HRWMA has grown to approximately 14,332 acres and about 65% of this is appropriate for some type of domestic livestock grazing. Utah Division of Wildlife Resources Administrative Rule 657-28 describes the uses and activities allowed on Division Lands. It provides for prescribed domestic livestock grazing "necessary for the maintenance or improvement of wildlife habitat on particular division properties." Grazing by cattle is used annually at HRWMA. Implementing prescriptive grazing on the remaining 35% of the land is difficult due to very steep slopes and rocky, thin soils which do not respond well to disturbance. Because of these constraints, prescriptive grazing is focused on the lands that can be effectively grazed with the prescriptions designed to achieve specific goals and objectives. A formal

Grazing Management Plan has not yet been developed for HRWMA, but will be considered to inform future management strategies to improve wildlife habitats.

Land Acquisition History

In 1945, the UDFG submitted a proposal to the US Fish and Wildlife Service (USFWS) requesting funds to purchase 6,000 acres of ground from Ernst Peterson and Sons for essentially the same reasons as the Millville purchase. This land was located approximately 16 miles east of the Town of Hyrum, at the head of Blacksmith Fork Canyon, and was already known as Hardware Ranch or “the Hardware.” This initial land acquisition for HRWMA began with the purchase of 2,336 acres in 1945 (W-12-L). Additional purchases, land exchanges and donations occurred over the years which brought the HRWMA to approximately 14,400 acres.

A land exchange in 2005 between the Division and the privately owned Coldwater Ranch, finalized with a U.S. Fish and Wildlife Service Environmental Assessment, eliminated some in-holdings on HRWMA. This resulted in UDWR acquiring 798 acres, Coldwater Ranch (Dee’s Inc.) acquiring 918.15 acres (approx. 798 acres in exchange, plus the purchase of 122 acres). In 2016 a neighboring parcel of 40 acres was purchased. HRWMA is currently about 14,332 acres. Please see the Table 3 and Appendix B for detailed land acquisition information.

Table 3. Hardware Ranch WMA Acquisition History. (See Appendix B for full legal descriptions)

Date Acquired	Previous Owners & Deed Reference #	Acquisition Method	Acreage	Township; Range; Sections
1946	Molen and Mary Peterson #218276	Warranty Deed	160.00	Township 10 North, Range 3 East: Section 11
1948	Raymond and Vilda Nielsen #231305	Warranty Deed	1,829.60	Township 10 North, Range 3 East, Sections: 7, 18, 19, 20, 21, and 30
1948	Ernest and Annie Petersen #232800	Warranty Deed	1,625.00	Township 10 North, Range 3 East, Sections: 1, 2, 10, 11, 12, 13, 14, 15, 16, and 17
1948	Ernest and Annie Peterson #236148	Warranty Deed	240.00	Township 10 North, Range 3 East, Sections: 7 and 8
1949	Joseph and Naomi Olsen; Ernest and Sadie Olsen #213584	Warranty Deed	1,078.88	Township 10 North, Range 3 East, Section 24 Township 10 North, Range 4 East, Sections 18 and 19
1949	Joseph and Naomi Olsen; Ernest and Sadie Olsen #213584	Warranty Deed	56.50 442.80 80.00 40.00 640.00	Township 10 North, Range 3 East, Section 14 Township 10 North, Range 3 East, Section 13 Township 10 North, Range 4 East, Section 17 Township 10 North, Range 4 East, Section 7 Township 10 North, Range 4 East, Sections: 8, 17, 18

1958	Joseph and Jene Peterson; LeGrand and Zeltha Mathews #293714	Warranty Deed	839.56	Township 10 North, Range 3 East, Sections: 1, 12, 7, and 18
1966	Leone Hansen #340719	Warranty Deed	478.83 1,840.86 280.00 1,495.11	Township 10 North, Range 3 East, Sections: 1, and 2 Township 10 North, Range 4 East, Sections: 3, 4, 5, 6, 8, 9, and 10 Township 11 North, Range 3 East, Section 25 Township 11 North, Range 4 East, Sections: 29, 30, 31, and 32
1976	United States of America #399310	Trade/ Exchange	2,279.64	Township 10 North, Range 3 East, Sections: 1, 3, 7, 8, 9, 10, 11, 14, 15, 17, and 23 Township 10 North, Range 4 East, Sections: 8, 17, and 18 Township 11 North, Range 3 East, Section 25
1977	Svend and Ruth Johansen #401117	Warranty Deed	40.00	Township 10 North, Range 3 East, Section 11
1994	State of Utah, Div. State Lands, Forestry & Fire #528401	Patent	644.16	Township 11 North, Range 3 East, Section 36
2001	State of Utah, SITLA #770612	Patent	80.00 640.00	Township 10 North, Range 3 East, Section 2 Township 10 North, Range 3 East, Section 16
2007	Dee's Inc. (Coldwater Ranch) #945385	Special Warranty Deed	798.00	Township 10 North, Range 3 East, Sections: 17, 18, 19, 20, 21, 22, and 30
2015	Bruce Hall #1132715	Warranty Deed	40.00	Township 10 North, Range 3 East, Section 12

Table 4. Hardware Ranch WMA Disposal History. (See Appendix B for full legal descriptions)

Date Acquired	New Owners & Deed Reference #	Acquisition Method	Acreage	Township, Range, Sections
1976	United States of America, U.S. Forest Service #373612	Trade/Exchange	2,294.35	Township 10 North, Range 4 East, Sections: 3, 4, 5, 8, 9, and 10 Township 11 North, Range 4 East, Sections: 29, 30, and 32
2007	Dee's Inc. (Coldwater Ranch) #945385	Exchange/Quit Claim	918.15	Township 10 North, Range 3 East, Sections: 19, 20, 21, and 30

Historic Uses

Lehi Curtis homesteaded much of what is now Hardware Ranch Wildlife Management Area in 1868, with the property used for grazing, mining and logging. See additional information provided under the above sections: Historical Background; Grazing; and Land Acquisition History.

Purpose of Division Ownership

The original purpose of UDWR acquisition of the WMA was to provide habitat for deer and elk, and to reduce big game depredation on agricultural fields in Cache Valley. The current purpose of UDWR ownership of the WMA is multi-faceted. As development increases in Cache Valley, with the attendant habitat fragmentation and human disturbances, HRWMA has become more important for wildlife as relatively undisturbed winter habitat. Over the years, a wide variety of both traditional and non-traditional recreational activities have increased throughout Utah, with Hardware Ranch now providing opportunities to pursue many of these activities. In addition, UDWR has created an extensive public education outreach program through the WMA to increase public awareness, understanding and appreciation of Utah's wildlife.

The mission of Hardware Ranch Wildlife Management Area is unique among Utah wildlife management areas because of staffing and the on-site approach to elk feeding, habitat management and public outreach. It is also the only WMA managed by the Conservation Outreach section of the Division. A mission statement for HRWMA has been developed as a framework for identifying management goals and objectives as follows:

“The mission of the Hardware Ranch Wildlife Management Area is to provide healthy habitats that support sustainable wildlife populations, and to increase public awareness and stewardship of Utah’s wildlife”.

Key Wildlife Species Occurring on HRWMA

Big Game

A variety of big game animals are found on the WMA. These include: Rocky Mountain elk, mule deer, moose, and pronghorn antelope.

Rocky Mountain elk (*Cervus elaphus*) are typically found on the HRWMA during the fall and winter months. Animals begin to arrive in October, and winter on feed rows on and around the upper meadow complex. These elk are the primary reason that the Division owns and maintains Hardware Ranch WMA. Numbers of wintering elk range from about 450 to 650 individuals, depending on winter severity.

Mule deer (*Odocoileus hemonius*) can be found on the WMA all year long, primarily in the higher elevation and mountain brush areas in summer, and on south facing brushy slopes in winter. Wintering areas on HRWMA are important to the overall management objectives for the Cache and Ogden management units. Numbers of wintering deer range from 500 to 1,000.

Moose (*Alces alces*) are found on HRWMA year round and are usually located at higher elevations in river corridors in the summer and fall, and in stands of Curl-leaf mountain

mahogany in the winter. The overall population of moose is low in this area, with animals infrequently observed on the WMA.

Groups of pronghorn (*Antilocapra americana*) are found on HWRMA and are becoming more common in the area. The core pronghorn population generally occurs in Rich County, but small numbers of individuals will occasionally use habitat on the HRWMA. For example, HRWMA supported a small number of pronghorn over the summer in 2010, and have had a few winter on HRWMA in recent years.

Upland Game

Mountain cottontail (*Sylvilagus nuttalli*), Greater sage-grouse (*Centrocercus urophasianus*), Chukar partridge (*Alectoris chukar*), Mourning dove (*Zenaida macroura*), Rio Grande Wild turkey (*Meleagris gallopavo intermedia*), Dusky grouse (*Dendragapus obscurus*), Ruffed grouse (*Bonasa umbellus*), and Sandhill crane (*Grus canadensis*) are the most commonly found upland game species on the WMA. Columbian sharp-tailed Grouse (*Tympanuchus phasianellus columbianus*) have also been observed in the area, but no known leks have been found.

Greater Sage Grouse

Hardware Ranch WMA is found within the Rich-Morgan-Summit Sage Grouse Management Area. There are currently two active sage grouse leks on the WMA, with the majority of the WMA supporting critical sage grouse habitats including nesting, brood-rearing, and winter habitats. Two other habitat types are found on the WMA including: “Other” Habitat, which are lands used by sage grouse at various times throughout the year, but are not considered critical habitats; and “Opportunity” habitat, which are those areas which do not currently contribute to the life cycle of sage grouse, but are areas where restoration or rehabilitation efforts could provide additional habitat.

The 2 active leks on the WMA include:

- The Hardware Ranch lek, where data has been collected since 1966, with an average male count of 16. The recent 10 year rolling averages are 16. Prior to the construction of the elk pens and trap facility, this lek used to have large numbers of male grouse (500 birds) strutting on the area (Steve Kearn, Assistant Ranch Manager, circa. 1965). Sage grouse populations are influenced by multiple factors and may or may not have been influenced by the construction of the elk trap facility.
- The Hardware Plateau lek, where data has been collected since 1968, with an average male count of 13. The recent 10 year rolling averages are 22.

There are two active leks in the general vicinity of the Ranch which include:

- The Strawberry Valley lek, where data has been collected since 2009, with an average male count of 4. The recent 10 year rolling averages are 4.
- The Ant Flat lek, where data has been collected since 2007, with an average male count of 20. The recent 10 year rolling averages are 20.

Not much is known about this population outside of lek counts. Nesting and wintering all seem to be relatively non-migratory, as birds appear to stay around these lek areas throughout most of the year. However, no telemetry studies have been conducted, and few observations during the

rest of the year (non lekking periods) have been recorded. We believe there are relatively small migrations between populations because no marked birds from nearby Rich County have ever been tracked in this area. There may be some connectivity between populations, just not annual migratory movements. The WMA is not large enough to hold the population, so maintaining this population will depend on nearby landowners (both private and the Forest Service) maintaining habitat. UDWR works closely with the USFS regarding this sage grouse population.

Waterfowl

Some waterfowl are found on the WMA seasonally. Common species observed are Mallard (*Anas platyrhynchos*), Common goldeneye (*Bucephala clangula*), and Green-winged teal (*Anas crecca*).

Carnivores

Cougar (*Felis concolor*), American black bear (*Ursus americanus*), Bobcat (*Lynx rufus*), American badger (*Taxidea taxus*), Least weasel (*Mustela nivalis*), Striped skunk (*Mephitis mephitis*), Coyote (*Canis latrans*), and Red fox (*Vulpes vulpes*) are found on HRWMA.

Other carnivores which are more infrequent visitors to the WMA include:

- Gray wolf (*Canis lupus*) are possible as Hardware Ranch is in the Utah Delisted Zone. The 2010 Utah legislature passed SB 36, which directs the DWR to prevent the establishment of a viable pack of wolves within the “delisted portion” of northern Utah. This bill suspends the portion of the Utah Wolf Management Plan that would allow 2 packs to become established even if they are not causing conflicts with wildlife or livestock.
- Canada Lynx (*Lynx canadensis*) are possible, but the Ranch doesn’t have quite the correct habitat types available, so any individuals may just be using the area during migration movements to other habitats.

Beaver

North American beaver (*Castor canadensis*) are commonly found on HRWMA and have expanded their range under access management changes, especially on upper Rock Creek.

The use of beavers in stream habitat restoration/maintenance activities is the preferred method to achieve stream stability and increase meadow habitats. Beavers have been the main tool that has



maintained hydrologic stability on the tributary streams (Curtis Creek and Rock Creek) on the ranch. The main-stem Blacksmith Fork is less influenced by beaver activity, although some attempts have been made by industrious individuals. High spring runoff generally destroys these dams on the main-stem.

A Utah Beaver Management Plan (UDWR Publication 17-20) has been developed and provides overall direction for management of American beaver in Utah and where appropriate, expands the current distribution to

include historic ranges. A Beaver Management Plan has been developed specifically for HRWMA, and dealing with beaver activity mitigation is a large portion of the ranch plan. Use of pond levelers and beaver-deceivers is integral to keeping WMA infrastructure from damage. Hardware Ranch is also used as a “source population” for movement of beavers for stream/riparian habitat restoration in other areas.

Non-Game Birds

Numerous non-game bird species can be found on the WMA, with several being included on the Utah Wildlife Action Plan, Species of Greatest Conservation Concern list. These species include: Bald eagle (*Haliaeetus leucocephalus*); Golden Eagle (*Aquila chrysaetos*); Lewis' woodpecker (*Melanerpes lewis*); Northern pygmy owl (*Glaucidium gnoma*); and Flammulated owl (*Psilosops flammeolus*). Additional bird species of interest include: American Three-toed Woodpecker (*Picoides dorsalis*); and Northern goshawk (*Accipiter gentilis*) (a Conservation Agreement species). Additional species include a wide suite of migratory songbirds which breed and nest on the WMA, such as warblers, sparrows, chickadees, swallows, nuthatches, etc... A detailed non-game bird survey or inventory has not been completed on the WMA.

Non-Game Mammals

Numerous non-game mammal species can be found on the WMA, with several being included on the Utah Wildlife Action Plan, Species of Greatest Conservation Concern list. These species include: Little brown myotis (*Myotis lucifugus*); and Townsend's big-eared bat (*Corynorhinus townsendii*); and Fringed myotis (*Myotis thysanodes*). A detailed non-game mammal survey or inventory has not been completed on the WMA.

Amphibians

The aquatic resources on HRWMA, such as springs, wetlands, riparian habitats and streams provide potential habitat for amphibians. The growth of beaver dam complexes in recent years has created additional potential amphibian breeding areas. Several amphibian species on the WMA are included on the Utah Wildlife Action Plan, Species of Greatest Conservation Concern list. These species include: Northern leopard frog (*Rana pipiens brachycephala*); Great Plains Toad (*Bufo cognatus*); and Boreal Toad (*Bufo boreas boreas*). Additional amphibians on the WMA include the Great Basin Spadefoot Toad (*Spea intermontanus*), Woodhouse Toad (*Anaxyrus woodhousii*), and Boreal chorus frog (*Pseudacris maculate*). Tiger salamanders (*Ambystoma tigrinum nebulosum*) live in some of the water catchments on the WMA.

A detailed amphibian survey or inventory has not been completed on the WMA.

Reptiles

Lizards found on the WMA include: Mojave black collared lizard (*Crotaphytus collaris bicinctores*); Northern Sagebrush lizard (*Sceloporus graciosus*); Short-Horned lizard (*Phrynosoma douglassii*); Northern desert horned lizard (*Phrynosoma platyrhinus platyrhinus*); and the Great Basin skink (*Eumeces skiltonianus utahensis*). Snakes found on the WMA include: Rubber boa (*Charina bottae*); Wandering garter snake (*Thamnophis elegans vagrans*); Valley garter snake (*Thamnophis sirtalis fitchi*); Regal ringneck snake (*Diadophis punctatus regalis*); Western yellow-bellied racer (*Coluber constrictor Mormon*); Desert striped whipsnake (*Masticophis taeniatus*); Great Basin gopher snake (*Pituophis melanoleucus deserticola*); Desert

night snake (*Hypsiglena torquata deserticola*); and Great Basin rattlesnake (*Crotalus viridis lutosus*). The mountain northwest of the headquarters complex is called “Rattlesnake” because of its historical and present population of Great Basin rattlesnakes.

A detailed reptile survey or inventory has not been completed on the WMA.

Fish

The Hardware Ranch WMA contains approximately 15 miles of streams and rivers, including segments of Curtis Creek, Rock Creek and the Blacksmith Fork River. These streams support a variety of native and non-native fish species including: Rainbow trout (*Oncorhynchus mykiss*), Brown trout (*Salmo trutta*), Brook trout (*Salvelinus fontinalis*), Mountain whitefish (*Prosopium williamsoni*), Mottled sculpin (*Cottus bairdii*), and Mountain sucker (*Catostmus ardens*).

The WMA also supports populations of Bonneville cutthroat trout (BCT) (*Oncorhynchus clarki utah*) which is identified on the Utah Wildlife Action Plan, Species of Greatest Conservation Concern list.

Mollusks

A detailed survey or inventory for mollusks has not been completed on the WMA. However, the Eureka mountain snail (*Oreohelix eurekaensis*), a Utah Wildlife Action Plan, Species of Greatest Conservation Need, has been found near the Visitor Center.

Public Education and Recreation Opportunities

Recreational opportunities are considered according to the UDWR Administrative Lands Rule (R657-28). In general, activities that do not promote or protect the goals and objectives of the unit will be prohibited, specifically those that disturb or harass wildlife and their habitats. Non-traditional uses of HRWMA can be authorized by a Special Use Permit (SUP) under this rule.

Public education is the hallmark of HRWMA's mission. An extensive outreach education program has been developed and maintained at HRWMA. Please see the Conservation Outreach Plan Summary for detailed information on the WMA's conservation outreach efforts.



Public Access Management

The majority of the 14,332 acres comprising HRWMA is open to the public for hunting and fishing. The only area closed to all public access is a game rest area surrounding the meadow where the feeding of wintering elk takes place. This area comprises approximately 820 acres.

The area is signed and the legal description of this CLOSED Area is defined as:

"The area of Hardware Ranch Wildlife Management Area beginning at Highway 101 and the gate to the gravel pit; north on the dirt road from the pit to the pipeline scar; northeast on the pipeline scar to the summit of the bluffs north of the upper meadow; east along the top of the bluffs to the Laketown Road (USFS 054); south on this road to the upper meadow fence; west along the upper meadow fence to Highway 101; south on Highway 101 to the gravel pit. Gate is closed to all unauthorized public access."

Another wildlife rest area exists between Left Hand Fork and Rock Creek from early fall until early summer. This area is open to hunting but is limited by restricting access to horses and foot traffic only from Sept 15 - June 15 annually.

Public access is permitted year round on the majority of HRWMA. This year round use mostly impacts wintering wildlife through extensive snowmobile activity off of established groomed trails, and from early-spring shed hunters who traverse the hillsides.

As a WMA managed for the benefit of wildlife, and given that Hardware Ranch WMA is mostly used by wildlife during the winter, UDWR recommends that Hardware Ranch WMA be annually closed from Jan. 1 to the second Saturday in April to protect wintering wildlife, except for Division sponsored activities, and that winter recreation be relegated to established/groomed trails only. This winter closure period is also used on other UDWR northern region WMA's to protect wintering wildlife populations from human disturbances which causes additional stress to animals already stressed during late winter conditions.

Summer Access Issues

Camping

Camping is major component of WMA access and the most problematic summer issue. In addition to the developed campground/campsites, there are numerous undeveloped, primitive sites along SR-101, and all along the Laketown road heading north through the WMA. Camping begins in earnest on the WMA on or around Easter weekend, and is consistent through the end of the hunts in November. The busiest season of the year is between Memorial Day, in May, and Labor Day, in September. October is also extremely busy during the elk hunt. The proposed WMA annual closure from Jan. 1 to the second Saturday in April will enable the establishment of a better defined camping season.



In 2015, a campsite registration box program was implemented along the highway as a way to educate the camping public about proper usage of the WMA, and encourage personal responsibility and policing. The response has been favorable. One item that this has helped to address is the summer "squatting" that takes place on the WMA, when campers leave their equipment for weeks at a time to reserve a spot for their intermittent use. This action prevents other campers from

finding areas to use, and forces them to carve out new camping areas or leave the WMA. This program will continue in order to include all camping on the WMA, including dispersed camping areas.

During the life of this plan, data will be collected to understand the breakdown of user groups recreating on HRWMA, such as: the number of recreationists, seasonality of WMA usage, the amount of wildlife viewing, hunting, angling, and other activities, and associated impacts as a result of these varied uses. This data collection will enable DWR managers to understand how much WMA recreation is being contributed by sportsmen engaged in hunting and angling, and how much use is contributed by non-hunting and angling recreation. A cost-benefit analysis will be conducted to determine the value of assessing WMA access fees for non-hunting & angling recreation.



Different strategies will also be explored and implemented during the life of the plan to address recreation, particularly camping and OHV riding, that has increased in the past 5 years. These strategies may include but are not be limited

to: Day Use fees, an established camping season, specified camping areas, the elimination of camping, the length of permitted camping periods, creation of more day use areas, having a campground host, exploring Federal Aid implications to fee assessment, exploring a partnership with Utah State Parks and Recreation regarding design and enforcement of recreation areas, SUPs for commercial recreation activities originating on the WMA, and a re-evaluation of the DWR Lands Use Rule to address increased usage of Division lands, set aside for wildlife improvement, for non-hunting and angling related recreation.

Off-Highway Vehicles

OHV access on the WMA is limited to established roads and trails. These roads are all Cache County or U.S. Forest Service roads, and are maintained by the appropriate entity. These roads are also part of the Shoshone ATV Trail System. Only one road, FS 150 (known as Pole Hollow Rd.), is maintained by the WMA for the brief span of 3/4 of a mile that it is on the WMA. This is a seasonal road and is closed annually on September 15 and opened on June 15. This closure creates a resting area for wildlife. When open, it is a popular OHV trail into the area between HRWMA and Left-hand Fork Canyon.

OHV use has increased exponentially in the past 5 years. As soon as the Utah Division of State Parks and Recreation opens the roads to wheeled vehicles, OHVs and 4x4 vehicles can be found driving the open roads on the WMA. There has been an increase in the number of vehicles on

any given weekend, and in large "convoys" of chartered riding groups utilizing the trail system. In areas of high OHV use new occurrences of invasive and noxious weeds has increased, or weeds have now become firmly established. WMA management will work to ensure that any of these commercially operated ventures which originate on HRWMA have the appropriate Special Use Permit (SUP).

Winter Access Issues

Snowmobiling

Much of the Shoshone Trail System is groomed by Utah State Parks and Recreation and the U.S. Forest Service to permit winter trail riding through the Uinta-Wasatch-Cache National Forest. Riders can start their ride at any of the 4 parking lots on the trail system: the parking lot near the summit of Monte Cristo, 17 miles south of Hardware; at Hardware Ranch WMA; Logan Canyon near Beaver Creek Lodge; and Logan Canyon near the Summit. Riders can start and end in any of these places with many riders leaving from Logan or Monte Cristo, and riding to Hardware to take in a sleigh ride and learn about the elk.

The popularity of snowmobiling is increasing with more large chartered groups using the trail system every year. WMA management will work to ensure that any of these commercially operated ventures which originate on HRWMA have the appropriate Special Use Permit (SUP). The increase of snowmobile activity has been accompanied by an increase in riders taking their sleds off the groomed trails and riding in the backcountry. As a WMA important to wintering wildlife, it is important to limit winter snowmobile activity to the groomed trails to avoid additional stress to wildlife during the winter months.

In the future, additional recreational opportunities may be considered according to the UDWR Administrative Lands Rule (R657-28). In general, activities that do not promote or protect the goals and objectives of the unit will be prohibited, specifically those that disturb or harass wildlife and their habitats.

HR Outreach Programs

The largest amount of public access use during the winter on HRWMA is associated with the ongoing outreach programs that were mentioned earlier, and are the hallmark of Hardware Ranch's mission: the winter sleigh rides and winter educational programming. Many Saturdays, barring inclement weather, there will be in excess of 1,000 visitors. HRWMA's winter programming runs for 13 weeks, from the second weekend in December to the last Monday in February.

Elk Feeding Station

A winter elk feeding program at HRWMA has operated since the winter of 1947. The feeding program begins the second weekend in December and continues through the last Monday in February. The purpose of the feeding program is to draw elk away from agricultural areas in Cache Valley. The acquisition of the property was ideal because it is located away from the populated valley and agricultural fields. It also has 120 acres of a grass hay meadow that is harvested annually, producing 200 - 300 tons of hay. Presently the elk are fed at a rate of 10lbs/head/day. The amount of hay used annually depends on the number of elk on the WMA and the severity of the winter. Approximately 50 - 60 tons of the hay raised on HRWMA also

feeds the 5 teams of Division-owned draft horses that are maintained by the WMA, and are an important part of the winter sleigh ride program. One of the challenges in raising hay to sustain the feeding program is to maintain and repair head gates and eroded canals to assure adequate water flows. Installing updated head gates will require less maintenance and be more productive.

Conservation Partners Involved in Acquisition

HRWMA was created with a series of grants from the U.S. Fish and Wildlife Service between 1940 and 1964. The initial source of funding was a United State Fish and Wildlife Service (USFWS) Federal Assistance Grant (W-12-L) under the Federal Aid in Wildlife Restoration Act of 1937 (Pittman-Robertson or PR funds). The primary property title encumbrance at HRWMA is the set of conditions prescribed by the original grant from the U.S. Fish and Wildlife Service under the Wildlife Restoration Act. Should the purpose of management of HRWMA be substantially changed from the purposes stated in the original grant, the Division may be responsible to reimburse the federal government for the purchase according to Federal Aid guidelines.

The objectives of the initial purchases were as follows:

1. In conjunction with Millville Face WMA land purchase, provide a wintering area and supplemental feed program for Rocky Mountain elk at Hardware Ranch and construct a fence on Millville WMA to alleviate depredation problems on farm lands in Cache Valley. By providing a wintering area and feed for elk at Hardware Ranch, there would be enough natural browse above the fence to support remaining wintering deer and elk.
2. Provide year-round habitat for deer, elk, and sage-grouse.
3. Provide area for recreational hunting and fishing activities.

Subsequent objectives of land purchases:

1. Provide additional habitat for all wildlife.
2. Provide additional recreational hunting and fishing opportunities.
3. Provide an area for a Watchable Wildlife program.

Additional acquisition partners include the United States Forest Service, the Utah Division of Forestry, Fire and State Lands, and the Utah School and Institutional Trust Lands Administration. These entities partnered with UDWR through land exchanges and trades to secure contiguous and additional lands for wildlife habitat and public access.

Financial support for the continuing management area operation, maintenance and development programs comes from two sources: 1) Utah sportsmen and women who purchase hunting and fishing licenses, which is combined with, 2) U.S. Federal Aid to Wildlife Restoration monies (Pittman-Robertson or PR funds). These PR funds come from a national tax on sporting goods and ammunition, with the money placed into an account which is then divided proportionally among each of the 50 states of the United States, and is based on the land mass of each state and the number of licenses sold.

Partnerships

Hardware Ranch Advisory Committee

This Committee is comprised of a group of stakeholders that represents various public interests who are interested in the management of the HRWMA. A list of members can be found in the Executive Summary.

Utah State University - College of Natural Resources (USU-CNR)

Utah State University College of Natural Resources is currently conducting a precipitation study that looks at how range plants will respond to various scenarios relative to climate change. Under their license, USU CNR was permitted to build precipitation shelters to collect naturally occurring rainfall and snow melt, while allowing sunlight to reach the plants underneath the shelters. The study plots are irrigated according to study protocols. Ideally this study will provide some insight into expected changes in range plant communities as changes in precipitation may occur in regard to climate change.

In recent years USU CNR has also tested the efficacy of a new product called Conducrete as a way to discourage wildlife from a specified area. This study was successful and application is currently being explored in utilizing this product in mitigating automobile/wildlife collisions at wildlife crossings. Annually, USU students from the CNR read range transects, analyze the data, and provide it to WMA managers to benefit management decisions.

Hardware Ranch WMA Research

Research on elk at HRWMA started in the 1950's focusing on elk twinning, immobilization drugs, calving dates, winter weight loss, pregnancy rates, migration routes, disease monitoring, and elk herd age structure. As part of monitoring the "spike-only" hunting area, pregnant cows were sometimes kept during the spring and summer to record data on calving dates, calf weights and sex ratios. Current elk management activities focus on trapping elk to obtain biological information on disease testing, tagging, and calf sex ratios.

In the future, efforts will be undertaken to identify the totality of this research and subsequent scientific publications that have been produced.

II. Property Inventory

Hardware Ranch WMA encompasses 14,332 acres of land, along with major facilities including 13 buildings, 150,000 square feet of paved parking lots and sidewalk, 33 miles of fence, 2 miles of waterlines, 8 miles of electric transmission lines, and many miles of roads and trails. Some of the buildings, fences and electric lines are now 50 years old. For detailed information about each of the site's physical facilities please see the Facilities Plan Summary.

Existing Capital Improvements - Infrastructure

A wide array of infrastructure is required to operate HRWMA and manage public use of the property. These include roads, fences, irrigation & culinary structures, etc. The capital infrastructure improvements at HRWMA are summarized in Table 5.

Table 5. HRWMA Capital Infrastructure Components.

Item	As of 2017	Item	As of 2017
Fence	33 miles	Horse Ties	3
Cattle guards	6	Day Use Areas - signed	14
Gate Openings	43	Campgrounds - boxes	6
Water Control Structures	15	Campgrounds - dispersed	6
Roads	18 miles	Corrals	2
Sidewalk	1,200 ft	Water Tanks	2
Entrance Signs	2	Irrigation Line - residences	2 miles
Irrigation Ditch	5 miles	Animal Handling Facilities	Elk pens & corrals
Culinary water line	1.1 miles		
Hay Pastures	120 acres		
Pump Station	4		
Electrical Transmission Line	8 miles		
Telecommunications	Microwave relay for voice & data connection		

1. Roads

- State Route 101 runs through the center of HRWMA to the headquarters area. The highway turns to gravel as it continues through HRWMA and becomes USFS Forest Road (FR) 054, connecting to Laketown, UT. As a state route, SR-101, is maintained by the Utah Department of Transportation (UDOT). A spur road originates in the area of Rock Creek and runs east toward Baxter’s Sawmill. The Ant Flat road runs south from the ranch headquarters to SR-39, and approximately 2 miles of it are within HRWMA. FR 054, Baxter’s Sawmill, and Ant Flat roads provide vehicle access through parts of HRWMA and are maintained by the Cache County Road Department.
- An access road has been cut off the Ant Flat road up the hill to the east, to allow snowmobiles and OHVs to continue on the Shoshone Trail without illegally riding on SR101.
- Pole Hollow Road, FR 150, is a U.S. Forest Service road that is also open to OHV traffic between June 15 and September 15. FR 150 was moved during the summer of 2017 out of the drainage bottom and up on the flat, along the fence line. A three way agreement between UDWR, USFS, and the South Cache Cattle Association has been developed where each responsible party closes their respective access roads to motorized traffic from September 15 - June 15, annually. This creates a wildlife rest area between Left Hand Fork and Rock Creek from fall until spring.
- An administrative access road to the elk trap and irrigation canal behind the barnyard is approximately 0.5 miles long (See Appendix A).

2. Fences

There are over 33 miles of fence on HRWMA. About 20 miles are 4-wire lay down fence to assist with grazing pasture management, while the 13 miles of interior fence is a combination of 3 rail pole, barb wire, or 8-foot tall enclosure fence. Due to livestock grazing, big game traffic, and aging fences, repair and maintenance is a major ongoing responsibility. Many of the fences have been built and maintained with grazing assessment fees. Each season, tasks associated with grazing include repairing existing fence, removing abandoned fencing, and building new fences to protect sensitive resources and control livestock. The approximately 8 miles of pole fence averages between 20 and 30 years old and requires considerable maintenance. Much of the pole fence is degraded due to rotting posts and rails.

There are 2 major big game enclosure fences on the WMA.

- One is on lower Curtis Creek from the sleigh shack to the bunkhouse (0.5 mile). The enclosure was installed to prevent livestock and elk from impacting the extensive riparian work done by UDWR on and surrounding Curtis Creek. The beaver have since negated that work. This fence along Curtis Creek is in excellent condition.
- The second enclosure is the old elk pen pasture fence (1.5 miles). This enclosure is where elk used to be kept yearlong for various research efforts. The elk pen pasture fence is in extremely poor condition, and requires frequent repair. Its major use is now summer pasture for the WMA draft horses.

In spring of 2009, five linear miles of 4-strand barbed wire fence was built along one side of Rock Creek, by the Baxter Sawmill Road east of the Back Country Horsemen's corrals, to protect the creek from livestock grazing and vehicle damage. Several gates for WMA access and stock gates for horse access and cattle to be removed. This fencing was completed to prevent the excessive riparian damage done by camping along the creek.

The WMA boundaries are not entirely fenced or posted in some locations. Efforts will be undertaken during the life of this plan to clearly mark the WMA boundary.

3. Hay Meadows

There are 3 meadow complexes at HRWMA, together comprising approximately 120 acres. These acres are harvested as the primary feed for the winter elk feeding program. The upper meadow is 65 acres, the middle meadow is 22 acres, and the lower meadow is 33 acres. A smaller parcel of 6.5 acres exists between the middle meadow and Ant Flat Road. Grass hay production (smooth meadow brome) requires fertilizing in the spring, regular irrigation, as well as paying to have the hay cut. Due to the increasing cost to have contractors perform the hay harvest, HRWMA purchased a set of hay rakes in 2014 and round baler in 2016. This has reduced the cost of production by \$6,000 - \$7,000/year. In late fall of 2015 & 2016, Cache Meadow Brome began to be seeded into the hay meadows to boost production. In the past, the meadow hay had been adequate to sustain the wintering elk. Hay production is a primary objective and efforts to improve production are ongoing.

4. Water Developments

Water developments and improvements on HRWMA include springs and ponds, and a recent irrigation improvement project that repaired or replaced approximately 1 mile of canal along the 2 large meadow complexes.

Annual maintenance of 5 miles of irrigation ditches and diversions, along with 15 water control structures, is an ongoing task to ensure maximum hay production. The irrigation system includes 2 diversion points on Curtis Creek, which are tied to 3 original 'priority' water rights on the Blacksmith Fork River dating from May 1870. The existing irrigation system is being evaluated to determine its effectiveness. Following this evaluation, ditches will be adjusted, moved, or re-cut as needed, to improve irrigation on the meadow. Herbicide is used on the ditches regularly to keep them clear and functional.

There are 15 ponds on HRWMA, including 5 installed to divert spring runoff away from the barnyard. Ten of the ponds also enhance both wildlife watering opportunities and water availability for the WMA livestock grazing program. Since 2006, five springs have been developed to improve dispersed water locations on Hardware Plateau, Curtis Ridge, and Pole Hollow. Development of 2 more springs are underway to improve watering points for wildlife and livestock.

A new culinary well was begun in 2012 and put into service December 2016. It is located on the mountain east of the Visitor Center, and provides potable water service to the public buildings and residences. The old spring still services the barnyard and horse corrals.

5. Entrances

There are 3 road entrances to the WMA. Highway SR-101 is the main entrance, which is accessible year round. SR-101 leaves U.S. Hwy 89/91 in Wellsville, at the mouth of Sardine Canyon, and passes through the city of Hyrum on its way up Blacksmith Fork Canyon. It is maintained by the Utah Department of Transportation (UDOT).

The other 2 access points are across the Ant Flat Road from the south which starts at Highway SR-39 near Monte Cristo in Weber County, and the Laketown Road (F.S. Road 054) from the north, which begins in the Round Valley area south of Laketown, in Rich County.

6. Vehicle Bridges

There are no vehicle bridges on the WMA. There are several culverts on the WMA where various water bodies cross under the road. Many of these are under state and county roads who take care of their maintenance.

7. Vehicle Gates

There 12 gates on the WMA. Most are strategically placed to enable WMA administrative management, or to limit or prohibit unauthorized access to areas that are managed with specific objectives in mind. Six of these gates occur around the hay production meadows and allow access for field work, but can be locked to prevent damage by off-roading enthusiasts. The other gates occur in areas that are seasonally or permanently closed to public motorized access.

8. Horse Tie Racks/Corrals

In the early 2000's, the local chapter of the Backcountry Horsemen of Utah (BCHU) installed near the Pole Hollow, a series of horse tie outs and feeders to accommodate members of the public that were looking for an area to camp and ride their horses. In 2014 the feed bunks were repaired and improved, again by the local chapter of BCHU.

9. Day Use Areas

HRWMA has 15 designated Day Use Only areas which provide the public opportunities to access the Blacksmith Fork River, along SR-101, for fishing. These areas also facilitate parking for hunting in the canyon during the fall hunting seasons. Use is limited between the hours of 5 am and 10 pm. For location information see the Camping & Day Use Access Map located in Appendix A.

10. Camping Areas

HRWMA contains both primitive and dispersed camping sites. Some of these sites are designated as tent-only, while others are large enough to accommodate Recreational Vehicles and trailers. Five of these sites are along SR-101, as you access the WMA from the east; one of them is a tent-only site. These 5 sites contain sign-in boxes with each box containing a folder with site information, WMA Use Rules, and a sign in sheet. The last campsite before the WMA hay fields is Camp Wapiti. This camp was used by the Boy Scouts of America through the 1990's and used to contain military-style Quonset huts. It was a popular winter camping site, with a sledding hill located across the river. Past the WMA facilities and on the dirt road heading northeast, there are multiple primitive camping sites. Two of the sites in Curtis Creek are limited to tent camping only, while the rest are accessible to trailers. Routine patrols are made by WMA staff to ensure camps are clean and attended. A map of the existing camping areas is located in Appendix A.

During routine patrols and personal contacts, cards are handed out or left with unattended vehicles to make users aware of the following WMA Use guidelines:

- 14 day Camping Limit - 1 day off the WMA between camping periods
- Vehicles or equipment should not be left unattended overnight
- Please pack out your garbage
- Use self-contained toilets or provided public latrines
- Fires permitted in existing fire rings
- ATV/OHV use restricted to trail access
- *NO ATV/OHV use in camping areas or state highways*
- *NO discharge of firearms in camping areas or at WMA facilities & structures (i.e. signs or fences)*
- **Follow all State laws pertaining to fires, fishing, and hunting**

Any problems that cannot be solved amicably are referred to law enforcement.

Table 6. HRWMA Camping Areas. No amenities are available.

Name	Location	RV/Tent	Site Info
Camp A	SR-101	RV and/or Tent	3 sites for camping
Camp B	SR-101	RV and/or Tent	1 site
Camp C	SR-101	RV and/or Tent	1 site
Camp D	SR-101	Tent only	2 sites
Camp E	SR-101	RV and/or Tent	1 site
Camp Wapiti	SR-101; Rock Creek crossing	RV and/or Tent	15 sites; 2 group areas
Curtis Creek	Curtis Creek Canyon	Tent only	3 sites for tents
Cattle Guard Camp	Laketown Rd	RV and/or Tent	3-4; undesignated
Rendezvous Camp	Laketown Rd; Rock Creek Riparian area	RV and/or Tent	2-3; undesignated
Horse Tie-Out	Rock Creek/Pole Hollow Junction	RV and/or Tent	3-4; undesignated, livestock allowed
Baxter Sawmill	Baxter Sawmill Rd	RV and/or Tent	5-6; undesignated
Squaw Flats	Squaw Flats	RV and/or Tent	7-8; undesignated, most popular during hunting seasons.

11. Trails/Paths – Pedestrian

There are no designated hiking/horse trails on the WMA. Curtis Creek is accessible to both user groups and is mostly an old road left over from when habitat work was done in the area of Curtis Ridge and the Hardware Plateau.

12. Trails/Paths – ATV

All the main dirt roads on the WMA are accessible by OHV's. These include Ant Flat, Laketown, and the seasonal Pole Hollow road. Pole Hollow closes on September 15 and opens again on June 15. Both the Laketown and Pole Hollow roads are part of the U.S. Forest Service's Shoshone ATV Trail system. These roads interconnect with other roads in various parts of the forest.

13. Signs (Entrance, educational, interpretative, boundary, etc...)

There is an entrance sign capable of being adapted to the outreach season located at the mouth of Blacksmith Fork canyon. This sign lists the activities available with the changing seasons. Another entrance sign is located 4 miles west of the Visitor Center and another at the entrance to the HRWMA Campus. An 830 acre bowl surrounding the elk meadow is signed designating it as CLOSED to public access. Other signs exist marking Day Use Areas and designated Camping Sites.

Located in the sleigh line of HRWMA is an interpretive sign informing the reader about elk and what they are seeing from their position. There is a kiosk 50 yards to the east at the edge of the parking lot and another kiosk in the gravel lot with ATV trail information. Boundary signs are in the process of being placed.

14. Grazing Allotment Infrastructure

There are 3 cattle grazing allotments. Cattle grazing is awarded by contract and managed by an annual permit. Cattle are turned out on or around Memorial Day, and are off the WMA on or about July 4. The 3 cattle lots are as follows: Rattlesnake - (1666 acres) includes the area around the elk feeding meadow west to Rock Creek and east to the Laketown road; Rock Creek - (1147 acres) includes the area west of Rock Creek to the South Cache Livestock Association property line and north to Pole Hollow; Squaw Flats - (2576 acres) includes the area north of Pole Hollow and Baxter Sawmill road to the forest boundary. Most livestock watering points are in Rock Creek. There are 2 stock ponds in the Rattlesnake allotment, and an improved spring in the Rock Creek allotment containing a trough and stock pond.

The 2 sheep allotments are as follows: Hardware Plateau - (972 acres) includes the area between the southern WMA border and Curtis Creek and east of the VC; and Curtis Ridge - (1596 acres) includes the WMA property north and east of Curtis Creek. There are 2 stock ponds on the Hardware Plateau and 2 improved springs and ponds on top of Curtis Ridge. Curtis Creek runs between the two allotments.

Cultural Resources

Hardware Ranch has had little of the acreage inventoried for cultural resources. Along the southwestern outside edges of the ranch, a Sample Inventory of Hardware Ranch Land Exchange (04-MQ-1117, private property) documented no cultural resources. On the southeastern boundaries, the DWR completed a Cultural Resources Inventory of the Hardware Ranch Shrub Planting Project (12-UQ-0485) resulting in no cultural resources. The same year the DWR completed a Cultural Resources Inventory of the Hardware Ranch Well and Pipeline Project (12-UQ-1020) resulting in no cultural resources. In the far southeastern area of Hardware Ranch the DWR completed an inventory of the Curtis Ridge Prescribed Burn (10-UQ-0496) also resulting in no cultural resources.

A sampling of sites documented within two miles of Hardware Ranch on U.S. Forest Service property resulted in a finding of three sites, two consist of prehistoric aboriginal chipped stone scatters with ground stone tools, and the third consists of a sawmill with associated materials. This is consistent with cultural resource expectations of the area which would include sites associated with ranching and agricultural activities. The reason for finding few cultural resource sites is likely a reflection of the heavy duff and vegetation coverage, especially in high altitude conifer forests, not the lack of sites.

Species of Greatest Conservation Need/Utah State Sensitive Species

On the WMA, there are several wildlife species considered either a Species of Greatest Conservation Need (SGCN; from the 2015 -2025 WAP) or a Utah State Sensitive Species (Utah Sensitive Species list, 2011). Some species are found on both lists. The SGCN species were developed through a multi-stakeholder effort to identify those species most in need of conservation. The species on the Utah Sensitive Species list were selected internally through UDWR knowledge, along with review of Natural Heritage Program data. The Sensitive Species list was developed pursuant to UDWR Administrative Rule R657-48. These species have been

either observed on the WMA, or would be expected to occur given habitat types present on the WMA. See Table 7.

Table 7.

<i>Species of Greatest Conservation Need</i>	<i>Utah State Sensitive Species</i>
Bonneville cutthroat trout	Bonneville cutthroat trout
Bald eagle	Western toad
Columbian sharp-tailed grouse	Greater sage-grouse
Flammulated owl	Northern goshawk
Golden eagle	Lewis's woodpecker
Greater sage-grouse	Bald eagle
Lewis' woodpecker	Sharp-tailed grouse
Northern pygmy owl	Three-toed woodpecker
Townsend's big-eared bat	Canada lynx
Little brown myotis	Townsend's Big-eared Bat
Fringed myotis	Fringed myotis
Gray wolf	Great Plains Toad
Canada lynx	Boreal Toad (Western Toad)
Eureka mountain snail	Eureka mountain snail
Boreal (Western) Toad	
Northern leopard frog	
Great Plains Toad	

Important Fish and Wildlife Habitats

Nine different vegetation, or land cover, types (USGS 2004) occur on HRWMA. These types include mixed conifer, aspen, mountain shrub, mountain riparian, grassland, lowland riparian, pinyon-juniper, shrub-steppe, and wet meadow.

General Habitat Types - Upland

The south and west portion of HRWMA in Blacksmith Fork Canyon is defined by steep, rocky slopes. Ridgeline elevations range from 6,700 to 7,400 feet. The north facing slope of this canyon has classic moist soils dominated with conifer cover. This area has good big game summer range with vegetation that consists of Douglas fir (*Pseudotsuga menziesii*), Woolly mule's ear (*Wyethia mollis*), Arrow leaf balsamroot (*Balsamorhiza sagittata*), Western yarrow (*Achillea millefolium L.*), Silver lupine (*Lupinus albifrons Benth*) and Aster (*Aster sp.*).

The rocky, drier south facing slope of Blacksmith Fork Canyon has coarse soils and associated brush communities that provide critical winter range for mule deer. Ridgeline elevations range from 6,700 to 7,400 feet. Native vegetation ranges from Great Basin big sagebrush, (*Artemisia tridentata*) to Utah juniper (*Juniperus osteosperma*). Grasses include Sandberg bluegrass (*Poa secunda*) and Bluebunch wheatgrass (*Pseudoroegneria spicata*). The Blacksmith Fork River and riparian area define the canyon bottom with an average elevation of 5,550 feet.

At the east end of Blacksmith Fork Canyon, the slope decreases or flattens out to form the meadow areas of HRWMA. The centrally-located hay meadow portion of the WMA is at 5,700 feet in elevation and is irrigated to produce hay to feed elk in the winter. The hay is predominantly Timothy-grass (*Phleum pratense*) and Smooth brome (*Bromus inermis Leyss.*), with the Meadow

brome (*Bromopsis biebersteinii*) 'Cache' variant being added, beginning in 2015. Curtis Creek and Rock Creek form confluences with the Blacksmith Fork River in the meadow areas. Riparian vegetation is abundant in these river corridors with the dominant vegetation including: Cottonwood (*Populus sp.*); Red-osier dogwood (*Cornus sericea*); Hawthorne (*Crataegus sp.*); Willow (*Salix sp.*); and Golden currant (*Ribes aureum*). Wet meadows also exist with vegetative cover including; sedges (*Carex sp.*), willows and spikerush (*Eleocharis R. Br.*).

At the southeast end of the meadow area, slopes rise to the south to form the Hardware Plateau. This dryer transitional/winter range is at approximately 6,300 feet, and is defined by predominately brush and grass plant communities interspersed with junipers. Native shrubs include Antelope bitterbrush (*Purshia tridentata*) and Great Basin big sagebrush, also including some Utah Juniper. Grasses include Sandberg bluegrass and Bluebunch wheatgrass.

The northeast portion of HRWMA is defined by the Curtis Plateau. This section of the WMA has a high point of 7,050 feet in elevation, and is covered with a mosaic of quaking aspen (*Populus tremuloides*), mountain brush, and forb and grass communities. The eastern portion of this area contains a smaller area of summer range with aspen and forbs including mule's ear, arrow leaf balsamroot, western yarrow, silver lupine, and aster.

The remainder of this area of HRWMA is transitional range. North facing slopes have vegetative cover of Utah juniper, curl-leaf mountain mahogany (*Cercocarpus ledifolius* Nutt.), Pinyon pine (*Pinus edulis*), Great Basin big sagebrush, Antelope bitterbrush, Bigtooth maple (*Acer grandidentatum*), Serviceberry (*Amelanchier utahensis* Koehne), Mountain snowberry (*Symphoricarpos oreophilus* A. Gray), creeping Oregon grape (*Berberis repens*), and Rabbitbrush (*Chrysothamnus* Nutt). Curtis Creek flows at the base of the plateau and supports cottonwood (*Populus deltoides*) and willow riparian communities.

The Rock Creek drainage is in the northernmost portion of the WMA. The elevation of Rock Creek is 5,640 feet at its confluence with the Blacksmith Fork River. At the northeast end where it enters the WMA, Rock Creek is at 6,600 feet in elevation. This portion of the WMA is primarily winter and transitional range. There is a smaller piece of summer range, mostly privately owned, referred to locally as Peavine. Vegetation in the Rock Creek drainage of the WMA includes: Quaking aspen, Utah juniper, Curl-leaf mountain mahogany, Pinyon pine, willow (various spp.), Great Basin big sagebrush, Antelope bitterbrush, Bigtooth maple, Serviceberry, Mountain snowberry, creeping Oregon grape, Rabbitbrush, Woolly mule's ear, Arrow leaf balsamroot, Western yarrow, Silver lupine, and Aster.

Water availability and distribution, precipitation cycles and steep rocky terrain are the main natural limiting factors for HRWMA for terrestrial habitats.

General Habitat Types-Aquatic

Hardware Ranch WMA contains approximately 15 miles of streams and rivers, including segments of Curtis Creek, Rock Creek and the Blacksmith Fork River. The Division has developed a system to classify rivers, streams, and other water bodies according to criteria based on aesthetics, natural character, productivity, biological function, and public accessibility. Class 1 is the highest level; Class 6 is the lowest quality classification.

Curtis Creek

Curtis Creek originates approximately 6 miles southeast of the headquarters compound on U.S. Forest Service lands, and approximately 3 miles of the stream runs through HRWMA. While Curtis Creek has not undergone a formal Rosgen classification for the channel and riparian condition, general observations suggest Curtis Creek has different morphologies depending on upon the location, with the classification likely being a C-4 or C-5.

It is considered a Class 3 fishery. UDWR sampling efforts in 2012 identified the creek as containing rainbow trout, brown trout (approx. 160/mile), Bonneville cutthroat trout (BCT)(approx. 220/mile), and mottled sculpin. The majority of the fishery is generally confined to the lower meadow portion of the stream channel. Potential sampling will occur within the next year or two.

Extensive habitat impacts and manipulations have occurred on Curtis Creek over time including: habitat degradation due to livestock and wildlife grazing; the construction of weirs to reduce erosion in the 1990's; and channel reconstruction in 2001. The objective of the 2001 restoration project was to improve water quality by reducing erosion and organic matter entering the stream. Extensive beaver activity has subsequently altered the work completed during the 2001 project. In 2007, riparian enclosures preventing livestock and wildlife grazing on the riparian area were installed throughout much of the meadows area of the ranch. Prior to the installation of these exclosures, overgrazing along riparian areas was increasing erosion, non-point source pollution, stream temperatures, and bank instability. Rock and Curtis Creeks now have areas of good habitat within the exclosures. Unprotected reaches continue to be subjected to some grazing and vehicular disturbance. Beaver populations have been allowed to expand and have begun to alter habitat along upper Rock Creek and lower Curtis Creek. The areas continue to have some erosion problems most likely due to the lack of integrity of the meadow grazing exclosure fencing which needs continual maintenance repair work.

Rock Creek

Rock Creek originates on U.S. Forest Service land, approximately 8 miles northeast of the headquarters compound. Approximately 5 miles of the stream flows through the WMA. While Rock Creek has not undergone a formal Rosgen classification for the channel and riparian condition, general observations suggest Rock Creek has 2 distinct morphologies with the canyon portion likely a B-4, and the meadow portion a C-type (likely a C-4 or C-5).

It is considered a Class 3 fishery. UDWR sampling efforts in 2012 identified the creek as supporting brown trout (approx.260/mile), Bonneville cutthroat trout (approx. 450/mile), along with smaller populations of brook trout and mottled sculpin. Additional sampling of the fish population is proposed to occur within the next year or two.

Extensive riparian and stream restoration occurred in 2014 through riparian plantings and stream bank stabilization efforts to reduce erosion. Beaver activity increased in this area with multiple dams placed within the restoration site. Beaver activity continues on Rock Creek.

Blacksmith Fork River

The Blacksmith Fork River originates approximately 4 miles southeast of the headquarters compound on U.S. Forest Service land, and 6 miles of the river flow through HRWMA. While the Blacksmith Fork River has not undergone a formal Rosgen classification for the channel and riparian condition, general observations suggest that the canyon portion of the Blacksmith Fork is likely a B-4 channel, with the substrate varying from silt to bedrock.

The river is classified as a Class 1 fishery, and is also considered a Blue Ribbon Fishery from First Dam (downstream of HRWMA) upstream to Rock Creek. The Blacksmith Fork River on HRWMA supports a very dense population of brown trout (approx. 2500-4000fish/mile). Mountain whitefish occur at much lower densities (~320 fish/mile), with the upper extent of the mountain whitefish population occurring near Camp Wapiti. Rainbow trout only occur in Second Dam Reservoir, downstream of HRWMA. Bonneville cutthroat trout are rarely observed in the mainstream Blacksmith Fork River. Nongame fish species occurring in the Blacksmith Fork River include mottled sculpin and mountain sucker.

Prior to 2011, the riparian areas adjacent to the Blacksmith Fork River had been heavily disturbed by vehicle and recreational access such that these habitats were severely degraded or non-existent, with heavy bank erosion occurring in the area. UDWR took corrective actions to eliminate the inappropriate activities and restore these habitats. Some of these actions included: fencing to exclude vehicle access to the water's edge, and realignment of camping areas away from the stream banks.

Bonneville cutthroat trout are identified as a Species of Greatest Conservation Need in the Utah Wildlife Action Plan. BCT are also covered under a range-wide and statewide Conservation Agreement and Strategy, in which over-fishing, habitat degradation and fragmentation have been identified as key risks to the long-term conservation of the subspecies. Management actions consistent with the Conservation Agreement and Strategy will benefit the fragmented BCT populations that occur on HRWMA property. BCT population surveys take place every five to seven years to monitor population stability. Sampling efforts are scheduled for fall of 2018 on the Blacksmith Fork River.

Utah Wildlife Action Plan

The Utah Wildlife Action Plan (WAP; see additional information in Section III, Management Goals and Objectives), identifies several key terrestrial and aquatic habitats that occur on HRWMA. The WAP includes a statewide threat assessment which identifies threats to each key habitat, and then ranks the impact of that threat (the scope and severity or S&S) according to the number of Species of Greatest Conservation Need (SGCN's) that could be affected from that threat. These key habitats on the HRWMA and their priority threats include:

- **Aspen-Conifer habitat:** Aspen-Conifer key habitats occupy less approximately 5.5% of the surface land area in Utah. While the aspen-conifer physical habitat remains largely intact in Utah, coverage of aspen itself within that setting has declined greatly for two main reasons: departure from natural fire regime, resulting in widespread forest succession to conifer dominance; and heavy ungulate browsing on young aspen stems following disturbance. The amount of Aspen-Conifer habitat on the WMA is limited to a few isolated areas. The priority threats include:

- Inappropriate Fire Frequency and Intensity (Very High S&S);
 - Problematic plant species – Native upland (Very High S&S);
 - Improper grazing (historic) (Very High S&S);
 - Problematic Insects – Native (High S&S);
 - Seeding of Non-native Plants (High S&S);
 - Improper Grazing (current) (High S&S).
- Mountain Shrub habitat: Mountain shrub key habitats occupy less approximately 2.6% of the surface land area in Utah. On HRWMA, these mountain shrub habitats can be found mingling with mountain sagebrush communities. This habitat includes some species which re-sprout after fires, while other species do not re-sprout. Mountain shrub communities are susceptible to cheatgrass invasion on drier sites. The priority threats include:
 - Invasive Plant Species – Non-native (Medium S&S);
 - Seeding Non-native Plants (Medium S&S).
- Mountain Meadow habitat: Mountain Meadow key habitats occupy less than 1% of the surface land area in Utah. On HRWMA, these meadows can be found mingling with mountain shrub and mountain sagebrush communities, and within aspen-conifer forests. In general, historic patterns of heavy grazing by domestic livestock altered the herbaceous species composition of mountain meadows towards a greater abundance of either forbs or grasses, depending upon what species of livestock was present. In addition, the overall herbaceous composition was shifted to greater amounts of unpalatable or undesirable species. The priority threats include:
 - Soil Erosion/Loss (High S&S)
- Mountain Sagebrush Habitats. Mountain Sagebrush key habitats occupy less than 5% of the surface land area in Utah. On HRWMA, these sagebrush habitats can be found mingling with mountain shrub and mixed-conifer and aspen forests. Habitat alterations have occurred primarily through encroachment by montane conifers, invasion by non-native annual grasses, and understory vegetation depletion. The priority threats include:
 - Problematic plant species – Native upland (Very High S&S);
 - Improper grazing (historic) (Very High S&S)
 - Droughts (High S&S)
 - Improper Grazing (current) (High S&S)
- Scrub/Shrub habitats: Scrub/Shrub aquatic key habitats on HRWMA are primarily associated with the three perennial streams, along with springs and seeps found throughout the WMA. The vegetation in this habitat includes woody vegetation less than 6 meters in height. Specific management for scrub-shrub aquatic habitats has included fencing riparian areas from human and livestock disturbances to encourage woody vegetative growth, and encouraging beavers to expand their habitats. The priority threats include:
 - Agricultural/Municipal/Industrial Water Usage (Very High S&S)
 - Water Allocation Policies (Very High S&S)
 - Presence of Diversions (Very High S&S)
 - Improper Grazing (Current) (High S&S)

- Channel Downcutting (indirect, unintentional) (High S&S)
- Channelization/Bank Alteration (direct, intentional) (High S&S)
- Droughts (High S&S)
- **Forested habitats:** Forested aquatic key habitats on HRWMA are primarily associated with the three perennial streams. The vegetation in this habitat includes woody vegetation greater than 6 meters in height. Specific management for forested aquatic habitats has included fencing riparian areas from human and livestock disturbances to encourage woody vegetative growth, and encouraging beavers to expand their habitats. The priority threats include:
 - Agricultural/Municipal/Industrial Water Usage (Very High S&S)
 - Water Allocation Policies (Very High S&S)
 - Presence of Diversions (Very High S&S)
 - Channel Downcutting (indirect, unintentional) (High S&S)
 - Channelization/Bank Alteration (direct, intentional) (High S&S)
 - Droughts (High S&S)
 - Water Allocation Policies (High S&S).
- **Riverine habitats:** Riverine aquatic key habitats include perennial streams channels associated with the three primary streams on the WMA: the Blacksmith Fork River; Rock Creek; and Curtis Creek. The priority threats include:
 - Presence of Diversions (Very High S&S)
 - Agricultural/Municipal/Industrial Water Usage (Very High S&S)
 - Water Allocation Policies (Very High S&S)
 - Drought Conditions (High S&S)
 - Channelization/Bank Alteration (direct, intentional) (High S&S)
 - Improper Grazing (current) (High S&S)
 - Channel Downcutting (indirect, unintentional) (High S&S)
 - Presence of Dams (High S&S)

Most of these threats are unable to be addressed directly at HRWMA, although some efforts have been undertaken to improve and enhance some of these habitats. Management at HRWMA addresses threats to these key terrestrial and aquatic habitats to the extent possible by managing for a diverse range of habitats in various successional stages which maintain and benefit the wide variety of wildlife species found on the WMA.

Most of the Species of Greatest Conservation Need and Utah State Sensitive Species do not have specific management plans to guide their management. In the future, as species management plans are written and adopted by the Utah Wildlife Board, they may be implemented at HRWMA.

General Condition of Habitats

Habitat conditions on the HRWMA currently vary with vegetation type and with the variety of disturbance conditions which have occurred due to human, wildlife, and livestock uses.

Big Game Range Trend Studies

Range trend condition information has been collected for the last 30 years by the Division. There are 5 range trend sites located in the Hardware Ranch WMA area. A summary of this

information is provided below. For more information, please refer to the following documents: 1971, Utah Big Game Range Inventory; 1982-1992, Utah Big Game Range Trend Studies; and 1995-2016, Utah Big Game Range Trend Study Reports(<https://wildlife.utah.gov/range-trend.html>). The Division will undertake another analysis of these range trend sites on the HRWMA in 2021.

1. Second Dam Blacksmith Fork Range Trend Study Site (02-12) (located on USFS lands)

This plant community does not have a well-defined ecological site. However, due to the presence of Utah juniper (*Juniperus osteosperma*), since 1984 the community most resembles Community Phase 4.1 found of the Mountain Big Sagebrush/Utah Juniper Invasion State (State 4). Antelope bitterbrush (*Purshia tridentata*) and mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) both have a reduced presence in the community with a depleted herbaceous understory indicated by elevated presence of annual brome species (*Bromus* sp.). Bluebunch wheatgrass (*Pseudoroegneria spicata*) has remained on the site in significant quantities since establishment. There has been no indication that there has been a transition in the community type. It is predicted that the site will remain in the current community type unless there is a major disturbance. A juniper thinning and shrub restoration project was undertaken in 2013 where approximately 1200 acres of juniper was removed along the north side of Hwy. 101. (WRI Database # 2697)

2. Hardware Plateau Range Trend Study Site (02-13) (located on HRWMA)

When the study was established in 1984, the plant community was in a perennial grass/forb community type with a variety of browse species providing limited cover. Over the course of the study, cheatgrass (*Bromus tectorum*) has fluctuated in abundance, but has remained a major component of the plant community over the sample years. Additionally, Bluebunch wheatgrass (*Pseudoroegneria spicata*) has been the dominant species on the site, but experienced a significant decrease in cover and abundance in 2016 as there was an increase in cheatgrass. Perennial forbs have remained a prominent community component and have had little fluctuation in cover and abundance. Since study establishment, shrubs have slowly increased in both cover and abundance over the duration of the study. Despite the fluctuations in these communities, it is predicted the site will remain in this state unless a major disturbance occurs.

3. Curtis Ridge--Range Trend Study Site (02R-15) (Located on HRWMA)

This range transect was not read in 2016. It will be read in 2018. Previous range trend data from 2011 include:

This study was established as a control to an intensive grazing project conducted on Hardware Ranch to improve browse composition. The study site is located on Curtis Ridge two miles east of the Hardware Ranch visitor's center. The vegetation is comprised of a mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and low sagebrush (*Artemisia arbuscula*) community, with several transects also sampling a dry meadow. The study was established prior to the intensive grazing treatment that was scheduled to take place later in the summer of 2006, and an electric fence was built around the study area before the grazing treatment. Deer, elk, and cattle sign were sampled in low abundance in 2006 and 2011.

4. Pole Hollow Spring Range Trend Study Site (02-39) (Located on HRWMA)

Since study establishment in 1996, this site has been dominated by mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and Mountain snowberry (*Symphoricarpos oreophilus*) which places it in Community Phase 6.1 of the Mountain Big Sagebrush/Snowberry state. The herbaceous component is diverse and abundant, and although the community phase description states that perennial forbs are absent in this phase, perennial forbs and grasses provide the most cover in the understory. Introduced brome grasses have been observed in every sample year, but in low amounts. No transitions from the current community phase or state have been described by this model. Although cover and density are relatively low, the presence of Utah juniper (*Juniperus osteosperma*) indicates that this study site has the potential for encroachment. In 2016, juniper lop and scatter treatment in the area targeted and removed trees from approximately 2143 acres (WRI Database #3701).

5. Hardware Gravel Pit Range Trend Study Site (02-42)(Located on HRWMA)

Since establishment in 2011, this study site has remained in Community Phase 2.1 of the Mountain Big Sagebrush- Steppe/Introduced Non-Natives state which is described as exhibiting co-dominance between mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and a diverse and abundant understory. Although sagebrush dominates the overstory, the herbaceous component is mainly composed of the invasive annual grass species cheatgrass (*Bromus tectorum*); other grasses and forbs that are present are not particularly diverse. Through fire suppression and continued heavy grazing, the model shows that this study site has the potential to transition to the Mountain Big Sagebrush Superdominance/Low Shrub state (State 3) which is characterized by a substantial decrease in native grasses and an increase in sagebrush and other shrubs. Although cover and density are low, Rocky Mountain juniper (*Juniperus scopulorum*) has been observed in both sample years, indicating that this site has the potential for future encroachment. The study was placed in a location that had experienced a high amount of big game winter kill in years prior to the study site establishment.

Utah's Watershed Restoration Initiative (WRI) – Watershed Study Sites

The Watershed Restoration Initiative (WRI) is a partnership based program in Utah to improve high priority watersheds throughout the state. WRI is sponsored by the Utah Partners for Conservation and Development and is in its 12th year. The Watershed Program focuses on three ecosystem values: 1) watershed health and biological diversity, 2) water quality and yield, and 3) opportunities for sustainable uses of natural resources. WRI is a bottom-up initiative where project planning, review, and ranking occur at a local level.

The WRI focuses on enhancing Utah's water quality and yield, as well as its biological diversity. To achieve these results, WRI partners fund and perform physical and mechanical habitat manipulation, negotiate administrative changes in land management, and strengthen communication and team-building among the public and stakeholders.

As part of the habitat manipulation projects, range trend data is collected on selected treatment areas. Pre-treatment and post-treatment data is collected. The WRI range trend studies are used to evaluate the success and failure of land treatment projects. The health and vigor of big game populations are closely correlated to the quality and quantity of forage in key areas. Range trend

data are used by Utah Division of Wildlife Resources (DWR) biologists, public land managers and private land owners for habitat improvement planning purposes.

The objective of the WRI Watershed Study areas is to monitor, evaluate, and report results of habitat treatment projects conducted under the WRI throughout the state, and inform DWR biologists, public land managers and private landowners of significant changes in plant community composition in these areas.

1. Rattlesnake Knoll East – Watershed Study Site 02R-11 (Located on HRWMA)

This study was established on Hardware Ranch to monitor a prescribed grazing project. The purpose of the project was to control cheatgrass and improve shrubs and beneficial grasses. The area was intensely grazed from 10 April to 10 September. After this study site was established, an enclosure was built around it to prevent cattle from grazing it. The comparison site, Rattlesnake Knoll West (2R-12), was established about 750 feet northwest of this site. Both mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and bitterbrush (*Purshia tridentata*) received heavy utilization in 2005. The site was sampled in 2005 and 2013.

Since established in 2005, this site has remained in a somewhat stable bitterbrush state. Perennial grasses have decreased in cover, whereas introduced grasses such as cheatgrass (*Bromus tectorum*) and bulbous bluegrass (*Poa bulbosa*) have increased in cover. These grasses put the resilience of this site at risk. Conversely, annual forbs have decreased in cover, while perennial forbs have increased in cover, mainly the weedy species mule's ears (*Wyethia amplexicaulis*)

2. Curtis Ridge – Watershed Study Site 02R-16(Located on HRWMA)

This study was established as part of an intensive grazing project conducted on Hardware Ranch to improve browse composition. It was positioned approximately 600ft south of Curtis Ridge Control (2R-15) which will not be grazed and will act as a control. The Curtis Ridge study was established prior to the intensive grazing treatment that took place in the summer of 2005. The vegetation type is low sagebrush (*Artemisia arbuscula*), however, transect#1 is in a meadow type habitat.

Since establishment in 2006, this site has remained stable in a low sagebrush/introduced non-natives state, and is associated with other mountain browse species like mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*). The introduction of exotic species, extinction of native flora, and climate change has caused State 1 (Reference State) to transition to State 2 (Low Sagebrush/Introduced Non-Native State), and the reversal of these changes back to State 1 is not practical. However if heavy continuous season-long livestock grazing were to occur, then State 2 could transition to State 3 (Depauperate Low Sagebrush State). The site was sampled in 2006 and 2013.

3. Squaw Flat North – Watershed Study Site 02R-20 (Located on HRWMA)

This site was established as part of an intensive grazing project conducted on Hardware Ranch to improve browse composition. The purpose of this grazing project was to intensively graze the mule's ear and grasses, and stimulate the growth of browse species. As of 2013, the

enclosure fence had been knocked down. There is a road below the site with additional four wheeler trails in the area.

Since establishment in 2006, this site has remained in a low sagebrush/introduced non-natives state (Community Phase 2.1), and is associated with other mountain browse species like Saskatoon serviceberry (*Amelanchier alnifolia*). The introduction of exotic species, decreased abundance and composition of native flora, and/or climate change, has caused State 1 (Reference State) to transition to State 2 (Low Sagebrush/Introduced Non-Natives State), and the reversal of these changes back to State 1 is not practical. However, if heavy continuous season-long livestock grazing were to occur, then State 2 could transition into the State 3 (Depauperate Low Sagebrush State). The site was sampled in 2006 and 2013.

4. Hardware Plateau – Watershed Study Site 02R-21 (Located on HRWMA)

This study was established 200 feet from the Hardware Plateau Control study (2R-17). Both Hardware Plateau studies were established as part of an intensive grazing project conducted on Hardware Ranch to improve browse composition. This study was noted as heavily grazed, while the control study was excluded from cattle grazing by an electric fence. Deer and elk presence was high in 2007. The closest water source is a spring approximately one-quarter mile from the study.

Since establishment in 2007, this site has remained stable in a perennial grass state (Community Phase 4.1). Shrub species have been sparse on the site. The herbaceous understory has consisted mainly of perennial grass species with Bluebunch wheatgrass (*Agropyron spicatum*) being the dominant grass species sampled on the site. Several weedy plant species such as bulbous bluegrass (*Poa bulbosa*), cheatgrass (*Bromus tectorum*), and mules-ears (*Wyethia amplexicaulis*) have been sampled on the study site over the sample years. Without a shrub-removing disturbance such as fire, it is likely that sagebrush would increase on the site and become dominant. In addition, heavy grazing may also increase sagebrush abundance, but herbaceous plants would decrease on the site (Restoration Pathway R4a). The site was sampled in 2007 and 2013.

5. Blacksmith Fork Grazed – Watershed Study Site 02R-23 (Located on HRWMA)

This study was established as part of an intensive grazing project conducted on Hardware Ranch to improve browse composition. This study was grazed intensively by cattle in 2005, while the Blacksmith Fork Control study site (2R-22), located approximately 110 feet to the south, was excluded from cattle grazing using an electric fence. Both study sites were included in a treatment in April 2007 in which 500 acres were aerially seeded with browse and forbs to improve winter range for deer, and spring/summer habitat for deer and sage-grouse. The closest water source is a river, approximately one-quarter mile from the study.

Since establishment in 2007, annual introduced grasses and forbs have dominated this site. Shrub cover has been minimal and Rocky Mountain juniper (*Juniperus scopulorum*) is encroaching on the site. Additionally, the steep slope and rocky terrain may limit plant establishment. The site was sampled in 2007 and 2013.

Utah's Watershed Restoration Initiative (WRI)—Watershed Projects

Along with the watershed research study sites that were identified above, a number of other projects have been completed on HRWMA under the Utah WRI program. For project specific information, please see: <https://wri.utah.gov/wri/>

Projects

- #300; Hardware Ranch Water Project
- #589; Hardware Ranch Fencing Project
- #973; Hardware Ranch Plateau
- #1270; Hardware Ranch WMA Fence Replacement Project
- #1667; Rock Creek Bank Stabilization
- #1741; Curtis Ridge Prescribed Burn
- #2044; Canal Improvement Project
- #2070; HRWMA Meadow Fertilizer Project
- #2079; Blacksmith Fork Habitat Protection Project
- #2199; Rock Creek Bank Stabilization Downstream Reach
- #2284; Hardware Plateau Shrub Project
- #3512; Bruce Hall Hardware Ranch
- #3620; Hardware Ranch WMA Meadow Fertilizer Project FY17
- #3887; Hardware Ranch WMA Weed Abatement FY18
- #4096; Hardware Ranch Juniper Lop and Scatter II

Habitat Limitations

Several resource problems exist on HRWMA. These problems include:

Invasive and Noxious Weeds: Invasive and noxious weeds are a concern to maintaining healthy winter wildlife habitats. HRWMA's greatest concerns are: Canada thistle (*Cirsium arvense*); Spotted knapweed (*Centaurea stoebe*); Black henbane (*Hyoscyamusniger*); Medusahead rye grass (*Taeniatherum caput-medusae*); and Cheatgrass (*Bromus tectorum*). There have also been small populations of North Africa grass (*Ventenata koeler*) and Camelthorn (*Alhagi maurorum*) identified on the WMA in the last 2 years. These populations are suspected to have come to the WMA via the marked increase in OHV use.

The Cache County Weed Department and UDWR have developed a partnership, with a signed MOU, which has greatly assisted UDWR with weed maintenance and control. Since HRWMA is at the top of the Blacksmith Fork watershed, the County is interested in helping to contain and control invasive populations at their source. Milestone and Weedmaster herbicides are used to contain and control thistle and broad leaf infestations. Biological control agents, such as seed-head and root weevils, are also used to control knapweed populations, and gall flies and stem bore weevils are released in areas of Canada thistle infestation. Garlon herbicide is currently being used to control the arrival of Camelthorn.

The WMA also mandates the use of weed free hay for all domestic animals (i.e., pack and riding horses) that are fed on the WMA (i.e., not grazing animals) to reduce the potential spread of noxious weeds. The existing signs located throughout the WMA need to be updated to better notify users of this mandate.

Water Quality: Utah State University's Water Lab has been conducting stream flow surveys on Curtis Creek for over 5 years and has documented increases in phosphates when meadow irrigation begins. Due to the need to fertilize the meadows to maintain quality and quantity of production, care is taken to time fertilizer application with rainstorms. This helps the pelletized fertilizer to be absorbed into the ground before irrigation water is turned on and reduces the risk of runoff into Curtis Creek.

Elk Feeding Program: Disease Concerns/Considerations

Since 1946, HRWMA has provided a winter feed ground to wintering rocky mountain elk, with the herd ranging in size from 500 -700 animals. The elk winter primarily in an 830 acre “bowl”, and are fed by UDWR personnel within the largest meadow in this “bowl”, from early December through mid-February each year. The meadow itself comprises approximately 65 acres.

Due to the concentration of large animal populations in a somewhat confined area, there is an increase in concern regarding disease transmission between wild cervids, and the potential for disease transmission to domestic livestock. The disease of particular concern is centered on the infectious bacterial disease brucellosis (*Brucella abortus*), which can cause reproductive problems (abortions, stillbirth, infertility) in most species of animals.

Beginning the winter of 2016-17, UDWR placed 26 GPS (global positioning system) collars on trapped, breeding age cow elk. This effort is part of an interagency cooperative effort with Idaho and Wyoming to develop a more accurate distribution of potential disease carrying animals coming from known feed grounds in close proximity to northern Utah, south-eastern Idaho, and south-western Wyoming. Overall 120 collars will be placed throughout the study area to monitor movements, establish preferred habitat locations for calving, and test for diseases.

During years 1 and 2 of the study, no discernible change in feeding will take place at Hardware Ranch WMA. This will enable wildlife biologists to establish a baseline of elk movements, habitat use, and elk-deer interactions on the winter range that the WMA provides. During years 3 through 5, a more dispersed feeding pattern will be implemented on the WMA to spread the wintering herd over a larger area and reduce the potential for disease transmission by reducing the individual animal proximity found on typical feed rows. Changes in elk and mule deer behavior will be observed. Following the completion of the study, biological recommendations concerning the future of the feeding program can be evaluated and addressed in the next Habitat Management Plan, in approximately 5 years.

Human Use-Related Problems

HRWMA has seen an increase in public use in the last 5-10 years. As surrounding areas have become more regulated by the managing agencies more activity has been directed toward Blacksmith Fork Canyon. In personal contacts with WMA visitors HRWMA staff has particularly noticed an increase of visitors from the Ogden area, looking for places to camp and recreate without the need to pay to do so.

Presently, public access is permitted year round on the majority of HRWMA. This year round use impacts wildlife, particularly during the winter when wildlife is more sensitive to human pressure. As a WMA managed for the benefit of wildlife, and given that Hardware Ranch WMA

is mostly used by wildlife during the winter, UDWR recommends that Hardware Ranch WMA be annually closed from Jan. 1 to the second Saturday in April to protect wintering wildlife, except for Division sponsored activities. This winter closure period is also used on other UDWR northern region WMA's to protect wintering wildlife populations from human disturbances which causes additional stress to animals already stressed during late winter conditions.

Camping is major component of WMA access and is the most problematic. There are undeveloped, primitive sites along SR-101, and dispersed camping all along the Laketown road heading north through the WMA. Camping begins in earnest on the WMA on or around Easter weekend and is consistent through the end of the hunts in November. The busiest season of the year is between Memorial Day and Labor Day. October is also extremely busy during the elk hunt.

Public Safety

Safety is the foremost operational concern at HRWMA. The thousands of annual visitors, coupled with aging facilities, and the necessity to operate with the public during extreme cold temperatures and snow accumulation, all impose significant safety considerations. The horse-drawn sleighs and a very active OHV trail present additional public safety challenges.

Recent years have shown an increase in hunting pressure in the meadows along SR-101. Hunters often "camp-out" all day in the pull outs along the highway to intercept elk crossing from the Ogden unit to the Cache unit, and then fire indiscriminately at crossing elk over the length of the meadow toward each other and Camp Wapiti. Action was taken in the summer of 2017 to restrict the pull outs and shoulders of the road between Camp Wapiti and the WMA facilities to "no parking" areas. Parking is now directed to extra space near Camp Wapiti to disperse hunting, and encourage more ethical and safe means of harvesting an animal.

Other Issues

Other more general issues found on the WMA include litter, using wooden fencing materials for firewood, unattended fires left burning, defacing signs, and new roads created by OHVs. Trespassing livestock is minimal and owners have been quick to round up their animals when notified.

Adjacent Land Uses and Potential Impacts

All lands surrounding the WMA are either USFS or privately owned lands. The USFS lands are used for multiple resources including, but not limited to, livestock grazing, OHV use, and logging. The private land around the WMA are primarily used for livestock grazing. All these activities are currently compatible with management activities and wildlife values of HRWMA. Management activities and wildlife use of the WMA do not conflict with management of either the USFS or private lands.

III. Management Goals and Objectives

Hardware Ranch WMA management is based primarily upon goals, objectives, and strategies of various plans, which are summarized below.

UDWR Strategic Plan (2007-2011)

The management of the Hardware Ranch WMA has relevance to the following goals and objectives as outlined in the Division's Strategic Plan:

Resource Goal: Expand wildlife populations and conserve sensitive species by protecting and improving wildlife habitat.

Objective R1- Protect existing wildlife habitat and improve 500,000 acres of critical habitats and watersheds throughout the state by 2011.

Objective R2- Increase fish and game populations to meet management plan objectives and expand quality fishing and hunting opportunities.

Objective R3- Conserve sensitive species to prevent them from being listed as threatened or endangered.

Constituency Goal: Achieve broad-based support for Division programs and budgets by demonstrating the value of wildlife to all citizens of Utah.

Objective C1- Increase public awareness of wildlife as a quality of life issue in order to expand our support base and achieve stable funding.

Objective C2- Improve coordination with organizations, public officials, private landowners, industry, and government agencies to obtain support for Division programs.

These goals and objectives will be accomplished by properly managing the water, vegetation, wildlife and human components of the WMA according to those strategies mentioned in the property and habitat management sections below. These section's detail property maintenance and development, wildlife species and habitat management, and access and fire management on the WMA.

Utah Wildlife Action Plan

The 2015-2025 edition of the Utah Wildlife Action Plan (WAP) was created with the express purpose and goal of managing native wildlife species and their habitats to help prevent listings under the Endangered Species Act. To help achieve this goal, the WAP provides a statewide approach for the partnership-based, coordinated planning and implementation of wildlife and habitat conservation practices. The WAP addresses the following elements:

- Conservation targets include; species of greatest conservation need, and those species' key habitats; information about the status and distribution of these species; information about the location and condition of these key habitats.
- Threats and limiting factors facing these species and habitats, and research required to help managers more effectively address these problems. Threats are measured and prioritized on a statewide basis, based on how many targets they impact, and how severely the targets are impacted.
- Conservation actions required to abate the highest-priority threats, and improve the supply of these limiting factors.
- Monitoring the status of these targets, and in particular the effectiveness of these actions.

- Approaches for including the public, partners, and stakeholders, in consideration of the mission and authority of partners.
- Provisions for coordinating the WAP with other natural resource management plans.

The HRWMA HMP process is used to address wildlife species and habitats found on the WMA, by explicitly including their needs in routine, novel, and emergency management activities. This aligns well with the intent of the WAP, which identifies specific management actions that can be taken to reduce priority threats to these species and habitats.

The HRWMA has several terrestrial and aquatic habitats of statewide and local concern which include: aspen-conifer, mountain shrubs; mountain sagebrush; mountain meadow; aquatic forested; aquatic scrub/shrub habitats; and riverine habitats. One of the intents of the WAP in identifying these habitats is that local-area management efforts can better focus actions on those specific habitats where actions can have the most benefit for species of greatest conservation need. Most of the threats to the key habitats are unable to be addressed directly at HRWMA. However, management at HRWMA attempts to address threats to these habitats to the extent possible, by managing for a diverse range of habitats in various successional stages which maintain and benefit the wide variety of wildlife species found on the WMA. For more information, please see the discussion in Section II: Property Inventory, Wildlife Action Plan.

Wildlife Species Management Plans

The management of this unit will address the limiting factors and habitat needs identified in each of these plans and will seek to implement habitat management strategies that are needed to reach or maintain population objectives. Overall management goals include a population of healthy animals capable of providing a broad range of recreational opportunities, including hunting and non-consumptive opportunities, such as wildlife viewing. UDWR also strives to consider impacts of the deer, elk and pronghorn herds on other land uses and public interests, including private property rights, agricultural crops and local economies. This goal also includes activities to maintain populations at levels that are within the long-term capability of the available habitat to support.

Deer Management Plans

The Hardware Ranch WMA is located within 2 Deer Herd Units. The plans for both of these units were completed in 2017, and general information from both units is discussed below.

Unit 2: Cache

The target winter herd size is 25,000 wintering deer with a post hunting season herd composition of 15-17 bucks per 100 does. The number of deer on the unit is currently under objective.

The largest threat to mule deer habitat on the Wellsville and Cache areas is the direct loss of crucial winter range acres due to development and urbanization. Most of the increase in home building is occurring on the foothills in what was historic deer winter range. Additional threats and losses to deer winter range is the reduction in habitat quality due to the loss of critical browse species (sagebrush, bitterbrush etc...). This loss has been attributed to a number of factors, including fire, agriculture, drought etc. However, the abundance of weedy annual grass species, such as cheatgrass, and the increase of the exotic, weedy, perennial grass bulbous

bluegrass are the more likely causes of sagebrush decline. These weedy species can form dense mats of cover that compete with seedling and young sagebrush plants, which limits establishment of new sagebrush plants into the population. As the sagebrush population matures, decadence increases and density decreases as old plants begin to die. The range trend summaries on the WMA do show increases of weedy species. In addition, these weedy grass species increase the chances of a catastrophic fire event.

Mule deer winter range habitat has also seen a decrease in sagebrush density. The moderate drought in recent years has likely caused increased stress on plants. Sagebrush age structure across the area is generally old and of one age class. The lack of regeneration of the stands through establishment of young sagebrush is a concern. Perennial grass and forb species have increased on many of the studies as browse species decline, and may compete with browse establishment.

Crucial mule deer habitat in all areas on the Cache Unit is also being lost and degraded through Juniper expansion. In certain areas where Juniper stands occur, the spread and invasion of young juniper have had a dramatic negative impact on existing browse and other understory species.

To address the direct loss of habitat, efforts will be made towards the protection and conservation of remaining mule deer habitat. Efforts must be made to work with counties, cities, private landowners and federal agencies to maintain and protect critical and existing winter range from future losses. Through existing partnerships and developing new conservation partners, efforts are being made to identify and prioritize critical habitat areas. Conservation easements will be an important part of this effort.

To address habitat quality and degradation, habitat improvement projects have been and will continue to be planned throughout the unit. Habitat projects have been and are being done on UDWR WMA's, private lands, and US Forest Service lands throughout the unit. The habitat projects are designed to address the specific issues within each project area that will improve mule deer habitat. A listing of suggested projects specific to Hardware Ranch can be found in the Habitat Improvement Section of this HMP.

Unit 3: Ogden

The target winter herd size is 11,000 wintering deer with a post hunting season herd composition of 18-20 bucks per 100 does. The number of deer on the unit is currently under objective.

Lower elevation winter range is the major limiting factor for mule deer populations on the Ogden unit. The winter range areas are also those areas that are most at risk to vegetative changes and development.

The largest threat to mule deer habitat on the Ogden unit is the direct loss of crucial winter range acres due to development and urbanization. Most of the increase in home building is occurring on the foothills in what was historic deer winter range. Additional threats and losses to deer winter range include the reduction in habitat quality due to the loss of critical browse species (sagebrush, bitterbrush etc...). This loss has been attributed to a number of factors, including fire, agriculture, drought etc. However, the abundance of weedy annual grass species, such as cheatgrass, and the increase of the exotic and weedy perennial grass, bulbous bluegrass, are the

more likely causes of sagebrush decline. These weedy species can form dense mats of cover that compete with seedling and young sagebrush plants, which limits establishment of new sagebrush plants into the population. As the sagebrush population matures, decadence increases and density decreases as old plants begin to die. The range trend summaries do show increases of weedy species. In addition, these weedy grass species increase the chances of a catastrophic fire event.

Mule deer winter range habitat has also seen a decrease in sagebrush density. The moderate drought in recent years has likely caused increased stress on plants. Sagebrush age structure across the area is generally old and of one age class. The lack of regeneration of the stands through establishment of young sagebrush is a concern. Perennial grass and forb species have increased on many of the studies as browse species decline, and may compete with browse establishment.

To address the direct loss of habitat, efforts will be made towards the protection and conservation of remaining mule deer habitat. Efforts must be made to work with counties, cities, private landowners and federal agencies to maintain and protect critical and existing winter range from future losses. Through existing partnerships and developing new conservation partners, efforts are being made to identify and prioritize critical habitat areas. Conservation easements will be an important part of this effort.

To address habitat quality and degradation, habitat improvement projects have been and will continue to be planned throughout the unit. Habitat projects have been and are being done on UDWR WMA's, private lands, and US Forest Service lands throughout the unit. The habitat projects are designed to address the specific issues within each project area that will improve mule deer habitat. A listing of suggested projects specific to Hardware Ranch can be found in the Habitat Improvement Section of this HMP.

Elk Management Plans

The Hardware Ranch WMA is located within 2 Elk Herd Units. The plans for both of these units were completed in 2016, and general information from both units is discussed below.

Unit 2: Cache

This unit plan recommends a target winter herd size of 2,300 elk. As feeding at Hardware Ranch is evaluated over the next 4-5 years, UDWR will maintain active surveillance of elk movements and determine if adjusting the objective is necessary due to elk leaving the unit to winter. Average age of bulls harvested from the South Cache is 6.75 years old. The unit is currently at objective.

At this point in time, neither habitat quality or quantity appears to be a limiting factor on this unit. Brucellosis has not been detected in elk on the Cache unit, but neighboring States have positive populations. In addition, other issues like external parasites and more common diseases occur within the population.

Due to the above risks, it is not advisable to continue to congregate elk on feed rows within the unit. Feeding has been phased out on the Millville Face WMA, and it is advisable to evaluate feeding elk at Hardware Ranch WMA. This will be accomplished using a phased process

beginning with a collaring project to monitor elk movement before and after changes to feeding are made. Elk were collared during the winter of 2016-17. Habitat projects will be proposed in the area in anticipation for more dispersed elk throughout the area. Feeding will continue for a period at least two years to gain GPS data on elk before feeding efforts are curtailed. Management will be adaptable during this process, as we evaluate how elk are reacting to the changes. UDWR will monitor where elk are going, impacts to habitat, and to other ungulates, especially mule deer. After this process, the feeding program will be evaluated and will be subsequently addressed in the next update of this HMP, in approximately 5 years. Disease monitoring will continue to detect any disease outbreaks within the herd.

Habitat improvement projects have been and will continue to be planned throughout the unit. Specific projects will be developed to enhance habitat in the greater Hardware Ranch WMA area to disperse animals and minimize disease concerns. In addition, efforts will continue to pursue conservation easements in Cache Valley to protect critical elk habitats. A listing of suggested projects specific to Hardware Ranch can be found in the Habitat Improvement Section of this HMP.

Unit 3: Ogden

This unit plan recommends a target winter herd size of 2,000 elk. The unit is currently about 300 animals over objective.

Summer range is abundant and in good condition. Winter ranges are disappearing due to increased development in Ogden Valley, located in Weber County, south of Hardware Ranch. Elk depredation of agricultural crops continues to be a problem during winter months. Most winter and summer range in this unit is privately owned. In the southern portion of Cache Valley, winter range is less likely to be developed in the short term, but depredation to crops, haystacks, and equipment is a major concern.

Habitat improvement projects have been and will continue to be planned throughout the unit. Specific projects will be developed to enhance habitat in the greater Hardware Ranch WMA area to disperse animals and minimize disease concerns. In addition, efforts will continue to pursue conservation easements in Cache Valley to protect critical elk habitats. A listing of suggested projects specific to Hardware Ranch can be found in the Habitat Improvement Section of this HMP.

Utah Conservation Plan for Greater-Sage Grouse (2013)(Plan)

In February 2013, Utah completed a multi-agency/entity effort to develop a new conservation plan for greater sage-grouse. This Plan builds upon two earlier efforts by Utah state agencies (2003, 2009) to protect sage-grouse. The new Plan is designed to protect high quality habitat, enhance impaired habitat and restore converted habitat to support sage-grouse populations in Utah. The overall intent of the actions identified in the Plan is to eliminate threats to the species and negate the need for the listing of the species under the provisions of the federal Endangered Species Act.

In general, these actions were developed to: assure the protection of habitat which provides for the year-round life-history needs of sage-grouse; perpetuate the conditions necessary to ensure recruitment of a continuing sage-grouse population; and enhance or improve impaired or altered

sage-grouse habitats through restoration or rehabilitation activities. The Plan also balances the economic and social needs of the residents of Utah through a coordinated program that provides for both incentive-based conservation programs and reasonable and cooperative regulatory programs.

A series of population, habitat and management objectives are outlined, and specific management actions and mitigation suggestions are identified for both private and public lands. The Plan defines 11 statewide Sage Grouse Management Areas (SGMA's) with lands classified within these SGMA's as habitat, non-habitat or opportunity areas. The mitigation portion of the Plan proposes to evaluate current or proposed impacts to sage-grouse habitats within each SGMA, determine potential impacts and implement specific mitigation strategies to avoid, minimize or reduce these impacts. A wide variety of threats and disturbances are also addressed in the Plan with potential mitigation strategies suggested. These threats include: fire control, suppression and rehabilitation; invasive species; predation; vegetation management; extractive mineral development; transmission corridors; renewable energy development; recreation and off-highway vehicle uses; improper livestock grazing; and hunting.

Utah Governor's Executive Order (Sage Grouse)(EO/2015/002)

In February 2015, Utah Governor Gary Herbert signed an Executive Order (EO) that directs all relevant state agencies to comply with and assist in the implementation of the *Conservation Plan for Greater Sage-Grouse in Utah (2013)*. The intent of the EO is to strengthen the regulatory certainty of the State of Utah's conservation efforts, while focusing the statewide efforts and priorities of those agencies toward coordinated conservation actions that benefit sage-grouse. This Executive Order identifies specific agency actions and policy decisions that will maintain, improve and enhance greater sage-grouse habitats, opportunity areas and species' populations within the 11 SGMA's. The Governor's Public Lands Policy Coordinating Office (PLPCO) is overseeing the implementation of this EO, along with close coordination and support from UDWR.

Memorandums of Understanding (Sage Grouse)

In June 2015, PLPCO and UDWR developed individual Memorandums of Understanding (MOU) with eight state agencies to assist with the implementation of the *Conservation Plan for Greater Sage-Grouse in Utah*. These agencies include: the Utah Department of Agriculture and Food; the Utah Department of Transportation; the Utah Office of Outdoor Recreation; the Utah Department of Natural Resources; the Utah Division of Oil, Gas and Mining; the Utah Division of Forestry, Fire and State Lands; the Utah Division of Parks and Recreation; and UDWR. The purpose of these agreements is to formalize coordination between PLPCO, UDWR and the respective state agencies to assist with compliance with the Executive Order. The MOU's outline how each agency will coordinate with UDWR and PLPCO, and what they will do to maintain, improve and enhance greater sage-grouse habitats, opportunity areas and species populations within specific sage-grouse management areas as outlined in the *Conservation Plan*.

Conservation Agreement and Strategy for Bonneville Cutthroat Trout (*Oncorhynchus clarki utah*) in the State of Utah (UDWR Publication #97-19)

Under this 1997 Agreement, Bonneville cutthroat trout are currently managed as a Conservation Agreement Species by the U.S. Fish and Wildlife Service. As part of the Agreement and

Strategy, all the signatories to the Agreement, including UDWR, have agreed to work towards restoration of the species to prevent further population declines and to prevent the species from being listed as threatened or endangered. As part of this overall strategy, efforts to protect existing Bonneville cutthroat trout populations are undertaken, along with efforts to restore or recover the trout into historical habitats. This Agreement was recently updated in early 2018 to continue partnership efforts to improve habitat and prevent population declines (no publication number available).

IV. Strategies for Property Management

Development Activities

- **Fence needs:** Continue the ongoing project of replacing 50+ year old wooden fences that are breaking down and falling apart. Habitat Council funding has aided this effort the last 2 years.
- **Sign needs:** Need to add more definitive signs WMA entrances and check the property boundaries for adequate or out of date signage.
- **Habitat needs:** The existing irrigation system is being evaluated to determine its effectiveness. Following this evaluation, ditches will be adjusted, moved, or re-cut as needed, to improve irrigation on the meadow.
- **Facility needs:** DFCM is willing to perform a facilities study through a Building Needs Plan in 2018 if approved by DWR Leadership. This study will help determine the cost and effort required to bring the facility to a greater than 90% rating.

Annual Maintenance Activities

All fences and gates will be maintained to protect habitat quality. HRWMA's access roads and parking lots will be maintained, including posting appropriate signs to communicate rules and regulations. All equipment, water control structures, bridges, and other capital resources will have continual maintenance and will be updated as necessary. Information and regulatory signs will be replaced as needed. Noxious and invasive weeds will be monitored and controlled using herbicide applications supplemented with biological control agents.

Zoning and Land Use Ordinances

There are no known conflicts with existing local government general plans, zoning regulations or land use ordinances.

HRWMA is located in the Forest Recreation Zone District (FR40) of Cache County. Public and Institutional Facilities are a conditional use in the FR40 Zone. However, Section 17.01.030 of the Cache County Code provides, "To the extent provided by law, properties owned and operated by the State of Utah or the federal government shall be exempt from the provisions of this title. [Title 17, Cache County Zoning Regulations]. DWR strives to inform local constituents regarding management activities. This is accomplished through a group of stakeholders that represents various public interests in the management of HRWMA. This advisory committee was assembled to advise and offer comment during the development process of this management plan. This committee is comprised of members representing local community leaders, sportsmen, researchers, educators, biologists, and WMA managers.

V. Strategies for Habitat Management

Habitat Improvement Plan

The management of the area is directed to maintaining, enhancing and developing diversified habitats which in turn, support a diverse wildlife species compliment. A highly functional system in a healthy condition benefits wildlife resources and the user public, and demonstrates the UDWR is a good land steward. This also provides evidence that the public investment (license/permit sales, general fund etc.) is being used effectively to protect wildlife for its intrinsic, scientific, educational and recreational values. Habitat conditions are annually evaluated, and enhancement, restoration, or development activities are selected for implementation on specific sites. Methods used for these activities including: grazing; water improvements; planting; mechanical manipulation; burning; and herbicide treatments.

The primary tools used to manipulate vegetative habitat on the WMA are mechanical, fire, chemical (natural or synthetic), and herbivores (wildlife, domestic animals, or insects).

- Chemical treatment is directed mainly at noxious and invasive weeds.
- Livestock grazing is a useful tool for vegetation management. The cattle grazing seeks to maintain a good shrub/grassland mix that provides excellent winter habitat for elk and mule deer. The sheep grazing reduces the amount of Dyer's woad occurring in Blacksmith Fork Canyon on the WMA, and also helps with the maintenance of good mixture of shrub/grassland in sheep allotments. The grazing has also helped to reduce the presence of fine fuels which has helped in slowing down wildland fires when they have occurred.
- The use of Biological Control Agents (BCA) (such as insects, rust, fungi, etc...) in the control of noxious and invasive weeds are becoming more acceptable and available. They are currently being used for some weed species on the WMA. When additional controls are approved for use, they should be evaluated for introduction into the area on a case by case basis.
- Beaver are also used to create and enhance wet meadow and riparian habitats throughout the WMA, and these efforts will continue.

Currently, the beaver have done extensive work in lower Curtis Creek and Upper Rock Creek. After the exclosures were installed, these riparian areas regenerated quickly with the aid of beaver activity. In Rock Creek, there was a rapid return of grasses and willows in the riparian area as the beaver elevated the water table from their activity. In Curtis Creek, the USU Water Lab had been doing stream flow analysis prior to the beaver arrival. Through their continued monitoring we've learned that in the area with beaver activity, there has been a change to a more dynamic system.

There are now varying areas of depth and stream flow, varying temperature zones within the creek, and diverse habitats providing rearing, feeding, and spawning locations for both fish and macro invertebrates. Whereas, prior to the beaver activity, all these variables were fairly static.

An added benefit has been the prolonging of the irrigation window. Due to the damming of the creek and elevation of the water table, HRWMA is able to irrigate approximately 2 weeks longer than 5 years ago. Spring runoff is not as severe as the beaver dams slow down the water and more is retained in the upper reaches of the drainage.

The number one habitat improvement activity for Hardware Ranch WMA is improvement of winter range for wintering mule deer and elk. Utah juniper (*Juniperus osteosperma*) and aging sagebrush stands are some of the challenges to be faced in the coming years. Over the last 2-3 years, lop and scatter treatments have been conducted in dense juniper areas. Removal of juniper releases water and nutrient “banks”, making them available for shrub and grass species. These communities have responded favorably to the removal of juniper trees. Noxious weeds are being controlled throughout the WMA. WMA management works closely with the Cache County Weed Department to contain and work toward eradication of invasive species.

In conjunction with the ongoing GPS collar study evaluating elk movements and possible disease transmission concerns, habitat conditions on HRWMA will be evaluated and areas where treatments can be applied to increase the holding capacity for elk will be identified in the immediate area surrounding the trap facilities and feeding meadow.

Future habitat improvement plans may also include land acquisitions through mitigation or land trade opportunities.

As recommended by the UDWR Deer and Elk Management Plans, the following projects have been suggested for Hardware Ranch and the surrounding areas.

- Blacksmith Fork Canyon and Hardware Ranch WMA. Projects should be focused on removal of encroaching juniper, and reestablishing understory with winter browse species, as well as species of plants that can be used in the spring by wintering deer.
- Winter range enhancement on all wintering WMA's on the unit including Hardware Ranch, through scalping and hand planting browse species.
- Transitional Range burn on Hardware Ranch WMA to increase browse and understory components.

There are no individual management plans for any Species of Greatest Conservation Need or Utah State Sensitive Species. In the future, as species management plans are written and adopted by the Utah Wildlife Board, they may be implemented at HRWMA.

Strategies for habitat management will be based on a holistic approach that takes into account the wildlife, habitat and human components of the WMA. They include:

- Provide an array of different habitat types in structure, composition, and plant phenology that address the diverse number of species and chronological annual life cycle needs of

wildlife that use the area, with a special focus on improving conditions for big game, while minimizing negative impacts to other species that use the area.

- Maintain a diverse plant and wildlife community using the available tools, technology and knowledge.
- Maintain control of undesirable plant species, increase food quality and production, and enhance cover quality.
- Minimize negative impacts to wildlife in the area.

Wildlife and Habitat Goal, Objectives, and Strategies

A detailed breakdown of goals & objectives pertaining to wildlife and habitat improvement can be found in the Executive Summary.

Grazing Management Plan

Following a unique 3-year grazing study on HRWMA (2004-2007), prescriptive grazing was adopted as a habitat management tool on the facility. The grazing program uses sheep and/or cattle to influence specific plant community compositions. One of the primary objectives at HRWMA is to increase rangeland forb production to benefit transitional and summer big game areas, as well as nesting and brood-rearing sage grouse.

Other habitat improvement objectives for which grazing can be an effective tool include:

- Increasing and maintaining brush production in big game winter habitat
- Maintaining and enhancing riparian areas as highly productive aquatic and terrestrial environments
- Reducing undesirable vegetative species such as Dyer's woad, spotted knapweed, and cheatgrass
- Providing meaningful recreational and educational opportunities to increase public awareness and stewardship of wildlife and habitat
- Reduction of fine fuels that can trigger catastrophic wildfire

The 2004 to 2007 grazing study and current management have delineated areas of HRWMA into well-defined grazing management areas. The prescriptive method establishes specific objectives for each management area, and controls:

- Location – the placement of livestock within a controlled management area,
- Density – the number of grazing livestock allowed in the management area,
- Season – the time of year livestock is introduced or reintroduced, and
- Intensity and duration – the length of stay within a management area based on grazing effects on vegetation.

Tailoring these variables to obtain the specific objectives is the “prescription” for each management area. Grazing is an effective tool that will be used to improve critical areas and ranges, and thereby contribute to the overall health and diversity of habitats on HRWMA.

Prescriptive grazing differs from most traditional programs in many ways. On HRWMA, large concentrations of sheep (1,500 head) or cattle (750 head) are placed onto ranges in the midst of spring green-up when grass, as well as undesirable plants, are emerging, succulent, nutritious, and palatable to livestock. This is also a good time to generate the plant disturbance necessary to

invigorate decadent brush and to use muddy hoof prints to open a seed bed. Some of the management areas may open to grazing as early as the first week in April.

Prescriptive grazing also requires significant evaluation prior to turnout of the animals in order to establish a baseline of existing vegetative conditions, as well as objectives, targets/desired vegetated conditions, and timelines for livestock rotations into each management unit. On the WMA, several of the areas benefit from being re-grazed in the same season, depending upon the rotation schedule. Re-grazing some areas is possible because the same plants are again nutritious and palatable, re-grazing damages undesirable plants at a later stage in their growth and, often, hoofs push seeds into the moist soil, assisting with restoration of the rangeland. A grazing season on HRWMA could run from April 1 through the end of August, or around 5 months. Based on data from the grazing study, there are typically about 3,000 (traditional) AUMs available, depending on moisture, temperature and other seasonal variables. As with other grazing, the problem is balancing a challenging abundance of feed in the early spring with rapidly drying grass in July and August.

The fences and other infrastructure on HRWMA have improved dramatically over the last few years, although much of it is along exterior boundary lines, and doesn't coincide with the boundaries of designated grazing management areas. This is one of the reasons that prescriptive grazing is much more resource and labor intensive. Livestock must be controlled and rotated as determined by the preseason assessment, and then by in-progress evaluations. Habitat factors like sage grouse nesting activities, fish spawning seasons, and runoff can be forecasted, but are often adjusted; thus both livestock and range conditions require very close monitoring.

Grazing on HRWMA is conducted in the midst of many other activities, and HRWMA is open to the public 365 days a year. Several programs run April through December and the WMA is a popular location for hunting, fishing, hiking, horseback riding, OHV use, and camping. Public access is important and temporary closures to accommodate grazing are rare.

Contract monitoring and onsite management is conducted by the region and the facility managers. Grazing fees are based on the Division-wide average cost of AUMs. Payment is either in cash or in-kind assessment, where materials and labor equal to the grazing fees are provided on-site by the grazer. Since grazing is a tool for improving habitat, all grazing fees are targeted at projects that benefit wildlife and their ranges. Projects on HRWMA have included fencing to control livestock and protect sensitive resources, development of dispersed water sites, weed control activities, and cleanup of abandoned fences and sites.

HRWMA has obtained other project funding used to complement grazing fees. In the past, other funds were used to construct an enclosure fence on a section of Rock Creek being impacted by both livestock and vehicles. Grazing fees had already been used to fence adjacent ground, and together the two fence systems provide control and protection for the area, as well as providing a new management tool for other resources and programs. Management zones have been re-designated and realigned for this Management Plan. Resource considerations extend beyond grazing and include monitoring and evaluation of all activities and programs that affect habitats on HRWMA. Please see map in Appendix A for more information. Current annual grazing allotments on the WMA include:

- Cattle grazing units: Rattlesnake/Meadow unit (1666 acres), Rock Creek (1147 acres), and Squaw Flats unit (2576 acres).
- Sheep grazing units: Hardware Plateau unit (912 acres) and Curtis Ridge unit (1596 acres).

Utah Division of Wildlife Resources Administrative Rule 657-28 describes the uses and activities allowed on Division Lands. It provides for prescribed domestic livestock grazing “necessary for the maintenance or improvement of wildlife habitat on particular division properties.” Grazing by cattle and sheep is used annually at HRWMA. Grazing prescriptions are designed to achieve specific goals and objectives. Specific annual grazing information can be obtained from the HRWMA headquarters office.

Fire Management Plan

No specific Fire Management Plan has been developed for the WMA. The use of fireworks is prohibited on the WMA (R657-28-4). Campfires must be contained within existing campsites, and in developed fire rings or pits.

VI. Summary Statement of Proposed Uses

The primary purposes of Hardware Ranch Wildlife Management Area (HRWMA) are: to preserve, restore, and enhance both aquatic and terrestrial habitat for wildlife; manage wildlife populations to meet wildlife management objectives; conserve, protect, and recover sensitive wildlife species and their habitats; protect cultural resources; and provide for recreational opportunities that are compatible with the purpose of upland and wetland ecosystems. The overall management goals for the area are directed to maintaining, enhancing and developing a diversified habitat which supports a diverse wildlife species compliment. This goal can be accomplished by maintaining a highly functional system in a healthy state to benefit the wildlife resources and the user public. This will also demonstrate that UDWR is a good land and wildlife steward.

VII. Monitoring and Evaluation

Monitoring and evaluation is accomplished through site assessments, surveys (wildlife and public), data collections (species presence and harvest) and analysis, and through observations. The WMA Manager is responsible for monitoring projects to ensure they meet all stated goals and objectives. Assistance will be required from other sections and will be requested as needed.

VIII. Appendices

- Appendix A- Maps
 - General Location
 - Surrounding land ownership
 - Road and Access
 - Terrain and Precipitation
 - Grazing Allotment
- Appendix B- Legal Description and Encumbrances
 - Land Parcels and Legal Information

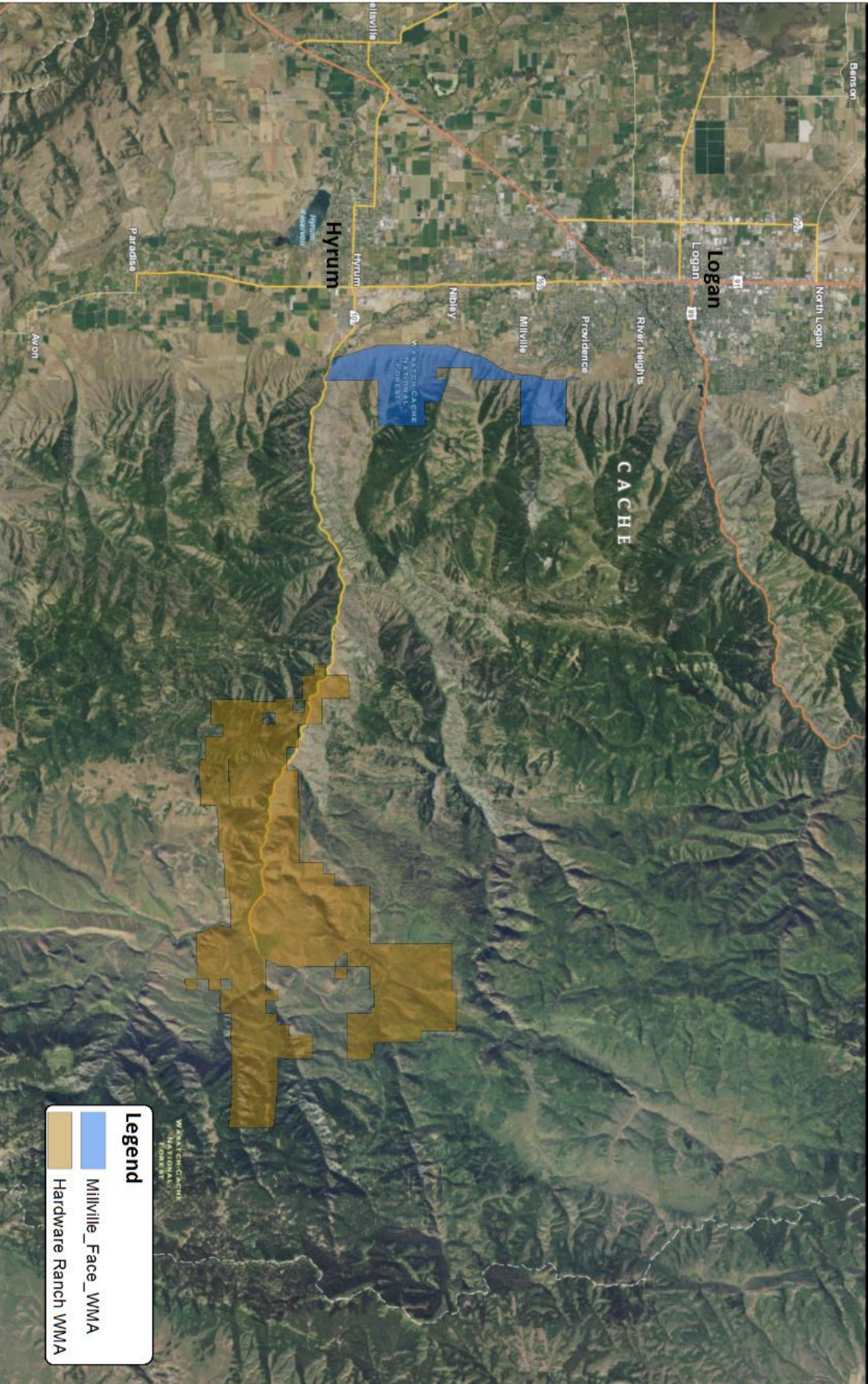
Appendices

Appendix A

Maps



Hardware Ranch Wildlife Management Area General Location Map

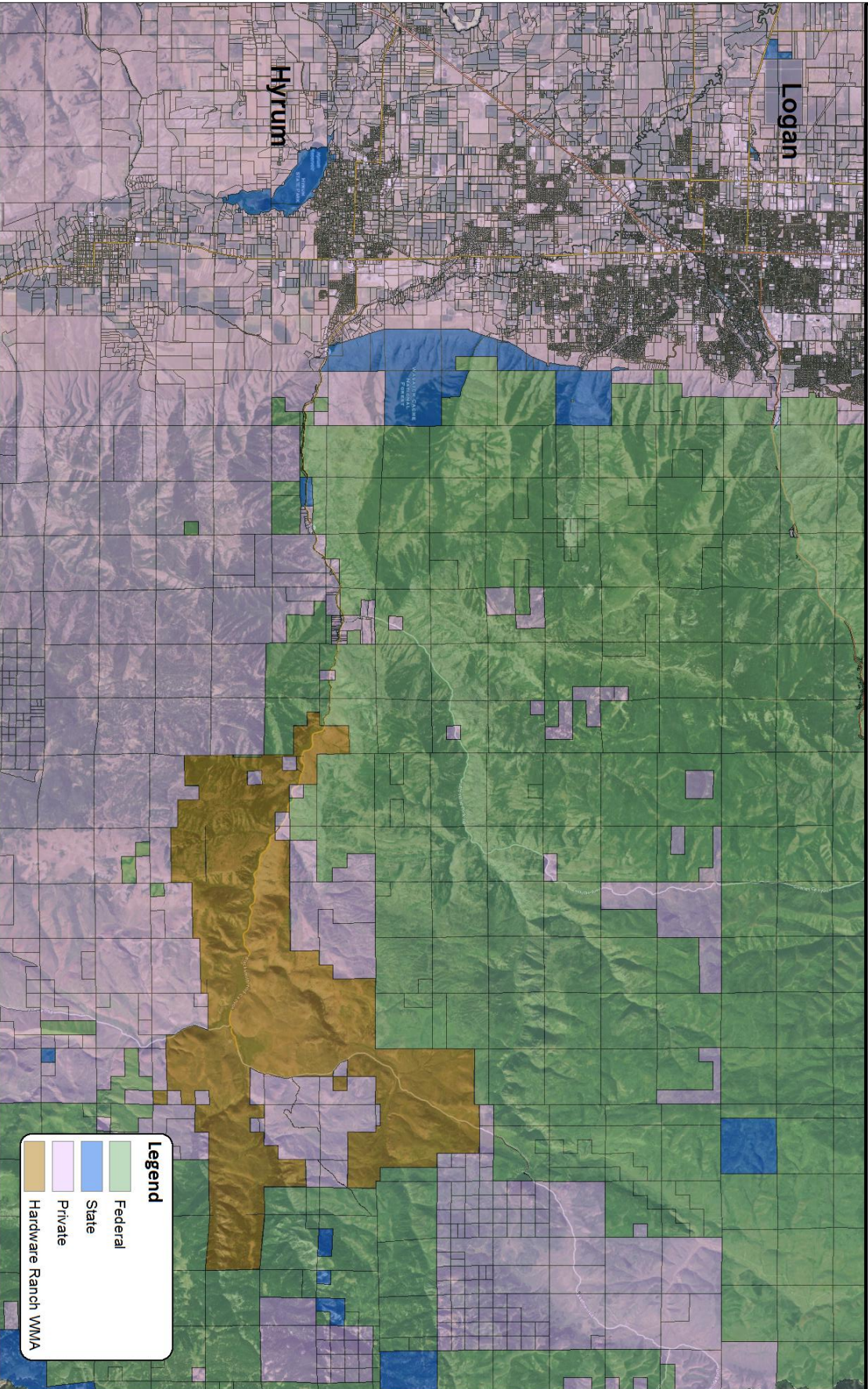
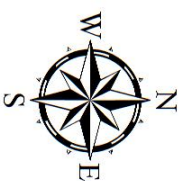


Legend

- Millville_Face_WMA
- Hardware Ranch WMA



Hardware Ranch Wildlife Management Area Land Ownership Map

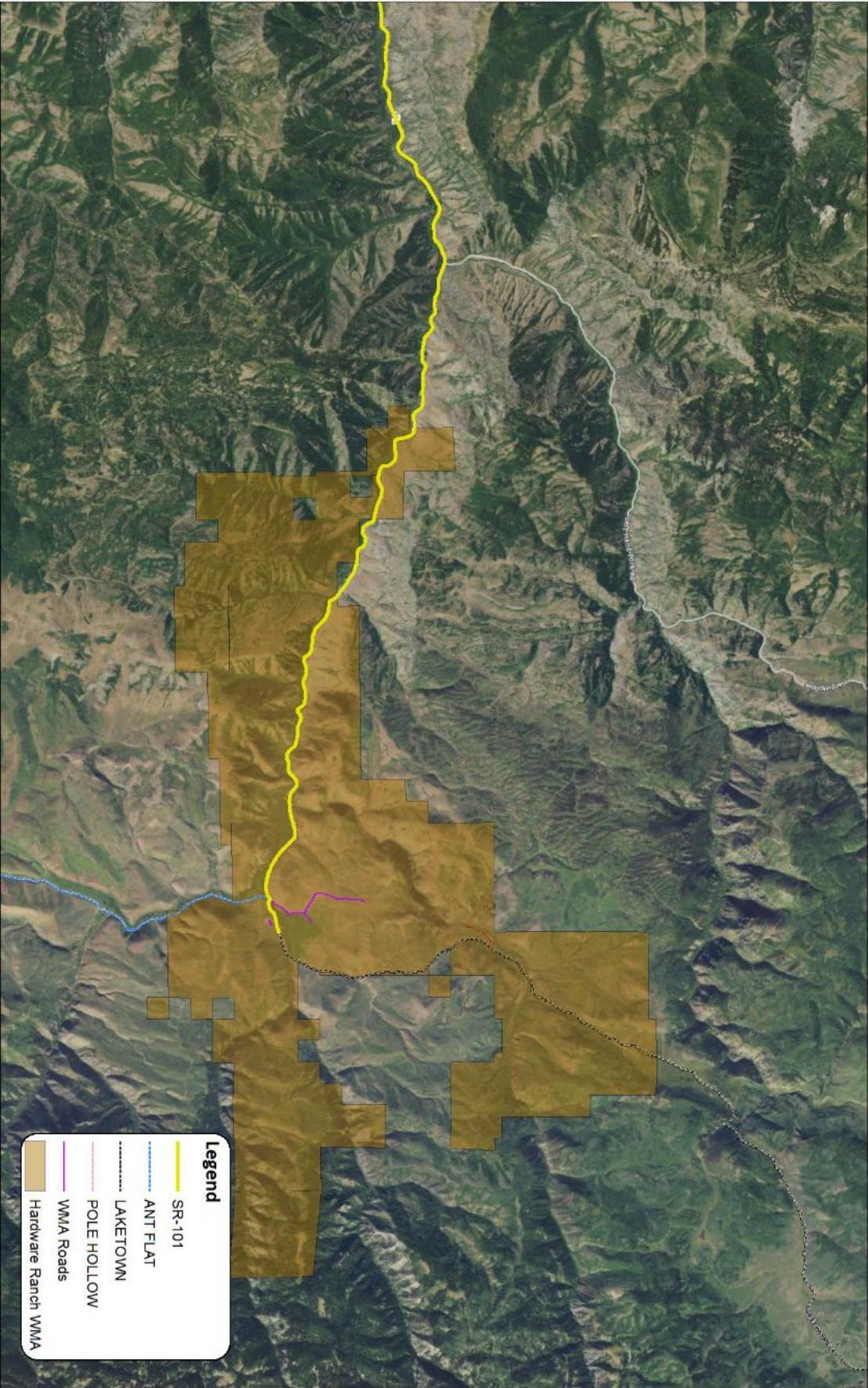


Legend

- Federal
- State
- Private
- Hardware Ranch WMA



Hardware Ranch Wildlife Management Area Road Access Map

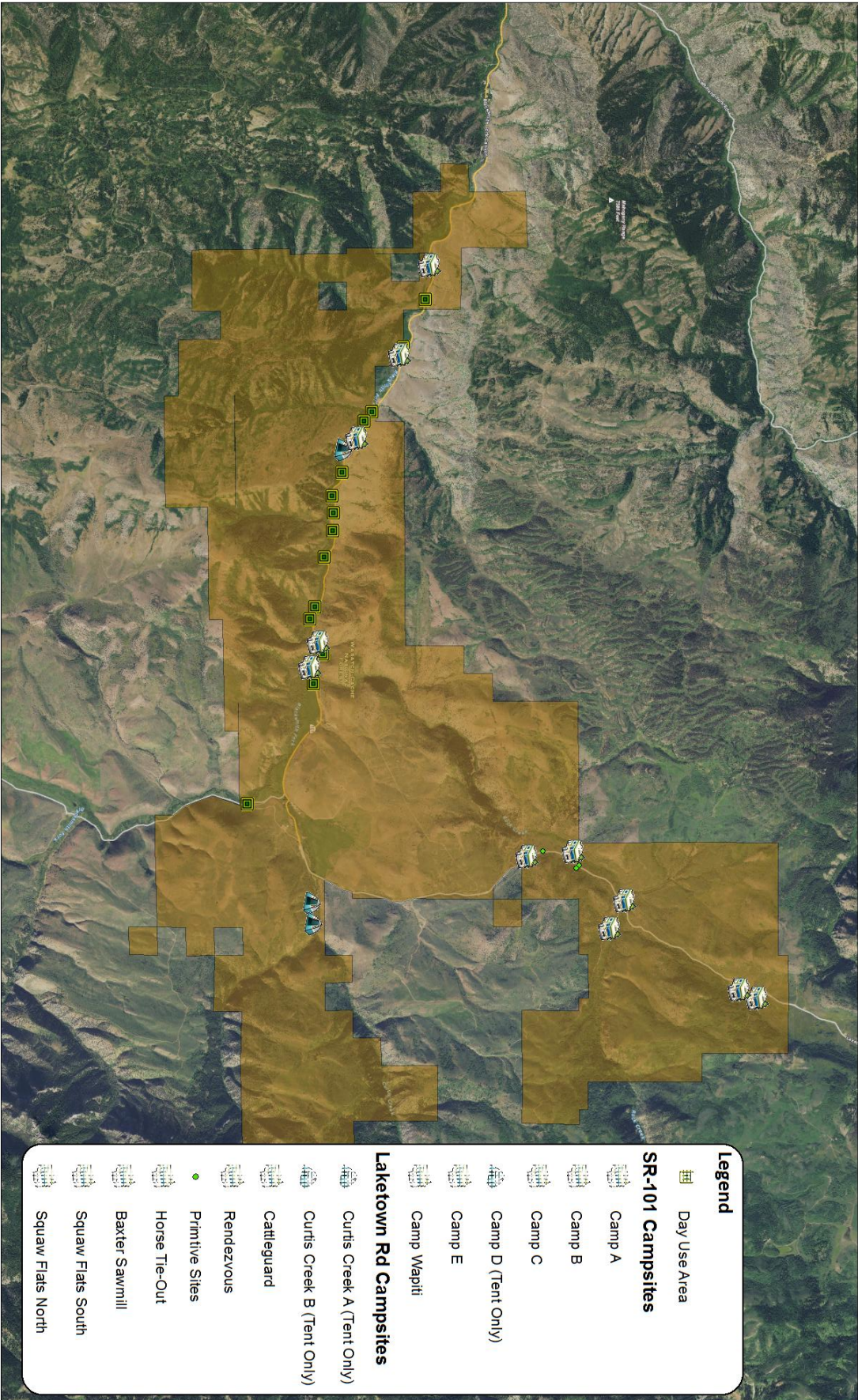


Legend

- SR-101
- ANT FLATS
- LAKETOWN
- POLE HOLLOW
- VMMA Roads
- Hardware Ranch WMA



Hardware Ranch Wildlife Management Area Camping & Day Use Access Map



Legend

- Day Use Area

SR-101 Campsites

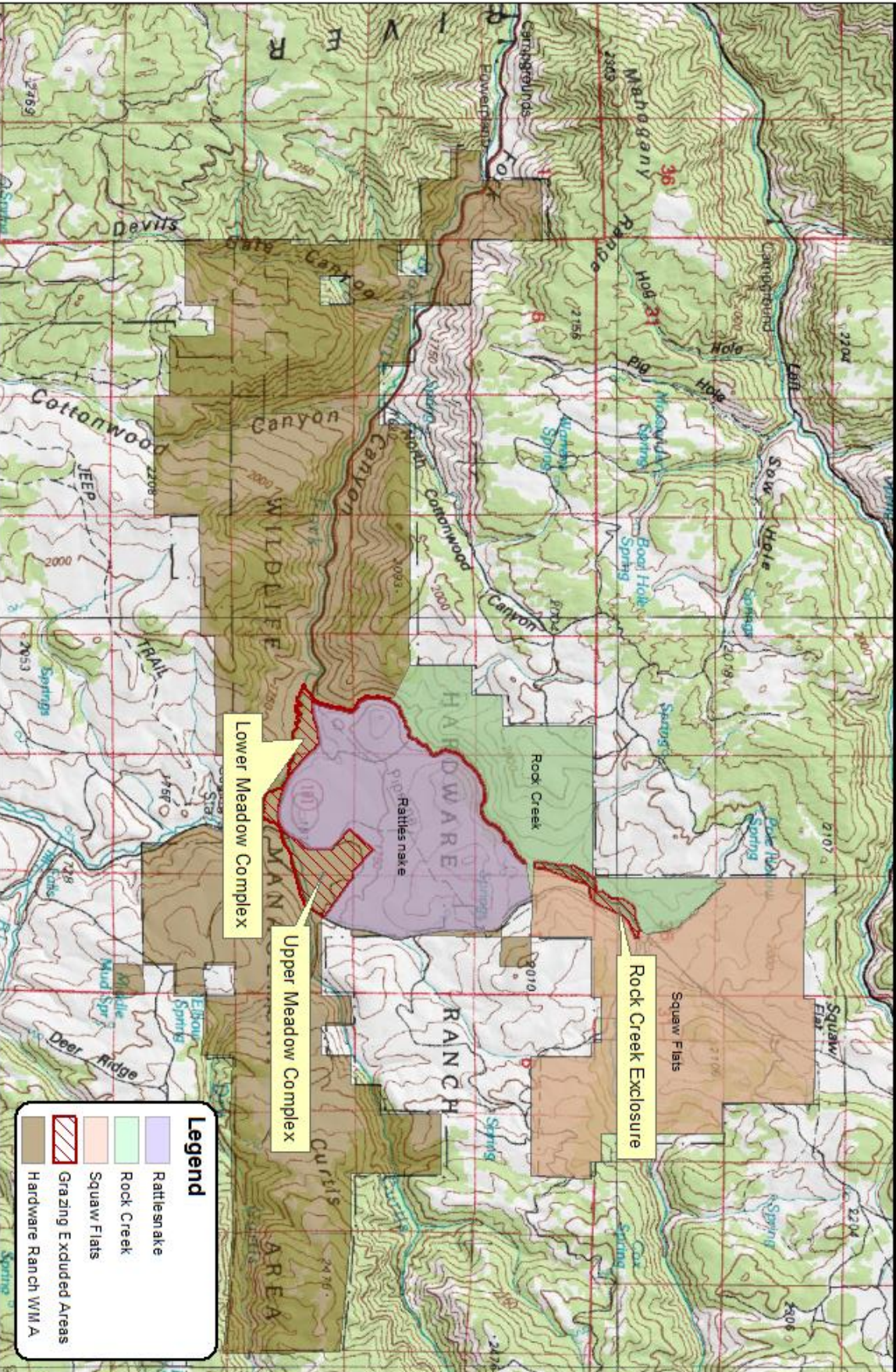
- Camp A
- Camp B
- Camp C
- Camp D (Tent Only)
- Camp E
- Camp Wapiti

Laketown Rd Campsites

- Curtis Creek A (Tent Only)
- Curtis Creek B (Tent Only)
- Cattleguard
- Rendezvous
- Primitive Sites
- Horse Tie-Out
- Baxter Sawmill
- Squaw Flats South
- Squaw Flats North



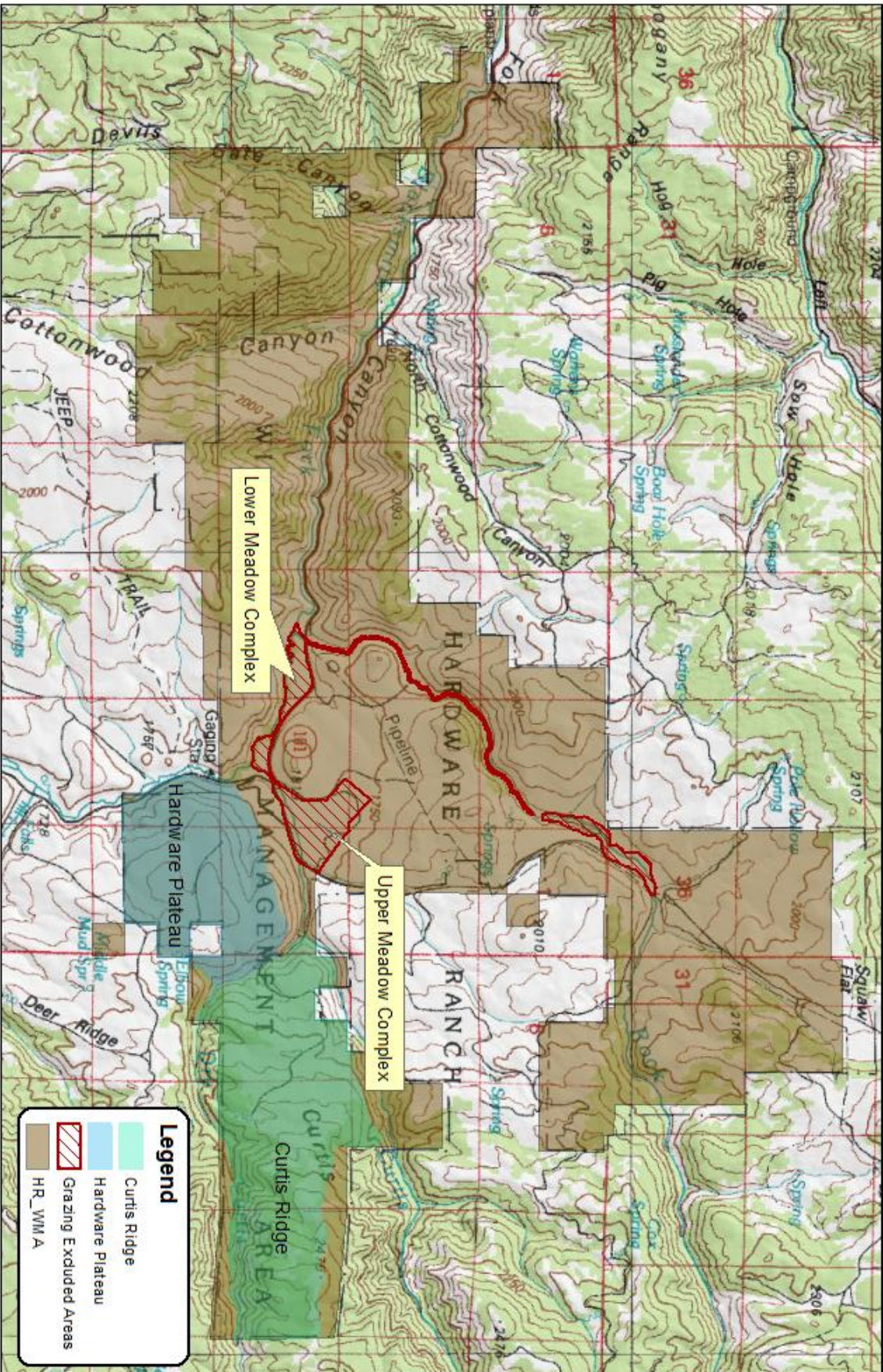
Hardware Ranch Wildlife Management Area Cattle Grazing Allotment Map



Legend	
	Rattlesnake
	Rock Creek
	Squaw Flats
	Grazing Excluded Areas
	Hardware Ranch WMA



Hardware Ranch Wildlife Management Area Sheep Grazing Allotment Map

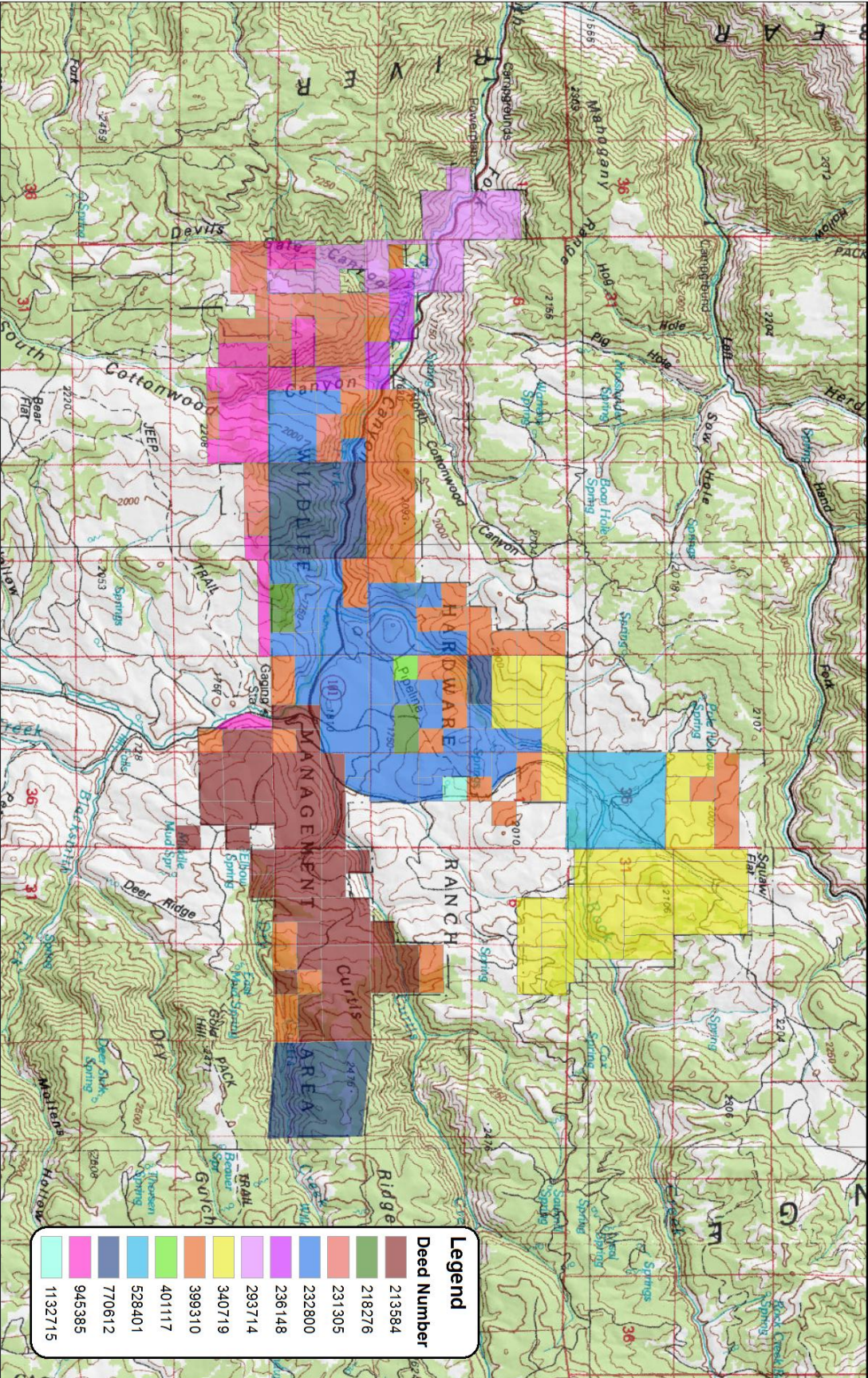


Appendix B

**Legal Description and Encumbrances,
Agreements, Enhancements, and Easements**



Hardware Ranch Wildlife Management Area Parcel Deed Map



Hardware Ranch WMA Legal Description and Encumbrances, Agreements, Enhancements, and Easements

Property Acquisition Information

Grantor: *Molen and Mary Peterson*

Warranty Deed #218276 Book: 83 Page: 188 Signed: 4/18/1946 Recorded: 4/27/1946

Township 10 North, Range 3 East

Section 11: N1/2SE1/4(80.00 acres)

Section 15: SE1/4SW1/4, SW1/4SE1/4(80.00 acres)

Encumbrances & Limitations:

- None listed.

Grantor: *Raymond and Vilda Nielsen (1,829.60 acres)*

Warranty Deed #231305 Book: 86 Page: 472 Signed: 2/24/1948 Recorded: 2/27/1948

Township 10 North, Range 3 East

Section 7: Lot 16

Section 18: NE1/4, S1/2SE1/4, Lots 1,8,9, and 16

Section 20: E1/2SW1/4,W1/2SE1/4

Section 21: NW1/4, NW1/4NE1/4, N1/2SE1/4

Section 30: Lots 1,8,9, and 16

Encumbrances & Limitations:

- None listed.

Grantor: *Ernest and Annie Petersen(1,625 acres)*

Warranty Deed #232800 Book: 87 Page: 115 Signed: 4/28/1948 Recorded: 5/8/1948

Township 10 North, Range 3 East

Section 1: SW1/4SW1/4, N1/2SW1/4 W of Ogden/Bear Lake RD

Section 2: E1/2SE1/4, SW1/4SE1/4, SE1/4NE1/4

Section 10: SE1/4, E1/2SW1/4, SE1/4NW1/4, E1/2NE1/4

Section 11: S1/2SE1/4, S1/2SW1/4, NE1/4SW1/4, NE1/4SW1/4, SE1/4NW1/4, SW1/4NE1/4, NE1/4NE1/4; AND the S1/2SE1/4, S1/2SW1/4, NE1/4SW1/4, SE1/4SW1/4, SW1/4NE1/4, NE1/4NE1/4

Section 12: SW1/4, W1/2NW1/4, SE1/4NW1/4, E1/2 W of Ogden/Bear Lake RD

Section 13: NW1/4NW1/4, SW1/4NW1/4 N of Ogden/Bear Lake RD, SE1/4NW1/4 NW of Bear Lake RD, NE1/4NW1/4 W of Ogden/Bear Lake RD

Section 14: N1/2NW1/4, SW1/4NE1/4, NE1/4SE1/4 NW of Ogden/Bear Lake RD, SE1/4NW1/4 NW of Bear Lake RD, NE1/4NW1/4 of Ogden/Bear Lake RD

Section 17: SE1/4NW1/4, NE1/4NE1/4, E1/2SW1/4, SE1/4

Section 16: ALL

Section 15: S1/2NW1/4, NE1/4, W1/2SW1/4, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4

Encumbrances & Limitations:

- None listed.

Grantor: *Ernest and Annie Peterson (240 acres)*

Warranty Deed #236148 Book: 87 Page: 627-8 Signed: 11/8/1948 Recorded: 11/8/1948

Township 10 North, Range 3 East

Section 8: SW1/4SW1/4, Lots 9 and 10

Section 7: NW1/4SE1/4, SE1/4SE1/4

Encumbrances & Limitations:

- None listed.

Grantor: *Joseph & Naomi Olsen; Ernest & Sadie Olsen (2,336.30 acres)*

Warranty Deed #213584; Book: 82 Page: 281-282 Signed: 10/5/1945 Recorded: 10/24/1945

Township 10 North, Range 3 East

Section 13: S1/2NW1/4, S1/2NE1/4, SW1/4, SE1/4

Section 14: NW1/4SE1/4, NE1/4SE1/4, SW1/4SE1/4

Section 24: NW1/4, E1/2NE1/4, SE1/4NE1/4, N1/2SW1/4, NW1/4SE1/4, SE1/4SE1/4

Township 10 North, Range 4 East

Section 7: SE1/4SE1/4

Section 8: SW1/4

Section 17: NW1/4SW1/4, SE1/4SW1/4; N1/2SE1/4,

Section 18: S1/2NW1/4, NW1/4NE1/4, SE1/4NE1/4, SW1/4, W1/2SE1/4, NE1/4SE1/4; and E1/2NE1/4

Section 19: Lot 1, NE1/4NW1/4

Encumbrances & Limitations:

- Canal or ditch ROW; contains app. 1.88 acres
- Any Cache County ROW's for roads

Grantor: *Joseph and Jene Peterson; LeGrand and Zeltha Mathews (839.56 acres)*

Warranty Deed #293714 Book: 30 Page: 63 Signed: 8/27/1958 Recorded: 9/2/1958

Township 10 North, Range 3 East

Section 1: SE1/4

Section 12: NE1/4, NE1/4NW1/4

Section 7: Lots 2,3,4, 5,6,7,12,13,14,15

Section 18: Lots 3,6,7,10,12,15

Encumbrances & Limitations:

- Minerals reserved
- Right of entry, and ROWs and Easements associated with exercise of mineral rights

Grantor: *Leone Hansen (4,094.80 acres)*

Warranty Deed #340719 Book: 100 Page: 308-309 Signed: 7/27/1966 Recorded: 07/27/1966

Township 10 North, Range 3 East

Section 1: Lots 3-4

Section 2: 1-4, SW1/4NE1/4, S1/2NW1/4, N1/4SE1/4, N1/2SW1/4

Township 10 North, Range 4 East

Section 3: Lots 1-4, S1/2NW1/4, SW1/4NE1/4, N1/2SW1/4, SE1/4SW1/4, SE1/4SE1/4

Section 4: Lots 1-4, S1/2N1/2, N1/2S1/2, SW1/4SW1/4, SE1/4SE1/4

Section 5: Lots 1-4, S1/2N1/2, SE1/4

Section 6: Lots 1-2, S1/2NE1/4

Section 8: N1/2NE1/4

Section 9: NW1/4NW1/4

Section 10: N1/2NW1/4

Township 11 North, Range 3 East

Section 25: W1/2SW1/4, SE1/4SW1/4, SE1/4

Township 11 North, Range 4 East

Section 29: W1/2

Section 30: Lots 1-4, E1/2E1/2

Section 31: Lots 1-6, E1/2NE1/4

Section 32: All

Encumbrances & Limitations:

- Minerals reserved (not including sand and gravel)
 - Rights to lease or assign
 - Rights of ingress and egress pertaining to reserved rights
 - Shall compensate grantee for interference or damages incurred
- Grazing permits not conveyed

Grantor: *United States of America, United States Forest Service (2,279.64 acres)*

Patent # 43-77-0001

Patent Deed #399310 Book: 203 Page: 718 Signed: 11/9/1976 Recorded: 12/23/1976

Township 10 North, Range 3 East

Section 1: S1/2NW1/4, SE1/4SW1/4, NW1/4SE1/4

Section 3: Lot 1, SE1/4NE1/4, NE1/4SE1/4, S1/2SE1/4

Section 7: Lot 11, SW1/4SE1/4

Section 8: E1/2SW1/4, SE1/4

Section 9: S1/2

Section 10: W1/2NE1/4, NE1/4NW1/4, W1/2SW1/4

Section 11: NW1/4NE1/4, SE1/4NE1/4, NE1/4NW1/4, W1/2NW1/4

Section 14: S1/2SW1/4, SE1/4SE1/4

Section 15: N1/2NW1/4

Section 17: NW1/4NE1/4, NE1/4NW1/4

Section 23: E1/2NE1/4, NE1/4SE1/4

Township 10 North, Range 4 East
Section 8: S1/2NW1/4
Section 17: NE1/4SW1/4, SW1/4SW1/4, S1/2SE1/4
Section 18: SE1/4SE1/4
Township 11 North, Range 3 East
Section 25: S1/2N1/2, NE1/4SW1/4

Encumbrances & Limitations:

- ROW for ditches & canals constructed by US
- Minerals reserved
- 66' easement, 33' from centerline each side, of Forest Road #20054; terminated after 5 yrs. of non-use

Grantor: *Svend and Ruth Johansen*

Warranty Deed #401117 Book: 207 Page: 5 Signed: 3/1/1977 Recorded: 3/1/1977

Township 10 North, Range 3 East
Section 11: NW1/4SW1/4(40 acres)

Encumbrances & Limitations:

- State claims all minerals

Grantor: *State of Utah, Division of State Lands and Forestry*

Patent #18890 Deed #528401 Book: 37 Page: 216 Signed: 9/25/1989 Recorded: 11/29/1989

Township 11 North, Range 3 East
Section 36: All (644.16 acres)

Encumbrances & Limitations:

- Shall endure so long as lands are for public use; upon failure shall revert to Div. State Lands and Forestry
- All coal and mineral rights reserved to the State of Utah
- subject to easement or ROW established according to law
- subject to ROWs, ditches, tunnels, and telephone and transmission lines constructed by US authority

Grantor: *State of Utah, Utah School and Institutional Trust Lands Administration*

Patent #19488 Certificate of Sale: 25582-D

Patent Deed #770612 Book: 1041 Page: 177 Signed: 8/21/2001 Recorded: 9/27/2001

Township 10 North, Range 3 East
Section 2: S1/2SW1/4(80 acres)
Section 16: All (640 acres)

Encumbrances & Limitations:

- Minerals reserve to SITLA
- Perpetual easement to adjoining State of Utah property reserved to SITLA
- subject to existing ROWs and ROWs, ditches, tunnels, and telephone and transmission lines constructed by US authority

Grantor: *Dee's Inc. (798.00 acres)*

Exchange Agreement #08-07 Special Warranty Deed #945385 Book: 1465 Page:1374

Signed: 5/1/2007 **Recorded:** 5/31/2007

Township 10 North, Range 3 East

Section 17: SW1/4SW1/4

Section 18: N1/2SE1/4

Section 19: Lots 8-16, S1/2 of Lots 1,5,6,7, E1/2NE1/4

Section 20: N1/2N1/2NE1/4SE1/4, N1/2NW1/4SW1/4, S1/2NW1/4SE1/4,
S1/2NE1/4SW1/4, SW1/4SE1/4, SE1/4SW1/4

Section 21: NE1/4NE1/4, N1/2SE1/4, S1/2NW1/4, SE1/4NE1/4

Section 22: N1/2N1/2N1/2

Section 30: Lots 1,8,9,16

Encumbrances & Limitations:

- None listed.

Grantor: *Bruce Hall*

Warranty Deed #1132715 Book: 1864 Page: 1806 Signed: 9/11/2015 Recorded: 9/11/2015

Township 10 North, Range 3 East

Section 12: NE1/4NW1/4 (40 acres)

Encumbrances & Limitations:

- None listed.

Property Disposal Information

Grantee: Utah State Road Commission

Quit Claim Deed #402801 Book: N/A Page: N/A Signed: 12/15/1972 Recorded: Not on Deed

Township 10 North, Range 3 East

A parcel of land being part of an entire tract of property located in;

Section 8: NW1/4SW1/4 and S1/2SW1/4

Section 17: NE1/4NW1/4 and N1/2NE1/4

Total acres: 18.50 acres

*see Quit Claim Deed for description of center line

Encumbrances & Limitations:

- None listed

Grantee: *United States of America, United States Forest Service (2,294.35 acres)*

Patent #23-042-0029(Trade/Exchange)

Patent Deed #373612 Book: 1028 Page: 688-691 Signed: 6/21/1973 Recorded: 7/2/1973

Township 10 North, Range 2 East

Section 7: E1/2NW1/4, NE1/4, and Lots 1-2

*excepting a strip of land 40' on either side of a centerline described on deed

Township 10 North, Range 4 East

Section 3: Lots 1-4, SW1/4NE1/4, S1/2NW1/4, N1/2SW1/4, SE1/4SW1/4, SE1/4SE1/4

Section 4: Lots 1-4, S1/2N1/2, N1/2SW1/4, SW1/4SW1/4, N1/2SE1/4, SE1/3SE1/4

Section 5: Lots 1-2, S1/2NE1/4, SE1/4

Section 8: N1/2NE1/4

Section 9: NW1/4NW1/4

Section 10: N1/2NW1/4

Township 11 North, Range 4 East

Section 29: N1/2NW1/4

Section 30: Lot 1, NE1/4NE1/4

Section 32: Lots 1 & 8, E1/2NE1/4

Encumbrances & Limitations:

- Mineral reserved to State of Utah in the following:

Township 10 North, Range 2 East

Section 7: E1/2NW1/4, NE1/4, and Lots 1-2

*EXCEPT the strip of land 40' on either side of a centerline described on deed

Township 10 North, Range 4 East

Section 3: SE1/4NW1/4, SW1/4NE1/4, N1/2SW1/4, SE1/4SW1/4, and E1/4SE1/4

Section 4: SW1/4SW1/4, N1/2SE1/4, and SE1/4SE1/4

Section 8: N1/2NE1/4

Section 9: NW1/4NW1/4

Section 10: N1/2NW1/4

Township 11 North, Range 4 East

Section 32: E1/2NE1/4, and Lots 1 & 8

Total acres: 1,064.85 acres

Grantee: *Dee's Inc., Coldwater Ranch (918.15 acres)*

Exchange/Quit Claim Deed #945384 and # 945383; **Book:** 1465 **Page:** 1372 **Signed:** 05/29/2007 **Recorded:** 05/31/2007

Township 10 North, Range 3 East

Section 19: Lots 8-16, S1/2 of Lots 1,5,6,7

Section 20: E1/2SW1/4, W1/2SE1/4

Section 21: N1/2SE1/4, SE1/4SE1/4

Section 30: Lots 1,8,9,16

Encumbrances & Limitations:

- None listed

DRAFT

**Hardware Ranch
Wildlife Management Area**

- Conservation Outreach Plan Summary -

July 2018

Prepared by:

Utah Division of Wildlife Resources

Northern Region

**515 East 5300 South
Ogden, Utah 84405**



Hardware Ranch Wildlife Management Area Conservation Outreach Plan Summary July 2018

Outreach Management Philosophy

Hardware Ranch WMA defines conservation outreach as "... a process that leads participants from awareness to exploration, and ultimately to active personal involvement in wildlife conservation." (Phil Douglass, UDWR Outreach Manager)

Conservation outreach provides opportunities for the public to participate in this process with the expectation that by doing so, many of the participants will become hunters, anglers, wildlife watchers, and outdoor enthusiasts. Families, will in turn, spend more time outdoors increasing their personal involvement, consequently valuing wildlife and their habitats, becoming stewards of the resource, and supporting the Division.

Personal involvement in wildlife conservation can be quantified by purchasing hunting and fishing licenses, watching wildlife, attending Division events, making personal choices that benefit wildlife, and by supporting Division management decisions and contributing financially to the agency.

Each component defined below is a tool to achieve the overall goals of conservation outreach.

Education

At HRWMA, education is split into four groups: school programs, group programs, events, and skills based clinics. School programs target teachers and students in the public school system, are smaller in size, and are tied to core curriculum standards for specific grades. Group programs refer to formal education programs that are requested by organized groups. These programs are tied to the messages of the WMA, and include groups such as scouts, senior citizens, church groups, etc. Events target multiple, large groups and ages combined in one setting, such as expos, fairs, and skills based clinics.

Interpretation

Interpretation at HRWMA includes outreach opportunities for the general public. They are less structured than education and target a larger, non-captive and more diverse audience. Interpretation is "...a communication process designed to reveal meanings and relationships of our natural and cultural heritage through firsthand sensory experiences" (Tilden, 1957). It is "pleasurable, relevant, organized and thematic (Ham, 1992). The Rocky Mountain Region Center for Design expands these definitions for the purposes of an agency as, "a service provided to enhance visitors' experiences and to provoke and motivate additional learning and discovery. It is also a management tool that can be used to increase visitors' appreciation for, and sensitivity to, the natural and cultural resources of the area". The emphasis at HRWMA is interactive, rather than passive interpretation, and includes exhibits, sleigh ride talks, Visitor Center programs, and displays.

Communications

Communication efforts at HRWMA focus on informing the general public about current and future management actions, soliciting input on management actions, and then responding to that input. HRWMA managers encourage two-way communication and exchange of information between the public and the Division. The purpose is to provide multiple forums and opportunities to interact with management and the decision making process, or to inform of decisions/actions and the process that led to that decision. Communication at HRWMA also includes administrative site signage and all media efforts that support both management and the conservation outreach program. Social media sites such as Facebook, Instagram, and Twitter have become a critical elements in communicating with the general public regarding activities at HRWMA. Communication serves the entire conservation outreach process.

Visitor Services

Visitor Services at HRWMA refer to those services offered to the public that improve the quality of their experience. Services include restrooms, water, picnic facilities, front desk reception, way finding, ticket sales, telephone reception and information desk. These services provide visitors a level of comfort and security in which to explore Utah's wildlife and the programs we offer. Visitor services provide the basic necessities for a visitor to take the first exploration step, getting them outdoors and experiencing wildlife and wild lands in a welcoming local setting.

Volunteer Programs

Volunteer programs at HRWMA can be split into two categories: dedicated hunter volunteers and general volunteers. Dedicated hunters are part of a Division wide program that focuses on habitat related volunteer projects, including education. In return for service, these hunters get hunting benefits. General volunteers refer to all other volunteers not participating in the dedicated hunters program. It is believed that volunteering creates stewardship - the ultimate step in the conservation outreach process. It provides participants an opportunity to do something for wildlife, and people often feel that they must build something to contribute to the future of wildlife. Volunteers are often used to build awareness, as well as infrastructure and habitat enhancements.

Background Information

WMA Outreach History

By the 1940s, the elk population in the mountains above Cache Valley had increased dramatically and numbered in the hundreds. A few hundred wintered along the benches causing depredation concerns by eating haystacks and crops, and interfering with the increasing dairy and agricultural activities. Mule deer were also thriving and contributing to crop depredation.

The Division has conducted a continuous winter elk feeding program at HRWMA since the winter of 1947, and it has grown into a major public winter attraction in northern Utah. The initiation of the elk feeding program also coincided with a growing education element in the 1950's within the "Fish and Game Department", as UDWR was formerly known. To capture education opportunities at HRWMA, personnel began offering free rides on the "feed" wagon to

see wintering elk. Since the first sleigh ride in 1957, visitors have come annually to see the elk. Interviews with former personnel (Personal communication, Steve Kearl) indicated that free rides and multiple visits each year contributed to the peak of 50,000 visitors during the late 1950s and early 1960s. Today the average is between 25,000 - 30,000 annual visitors.



In 1971, the Utah legislature passed a bill to create a Visitor Center to expand outreach opportunities. In 1987, the Utah Legislature cut funding support for the sleigh rides as a cost saving measure. Two years later, in 1989, a public fee structure was approved and the outreach rides resumed. Due to the strong tradition instilled by the sleigh rides and visitor center, the Division and the Legislature sought to reopen the visitor programs by contracting the sleigh rides to private providers. Two such contracts were offered from 1989 until 2003. These contracts included sleigh rides to see the elk, food service, snowmobile services, and lodging.

A report to the Natural Resources Committee of the Utah State Legislature in 1996 identified conflicting missions between the contractors and the Division, and concluded that concessionaires tend to be more compatible with “state park” management. It was also determined that changing the nature of HRWMA to be more like a state park would conflict with the original charter, and may not be permissible under the conditions of the original grant.

Food services provided by the contractor were popular with the public, but treated by the contractor as “filler” and were not considered to be profitable. Subsequent efforts to provide food services have been unsuccessful, but options to find a suitable level of food service for visitors are considered.

When the last contractor opted not to renew the contract in 2003, the Division purchased the sleighs and restaurant equipment, horses and tack for the horse program, and retained a concessionaire for food service for three seasons, 2003-2005. This effort was unsuccessful in generating profit for the concessionaire and was discontinued. The move away from concessionaires was also an effort to provide programs that are more consistent and compatible with wildlife management and conservation outreach operations.

In the 1990’s, HRWMA was moved from the Wildlife Section to the Outreach Section of the Division. This move placed greater importance on outreach as a management component of the WMA. In 2003, an assistant manager was hired with a job description tied more closely to outreach, and was charged to increase outreach programming; especially education programming correlated to state school science standards. This position has been vacant since January 2016.

Days of operation for sleigh rides and the Visitor Center were reduced in 2007 to Friday, Saturday, Sunday, and Monday as part of the Governor's four-day work initiative. These hours of operation are supported by data that shows these are the most highly visited days by the public. HRWMA actually functions 7 days a week during the winter in order to feed elk and horses, clear snow, and maintain equipment, facilities, and programs.

Outreach programs and effort have grown over the years to include year-round education programming. Funding is the main challenge in conducting outreach programs at HRWMA.

Staffing

The WMA Manager position focuses on all WMA operations including; wildlife and habitat management, outreach efforts, and facilities and property maintenance. Outreach responsibilities include: supervising the Assistant Manager; supervising seasonal employees; managing winter sleigh rides; livestock training and maintenance; equipment maintenance; developing and implementing media and administrative signage; and identifying volunteer opportunities. The HRWMA Manager also acts as the appointed steward over Millville Face WMA.

The Assistant Manager position at Hardware Ranch WMA is currently vacant. Previously the position was approximately 90% dedicated to outreach management including: outreach development; implementation and reporting; supervising seasonal employees; and assisting with teaching the education programs. Responsibilities included all components of the education and interpretive programs and assisting the Ranch Manager in volunteer efforts. The remaining 10 % was dedicated to general WMA management. Both managers share in efforts to recruit, train and supervise additional outreach staff and facilities and grounds maintenance.

The implementation of HRWMA's various outreach efforts is carried out mainly by seasonal staff. Winter is the greatest use of seasonal manpower requiring 8-9 employees to drive the wagons, deliver the interpretive message on the meadow, clear snow, and perform WMA maintenance. Three to four employees are needed to staff the Visitor Center throughout the winter. These employees sell tickets, answer questions from the public, and perform general janitorial maintenance. During the rest of the year, (spring – fall), 1-2 seasonal employees are hired to implement other outreach programs such as Mountain Wilds to Wetland Wonders, Kids in Action, and Natural Resource Field Days.

One to two seasonal employees are also hired during the summer to perform farm tasks associated with raising hay on the WMA's hay fields and perform other WMA maintenance tasks such as spraying weeds, fixing ditches, installing culverts, fixing fences, maintaining buildings, maintaining equipment, and monitoring public use of the WMA.

Trends and Data

There is little outreach data or research compiled and synthesized into usable formats before 2003. This is due in part, to limited staffing resources to conduct research and collect data generally associated with outreach programs. Outreach Appendix A contains data capturing participation info for the various outreach programs conducted at HRWMA. This data is sufficient to show current trends since reorganization of the HRWMA into the Outreach Section of the Division.

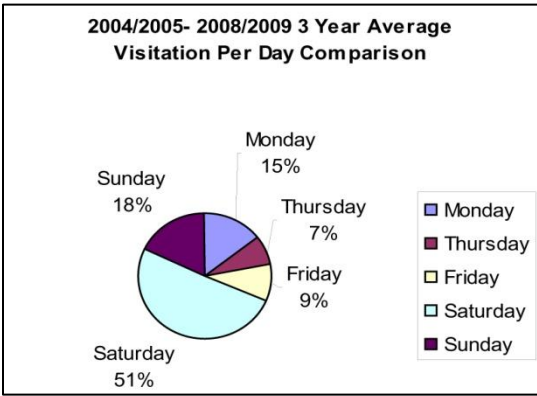


Figure 1: 3 year average/day comparison of patronage.

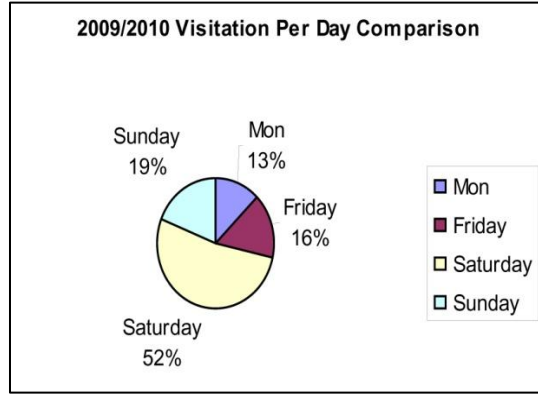


Figure 2: Visitation per day after changing to 4 day initiative.

The charts in Figures 1 and 2 show visitation by day of the week. The numbers are derived from sleigh ride sales, with the assumption that most of our visitors purchase tickets and take the ride.

Outreach numbers, other than the winter sleigh rides, are recorded at each individual program and synthesized into yearly outreach reports. Some outreach programs have occurred yearly since 2003, while others are intermittent.

Since the first sleigh ride was offered at Hardware Ranch WMA, outreach efforts have expanded and evolved. Currently HRWMA offers a variety of outreach opportunities, from the traditional sleigh ride and school programs, to events. A complete list of outreach programs can be found in Appendix B.

The current strength of the outreach program at HRWMA is the personal messages delivered by the drivers during the sleigh rides and the naturalist-led education field trips for schools. Media programs also serve the WMA by maintaining public interest in the wildlife traditions at HRWMA.

Outreach Programs and Activities

Winter Programming

The winter outreach season begins with horse drawn sleigh rides and the Annual Elk Festival held the second Saturday in December. Various conservation group partners, local chapters, and sister agencies participate in this event. In the last 5 years, the Elk Festival has grown from an average of 500 attendees to over 1,200. An amateur elk calling contest will be featured in the 2017-2018 season

Sleigh Rides

During the winter, HRWMA conducts an extensive outreach program built around the feeding of 500-700 Rocky Mountain elk on the meadow of the WMA. This program includes horse drawn sleigh rides through the elk herd, where a captive audience receives a 20-25 minute Division approved message about the history of the WMA, elk biology, and the role the Division plays in managing the State's wildlife. This program will see as many as 30,000 visitors in a 13-week period and comprises about 86% of HRWMA's overall outreach effort.

Willy Wapiti's Smoke Pole Biathlon

In 2015, a muzzleloader/snowshoeing biathlon was added as way to promote winter recreation and shooting sports. This event takes place in Curtis Creek Canyon and comprises a shooting course covering approximately 1/2 mile and 6 shooting stations. Each contestant is timed for the snowshoe between targets, loading their muzzleloader, and firing 2 shots per station at the targets. Contestants are scored on their speed and accuracy. The biathlon was successful the first year and is now an anticipated annual event.

Educational Programming

All About Elk - Winter Education

The All About Elk program runs during the winter while sleigh rides are available. Students that participate in All About Elk learn about the differences in predator and prey animals. All About Elk consists of 3-4 stations depending on the group size. These stations consist of: Predator vs. Prey, Importance of Habitat, Visitor Center Self Explore, and a Sleigh Ride.



Predator Vs Prey

Using the skulls of a predator and prey animal, the differences are identified. Some of these different features include the type of teeth and placement of the eyes. Through role play the students, now predators, attempt to sneak up on the instructor, the prey. Adaptations to the various animals can be added, such as better hearing for the prey or the ability to see in low light for the predator, to illustrate these differences.

Importance of Habitat

Through an educational game called "Oh Deer!", students are introduced to the needs of wildlife in order to survive (habitat): space, shelter, water, food. With some students designated as deer, the rest choose which resource they will be and the deer seek to collect these resources in order to survive. As the population grows, habitat diminishes, and deer die and become resources. The difficulty can be increased by the addition of predators.

VC Self Explore

In the Visitor Center the students are able to touch and observe different hides and furs from various wildlife. They are invited to learn about the different sounds that wildlife on HRWMA make and the types of habitat they need. Students also learn the difference between antlers and horns.

Sleigh Ride

During the sleigh ride students get to go on a horse drawn sleigh ride through a herd of Rocky Mountain elk. While on the sleigh ride they learn the history of Hardware Ranch WMA, about elk biology, what UDWR does to manage the State's wildlife, and some of the on-going research at HRWMA.

Mountain Wilds to Wetland Wonders

The Mountain Wilds to Wetland Wonders (MWWW) program is the second largest outreach program at HRWMA and has been running continuously for the last 11 years. This program is a unique partnership between UDWR's Hardware Ranch Wildlife Management Area and U.S. Fish and Wildlife Services' (USFWS) Bear River Migratory Bird Refuge (BRBR) which brings 4th grade students, from Box Elder County School District, out to explore and learn about the natural world around them. This program fits into the science curriculum currently being taught during the fourth grade.

Students in MWWW participate in 4 different education stations. In the fall these students get to experience the montane habitats and terrestrial wildlife at Hardware Ranch WMA and in the spring these same students experience wetland habitats and wetland wildlife at the Bear River Bird Refuge. This program introduces the 4th graders to learn about the various aspects of what makes up a watershed and begin to see the larger picture of how watersheds are interconnected. The 4 educational stations are similar, yet tailored to fit the location of the field trip. During Hardware's portion of the program, Mountain Wilds, students learn about wildlife, plants, watersheds, and macro invertebrates.

Wildlife

During this portion, students are challenged to think about and identify wildlife sign. Then on a "hike" down a predetermined path students are challenged to point out wildlife sign that they see and to identify the wildlife that left the sign.

Plants

Students learn how scientists classify, name, and group things together using a dichotomous key. To begin, a life size model of a dichotomous key is created that classifies: trees, shrubs, grasses, and forbs. The students are walked through it and then challenged to classify different plants in the area. Students are then introduced to a dichotomous key on paper and challenged to classify more plants using their paper keys.

Watersheds

At this station, students learn the definition of a watershed, an area of land where all the water is flowing to the same place. To help students visualize a watershed we have a model and spray bottle that shows how precipitation flows in a watershed. We then talk about the uniqueness of the Bear River Watershed that contains HRWMA and BRBR, how it does not flow to the ocean, but to the Great Salt Lake. Students are challenged to identify characteristics in the Curtis Creek drainage around them that they have learned about.

Macro Invertebrates

Students learn about the 4 C's of water quality; Coldness (temperature), Current, Clarity, and Critters (wildlife). The students then get to search for macro invertebrates (bugs that can be seen with the naked eye) in Curtis Creek, using kick or dip nets. When students find a bug they then use a dichotomous key to identify their find. They are challenged to identify 3 different bugs.

Kids in Action



HRWMA's Kids in Action has been in operation for four years and brings in 90 students annually from the Logan School District. The program is sponsored by the U.S. Dept. of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), and Forest Service (FS) and conducted in cooperation with the Cache County Weed Department, and Logan City Schools (Logan High School and the Edith Bowen Laboratory School). Kids in Action (KIA) is a summer curriculum that involves science oriented students in

education and field opportunities. KIA implements bio-control as a viable tool for weed management on Hardware Ranch WMA and provides a bridge between existing fourth grade programs and high school programs.

Two field opportunities exist to conduct biological control efforts. These field trips occur at Hardware Ranch WMA where students participate in a two-day focused program on invasive plants and biological control agents that are part of the invasive weed management effort at the WMA. Twenty students, in June, from Logan High's USTAR program and 70 students, in August, from Edith Bowen Lab School monitor 2 existing insectaries on the WMA for evidence of previously released agents working in existing invasive weed communities. The students also have the opportunity to release bio-control agents in designated sites. Target noxious weeds include spotted knapweed, Canada thistle, and field bindweed.

Skills Based Clinics

HRWMA is host to an advanced skills clinic related to hunting wild turkeys throughout the state. This clinic is conducted by the National Wild Turkey Federation and focuses on calling techniques, decoy setups, working difficult birds, camouflage, hunter safety, and much



more. Sportsman's Warehouse has been a valuable partner in this clinic, being able to showcase available turkey hunting gear and providing decoys and calls as raffle prizes for the attendees.

In 2018, a basic skills clinic providing an introduction to muzzleloaders was offered in conjunction with the muzzleloader/snowshoeing biathlon. The clinic is conducted by the Willow Creek Free Trappers, a local group of mountain men and muzzleloader enthusiasts. The clinic focused on basic safety, loading, and firing muzzleloaders.

Local Historical Events

Each year the American West Heritage Center (AWHC) implements the Willie Handcart Experience on the WMA. The AWHC Handcart Trek experience is a 3 day, 2 night living history reenactment for youth, adults, and families to pull handcarts as they reenact Utah's unique migration history. This program allows 2,000 - 3,000 participants, annually, to experience a historically accurate trekking experience and connect with the history of the State of Utah.

Volunteer Programs

The volunteer effort at HRWMA is primarily based in the Division's dedicated hunter program, which offers participants enhanced hunting opportunities in exchange for work on wildlife conservation projects and other maintenance. The program has actively promoted trades people to provide volunteer services at HRWMA, and has resulted in significant facilities improvements with minimal direct funding. When volunteer projects require funding, the current expense budget is used.

Academic Studies

HRWMA has a history of cooperating with the Utah State University (USU) Quinney College of Natural Resources (CNR) as a venue for research and study pertaining to range and wildlife management.

Other Special Use Permits (SUP's)

While not intimately involved in the carrying out of the following events, HRWMA plays host to other community activities conducted under SUPs. The Top of Utah Marathon is conducted in mid-September and begins at Hardware Ranch WMA. Runners leave the WMA and head down Blacksmith Fork Canyon to finish the race in the valley. The National Multiple Sclerosis Society also conducts an annual bike race event that raises money funding MS research and supporting those suffering with MS. This race also begins at the WMA and is conducted each year at the end of June. UDWR issues SUP's for both of these events.

Winter Feeding & Disease Testing

A winter elk feeding program at HRWMA has operated since the winter of 1947. The purpose of the feeding program is to draw elk away from agricultural areas in Cache Valley. The acquisition of the property was ideal because it is located away from the populated valley and agricultural fields. It also has 120 acres of a grass hay meadow that is harvested annually to provide elk feed in the winter. The annual winter feeding is typically initiated on the second weekend in December and feeding occurs daily until the last Monday of February. Due to the large

concentration of animals in the feed rows during the winter there is a growing concern regarding Brucellosis and the future possibility of infection and transmission to elk in northern Utah. Please see the Habitat Management Plan Summary for more information on wildlife disease monitoring efforts.

Maintaining and Promoting Healthy Habitats

Healthy habitats are an important part of HRWMA's mission. As a Wildlife Management Area, Hardware Ranch is important to wintering big game animals in the Bear River mountains of Cache Valley. Please see the Habitat Management Plan Summary for more information on wildlife and habitat management efforts.

Public Access Management

Public access is permitted year round on the majority of HRWMA. This year round use impacts wintering wildlife through extensive snowmobile activity off established groomed trails and early-spring shed hunters.

As a WMA managed for the benefit of wildlife and given that Hardware Ranch WMA is mostly used by wildlife during the winter, it is the recommendation of this plan that Hardware Ranch WMA, similar to other northern region WMAs, be closed from Jan. 1 to the second Saturday in April to protect wintering wildlife, excepting Division sponsored activities, and that winter recreation be relegated to established/groomed trails only. Please see the Habitat Management Plan Summary for more information on habitat management and public access management efforts.

Outreach Goal, Objectives, and Strategies

A detailed breakdown of goals & objectives pertaining to conservation outreach can be found in the Executive Summary.

Appendices

Appendix A

Outreach Program Data

Annual Sleigh Ride Data Summary										
Season	Sleigh Rides					REVENUE				
	Dec	Jan	Feb	March	Total Ride	Dec	Jan	Feb	March	TOTAL
2003.2004										
2004.2005	4817	7078	5764	1456	19115	\$ 25,472	\$ 31,004	\$ 23,801	\$ 5,684	\$ 85,961
2005.2006	4151	5282	7460	3480	20373	\$ 23,327	\$ 23,964	\$ 32,080	\$ 13,752	\$ 93,123
2006.2007	7003	5436	472	0	12911	\$ 32,615	\$ 14,203	\$ 5,020	\$ -	\$ 51,838
2007.2008	4609	5546	8573	2465	21193	\$ 21,375	\$ 24,654	\$ 36,983	\$ 10,779	\$ 93,791
2008.2009	2687	9498	5861	1519	19565	\$ 12,555	\$ 43,265	\$ 25,403	\$ 6,433	\$ 87,656
2009.2010	4700	8608	5584	33	18925	\$ 19,182	\$ 39,206	\$ 23,116	\$ 155	\$ 81,659
2010.2011	3736	7828	5024	0	16588	\$ 17,340	\$ 35,634	\$ 21,480	\$ -	\$ 74,454
2011.2012	5995	3820	3539	0	13354	\$ 27,815	\$ 16,598	\$ 15,217	\$ -	\$ 59,630
2012.2013	5955	4563	5019	0	15537	\$ 23,315	\$ 20,825	\$ 26,093	\$ -	\$ 70,233
2013.2014	6588	7492	4164	215	18459	\$ 30,564	\$ 33,074	\$ 30,246	\$ 1,007	\$ 94,891
2014.2015	4396	9958	1035	0	15389	\$ 20,316	\$ 45,006	\$ 3,841	\$ -	\$ 69,163
2015.2016	9995	10494	8051	0	28540	\$ 41,690	\$ 47,778	\$ 36,385	\$ -	\$ 125,853
2016.2017	10319	7848	7170	0	25337	\$ 40,891	\$ 28,099	\$ 29,540		\$ 98,530

Table 1: Sleigh ride data collected since 2003 when the Division took over the sleigh rides and interpretation.

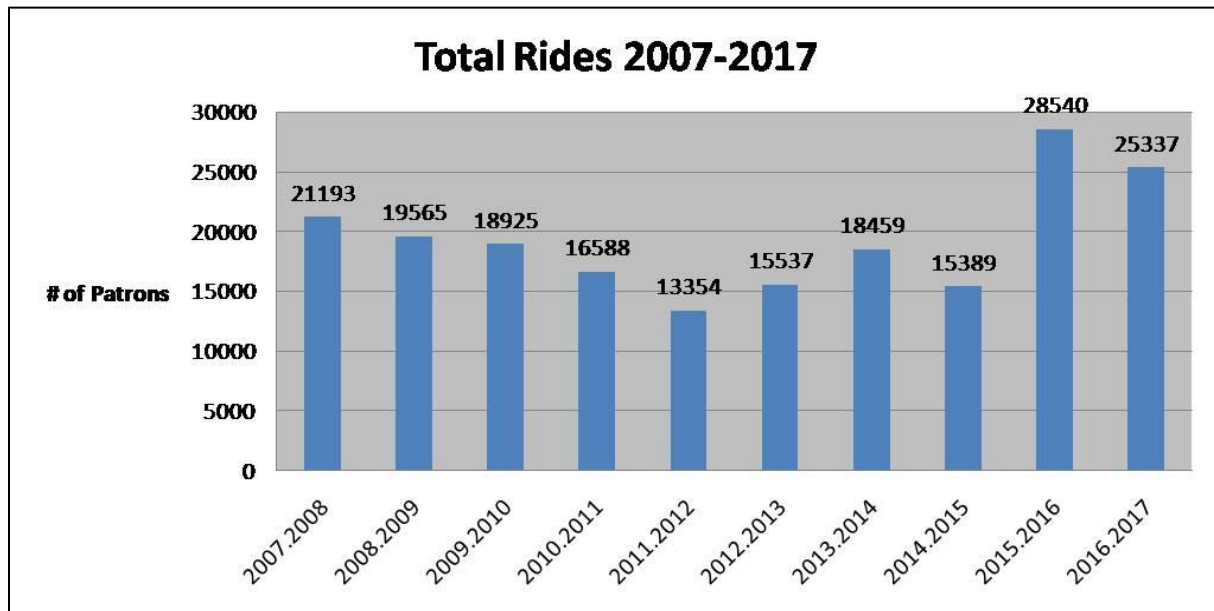


Figure 3: Chart showing Total rides given over a 10 yr period.

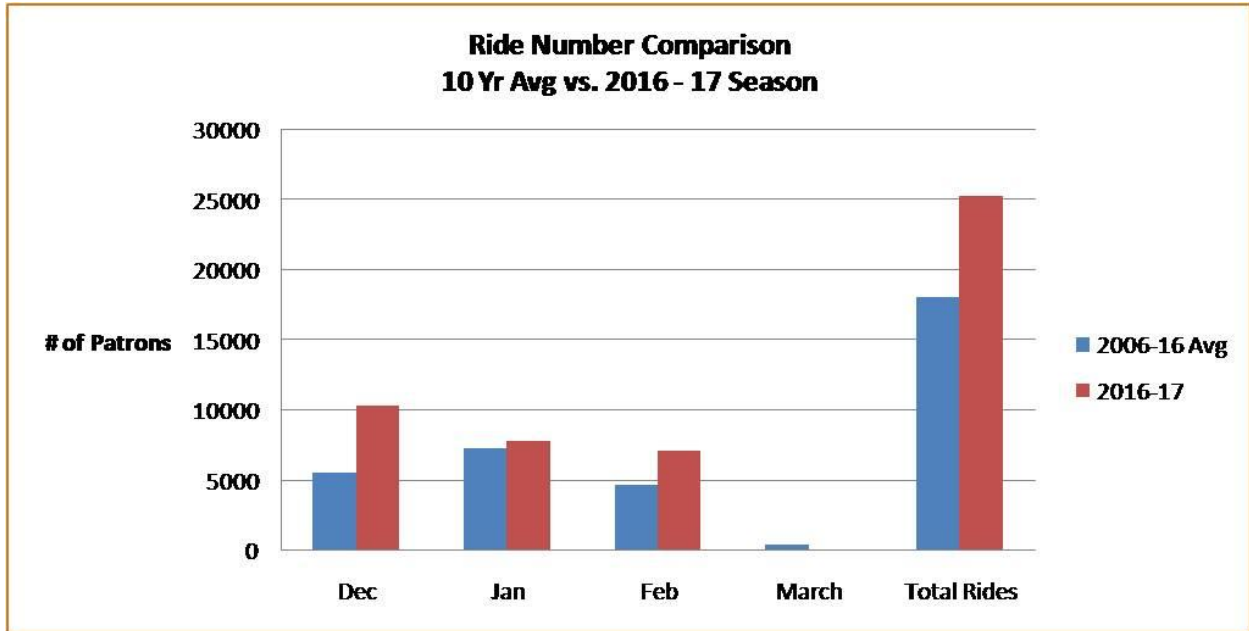


Figure 4: 10 year average ride comparison with 2016 season.

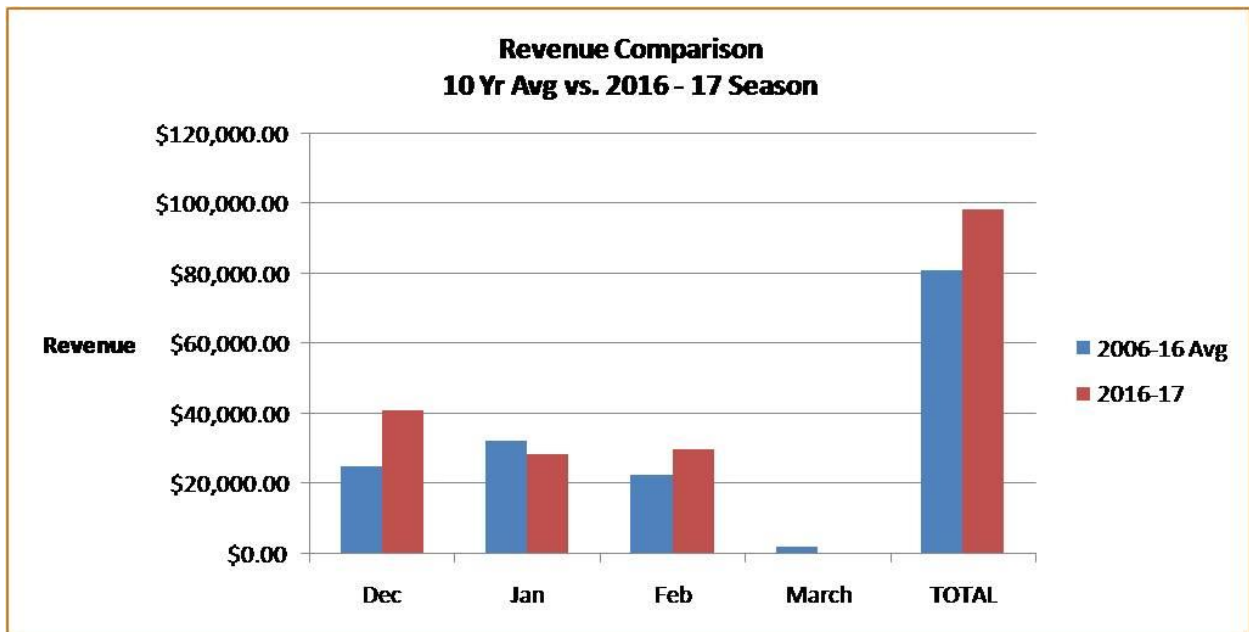


Figure 5: 10 year average revenue comparison with 2016 season.

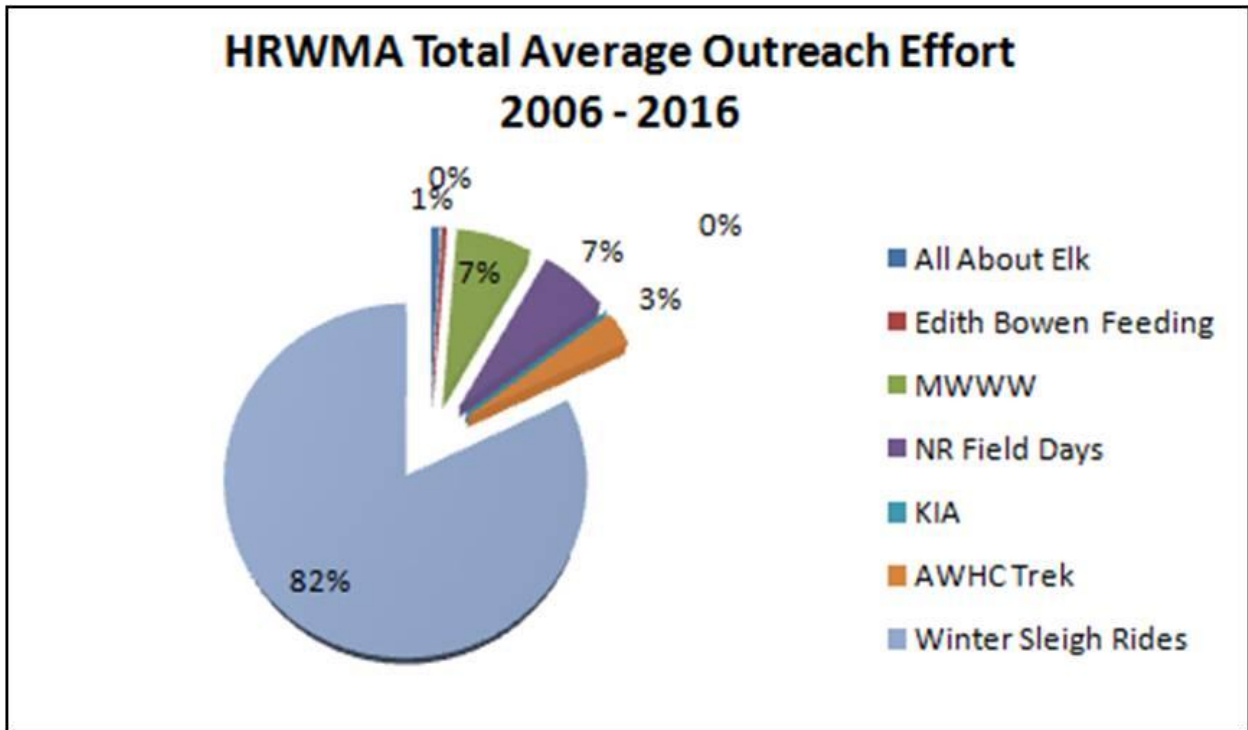


Figure 6: Percent of average outreach effort over the last 10 years.

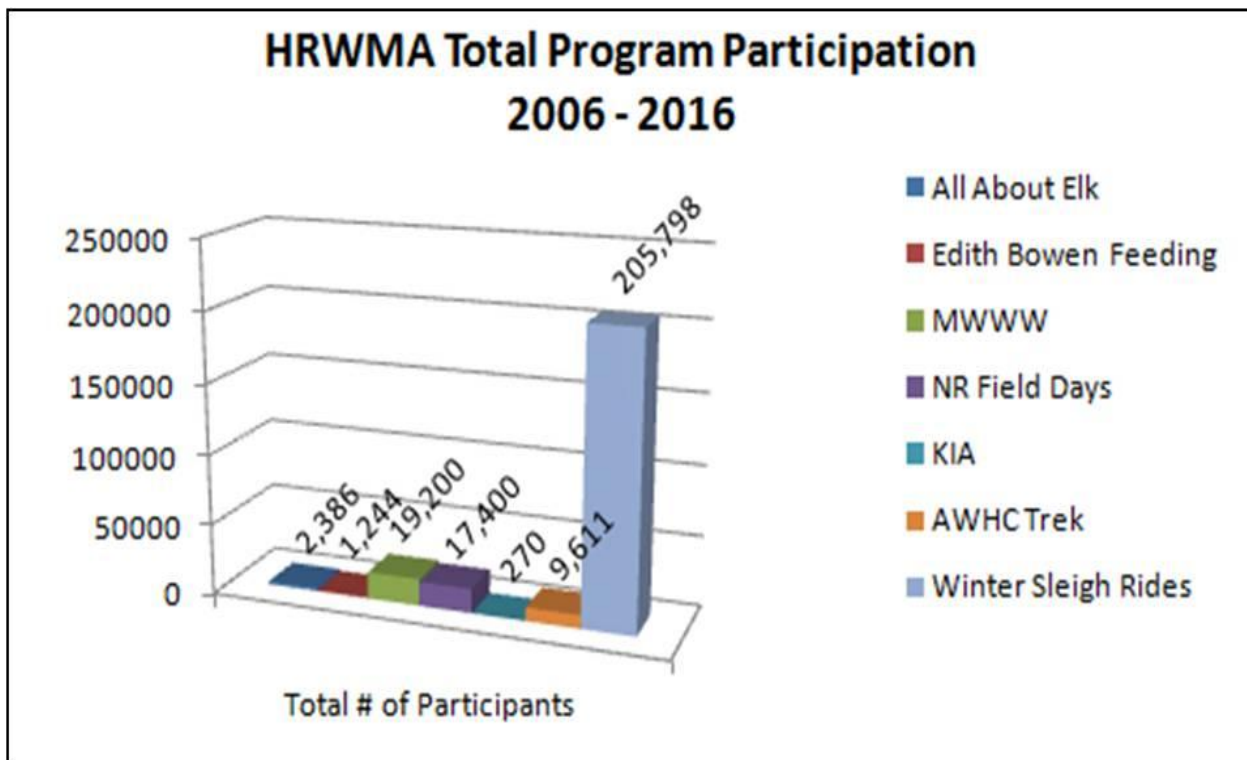


Figure 7: Total participation in HRWMA outreach programs over 10 years. Most programs have begun within the 10 year period.

Appendix B

Outreach Program List

Education Programs

A. Community Programs/Events

a. *Elk Festival - annual*

- » Audience: general public
- » Partners: USFS Logan Ranger District, Utah State Parks & Recreation, Stokes Nature Center, USU Water Quality Extension, Hyrum City Youth Council, YHEC, Audubon Society, Willow Creek Free Trappers, Mule Deer Foundation, Rocky Mountain Elk Foundation, Sportsman's Warehouse
- » Funding: \$1,000 from WMA budget
- » Description: Free activities for youth and regular priced sleigh rides through the elk herd.
- » Participation: 700 - 1,200
- » Coordinated/Implemented: WMA Manager and WMA technicians

b. *Hyrum Holiday at HRWMA - annual*

- » Audience: Hyrum City Residents
- » Partners: Hyrum City
- » Funding: Equivalent of driver hours paid for by Hyrum City
- » Description: local community event offering sleigh rides, photos with Santa. Soft opening for HRWMA staff
- » Participation: 500 - 1,200
- » Coordinated/implemented: WMA Manager, Hyrum City Councilman, and WMA technicians

c. *Willy Wapiti's Smoke Pole Biathlon - annual*

- » Audience: general public
- » Partners: UDWR Shooting Sports staff, sponsored by Sportsman's Warehouse.
- » Funding: \$200 from WMA budget for social media promotion
- » Description: A timed muzzleloading/snowshoeing biathlon in Curtis Creek canyon where participants are scored on their speed and accuracy.
- » Participation: 12-20
- » Coordinated/Implemented: WMA Manager, NRO Outreach staff, SLO Shooting Sports staff

B. School Programs (year round)

a. *Mountain Wilds to Wetland Wonders (fall and spring)*

- » Education partnership, created in July 2006 between Bear River Migratory Bird Refuge (BRBR) and HRWMA.
- » Field trip and teacher training experience offered to Box Elder School District Fourth grade. Acts as the fall and spring school program for HRWMA.
- » Funded by Friends of Bear River Bird Refuge group and supported by BRBR and HRWMA with staffing to facilitate the trainings and implementation of the program.
- » Coordinated by WMA Manager and implemented by WMA Information Technicians.

b. *Natural Resource Field Days (fall)*

- » Partnership between Cache County 4-H, USFS Logan Ranger District, Soil Conservation Districts, USU Water Quality Extension, and UDWR.
- » Funded completely through partners, little to no budget expense for HRWMA
- » UDWR hosts, provides lesson plans, and volunteer teaches for the wildlife station.
- » Reaches approximately 1,200 - 1,700 Cache County fourth graders per year.
- » Coordinated/Implemented: WMA Manager and WMA technicians

c. *All About Elk (winter)*

- » Tradition winter school program, includes sleigh ride and 3 half hour activity/learning stations.
- » Stations focus on wildlife adaptations and habitat.
- » Coordinated/Implemented: WMA technicians

d. *Kids in Action (summer)*

- » Partnership between UDWR, Cache County Weed Department, USDA APHIS, and private contractor who manages the grant.
- » Fully funded by science/education grants and USDA Forest Service
- » Annually introduces 20 high school and 50 5th/6th grade students to bio-control and the management of invasive noxious weeds.
- » HRWMA was pilot location and chief developer of lesson plans for this program which has since been adopted by other counties in the state.
- » Coordinated/Implemented: WMA Manager, WMA technicians, and partners.

C. Teacher/Volunteer Workshops and Trainings

a. *MWWW Teacher Trainings*

- » Training sponsored and funded by HRWMA and BRBR through grants in conjunction with the MWWW curriculum.
- » Required for teachers participating in the program

b. *NR Field Days Volunteer Training*

- » Train 60+ pre-service elementary teachers at USU to assist with the teaching during NR Field Days.
- » Partners combine to train students on individual stations

c. *Kids in Action Trainings*

- » Program consist of 2, two day events. On the first day of each event students receive training on identifying invasive noxious weeds and different protocols for dealing with invasive weeds.
- » HRWMA handles the bulk of the training
- » Day 2 is hosted at HRWMA and partners further train and supervise students in the use of scientific equipment.

D. Skills Based Clinics

a. *Spring Strut Turkey Hunting Clinic*

- » Program consists of a single day event, attracting 50-75 participants annually.
- » Instruction is provided by the National Wild Turkey Federation (NWTf)
- » Attendees are instructed in the art of turkey calling using a variety of calls; diaphragm, box, and pot calls. They also learn about decoying and have a Q&A.

b. *Introduction to Muzzleloading*

- » Program consists of a single day event, providing WMA visitors with an opportunity to experience shooting muzzleloaders while supervised.
- » Instruction is provided by the Willow Creek Free Trappers, a local mountain man group.
- » Participants are instructed in the proper handling, loading, and firing of muzzleloading rifles.

Appendix C

Statements of Value from Partners



AMERICAN WEST
HERITAGE CENTER

Experience it!

The American West Heritage Center's (AWHC) Willie Handcart Experience (handcart trek experience) program is planned and implemented in partnership with the Utah Division of Wildlife Resources - Hardware Ranch. The AWHC Handcart Trek experience is our living history 3-day, 2-night living history reenactment for youth, adults, and families to pull handcarts at Hardware Ranch as they re-enact Utah's unique migrational history. This is a non-denominational, educational program which allows two to three thousand patrons a year to experience a historically accurate handcart trekking experience and connect with the history of the State of Utah. The program has developed over the years to the point where now, we support specially designed and manufactured ADA handcarts allowing for access to certain areas of the trek by individuals with special needs. These carts allow those who may not have been able to participate in the program before to do so at a high level of participation. The AWHC is a 501 C(3) organization whose mission is based on hands-on, educational living history outreach focusing on Utah regional history between 1820-1920. Over 65,000 visitors come to the AWHC annually to experience our historically based outreach and educational programs.

4025 South Highway 89-91, Wellsville, Utah 84339 · P 435-245-6050 · F 435-245-6052 · www.awhc.org

A project of the American West Heritage Foundation in cooperation with Utah State University



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October 18, 2017

Brad Hunt
Hardware Ranch WMA Manager
Utah Division of Wildlife Resources

Dear Brad,

Edith Bowen Laboratory School fifth and sixth graders work in small groups (6-8 students at a time) with wildlife biologists and ranch managers at Hardware Ranch three days a week in January and February each year. During their visit each day, our students feed roughly 6,000 pounds of hay to 600 elk, assist with trapping elk, and observe the tagging and testing operation. As an added benefit, our students are exposed to various careers in the Natural Resources field. In the afternoons, we spend time teaching writing, science, and math concepts in the visitor center and while we explore the vicinity on snowshoes.

These experiences provide purpose and application for our academic standards and bring an element of joy into the learning process. Our students learn about temperature inversions, chemical and physical changes, Lake Bonneville, wildlife habitat, microorganisms (with brucellosis as a focus), snow science (what causes avalanches?), and hydro-electricity (on the drive up the canyon). Perhaps most importantly, in an electronic world, our students are unplugged and make deep connections to the natural world which fosters a new generation of youth who value and advocate for Utah wildlife and landscapes. Each winter our students buck more than 100,000 pounds of hay off the sleigh and provide more than 300 hours of volunteer service at Hardware Ranch. We are tremendously grateful for this educational symbiotic relationship with Hardware Ranch and hope it perpetuates for years to come.

Sincerely,

Eric J. Newell
Director of Experiential Learning and Technology





HYRUM CITY

60 West Main • Hyrum, Utah 84319
Phone (435) 245-6033

Stephanie Miller, Mayor
Council Members
Kathy Bingham
Jared L. Clawson
Paul C. James
Craig L. Rasmussen
Aaron Woolstenhulme
City Administrator
Ron W. Salvesen
Recorder
Stephanie B. Fricke
Treasurer
Todd Perkins

June 28, 2017

Hyrum City has always been a gateway to those going to Hardware Ranch. Many think of Hyrum City & Hardware Ranch together. We appreciate the recreational opportunities Hardware Ranch offers to our residents and others. Snowmobiling, 4 wheeling, hiking, biking, horseback riding, etc. The sleigh rides with the Elk has long been a tradition for our residents to enjoy.

Stephanie Miller

Hyrum City Mayor

DRAFT

**Hardware Ranch
Wildlife Management Area**

- Facilities Management Plan Summary -

July 2018

Prepared by:

Utah Division of Wildlife Resources

Northern Region

**515 East 5300 South
Ogden, Utah 84405**



Facilities Overview

Each year a Division of Facilities and Construction Management (DFCM) auditor visits HRWMA and evaluates the overall state and cleanliness of the facility. HRWMA is tasked with maintaining a greater than 90% rating on all of its facilities. Significant lack of manpower and funding have been identified in the annual audit reports as contributing causes to the low rating and a few of the older buildings have been recommended for removal. In April of 2017, UDWR Northern Region leadership and the HRWMA manager met with the region's DFCM representative and discussed the future of facility maintenance at Hardware Ranch. DFCM recommended that UDWR conduct a Facility Program Study of its own concerning Hardware Ranch WMA. Such a study will provide an assessment of the facility's current state and ability to meet the mission of HRWMA, and address potential costs associated with improving HRWMA facilities to meet management plan goals and objectives, and estimated cost to reach the desired end goal for the facilities.

In September 2017, a request for a facility study was submitted but was not ranked high enough in priority to be given approval to move forward.

Existing Capital Improvements - Facilities

Hardware Ranch WMA encompasses 14,332 acres of land, along with major facilities including 13 buildings, 115,000 square feet of paved parking lots and sidewalk, 33 miles of fence, 2 miles of waterlines, 8 miles of electric transmission lines, and many miles of roads and trails. Some of the buildings, fences and electric lines are now 50 years old.

Safety is the foremost operational concern at HRWMA. The thousands of annual visitors, coupled with aging facilities, and the necessity to operate with the public during extreme cold temperatures and snow accumulation, all impose significant safety considerations. The buildings are in generally good condition, but are showing age and require increasing repair and/or replacement.

Facilities

The facilities on HRWMA include 3 living quarters, barns, hay shed, workshop, visitor/education center, classroom/office, and sleigh shack. Most of the buildings date from the 1970's and 80's. Table 1 combines a list of all facilities to date located at HRWMA.

Table 1. WMA Facilities as of November 2017.

Building	Description	Condition	Current Use	Comments
Residence #1	2,600 sq-ft brick rambler	Excellent	Residence/Office	Supports management of WMA habitat and programs
Residence #2	1,850 sq-ft	Good	Residence	Outreach management & WMA maintenance
Residence #3	960 sq-ft	Good	Seasonal Use, possible camping access monitoring	Supports Outreach programs

Building	Description	Condition	Current Use	Comments
Bunkhouse	Unit 1 - 350 sq-ft, 1 bdrm	Condemned	N/A	No use permitted
	Unit 2 - 700 sq-ft, 2 bdrm	Condemned	N/A	No use permitted
Visitor Center	5,600 sq-ft	Good	Winter outreach & other Ed. programs	Supports sleigh rides/outreach programs
Auxiliary Bldg.	1,600 sq-ft	Fair	Office/Classroom	Admin & Outreach efforts
Tack Shed	800 sq-ft	Excellent	Harness Storage	Supports sleigh rides
Breezeway Shed	800 sq-ft	Excellent	Fuel, Materials storage	Supports maintenance
Breezeway	1,800 sq-ft	Excellent	Work area/storage	Supports maintenance & equipment
Shop	850 sq-ft	Good	Tools/welding	Supports maintenance
Barn	5,000 sq-ft	Good	Storage	Supports maintenance & hay
Storage Barn	2,500 sq-ft	Fair	Hay	Supports hay & feeding
Hay Shed	5,400 sq-ft	Excellent	Hay	Supports hay & feeding
Sleigh Shack	240 sq-ft	Fair	Employee Area	Supports sleigh rides
Well House	200 sq-ft	Excellent	Well head & Pump	Supports WMA Operation

1. Residence #1

This building has historically being occupied by the WMA manager when permitted to live on site. Currently it is vacant and used occasionally when work requires the manager to spend the night or work late. It has running water, flushing toilets, and working showers. It was built in the 1970's.

2. Residence #2

Has traditionally been occupied by the Assistant Manager when this position was filled and permitted to live on site. It was occupied for a time by the contractors that operated the sleigh rides and cafe during the 1980's and 90's. It is in good condition. It is vacant and had a few leaks resulting from the hook up of the new well which operates at higher pressures than the previous water source.

3. Residence #3

Referred to as the Seasonal Cottage, this building has served as housing for seasonal employees when HRWMA used to have year round seasonal staff. Presently it is habitable and has running water and heat.

4. Bunkhouse

The bunkhouse was built in the 1950's and is in serious disrepair. Due to its location along Curtis Creek it is susceptible to flooding from high water and beaver activity. It served as a bunk area for UDWR personnel and contractor staff while conducting winter outreach. DFCM and the UDWR Facilities Coordinator both agree this building is CONDEMNED and should not be used. Its demolition is recommended.

5. Visitor Center

The Visitor Center (VC) is our most well known and used facility. The VC, built in 1972, recently underwent structural repair in the early 2000's. This building is used to welcome over 30,000 people annually to Hardware Ranch WMA. It is the hub for winter outreach, spring skills based education clinics, and summer and fall education classes. Plans are in motion to improve the educational displays in FY2019 and bring a much needed face lift to the Visitor Center.

6. Auxiliary Bldg.

This building serves as both the classroom and office of HRWMA. It was built by the contractors who decided to also rent snowmobiles and service them. The construction was undertaken without UDWR or DFCM approval. It is not well built and is mouse infested. It is another great candidate for removal.

7. Tack Shed

Serves as storage for all the harness gear and horse care items incidental to the winter sleigh ride program.

8. Breezeway

A covered equipment shed to park the tractor, WMA vehicles, and agricultural equipment to protect them from the weather. This is vitally important in the winter to keep the tractor warm and operational.

9. Shop

Tools and equipment needed to maintain fences and equipment and complete the various jobs and projects around the WMA.

10. Barns

Hardware has 3 main areas to store hay: #1 is the open hay shed where the bulk of the hay is stacked; #2 is the metal storage barn near the corrals; and #3 is a barn built early to mid- 1900's. All 3 are in good to excellent condition.

11. Sleigh Shack

Located at the sleigh line, this building provides an area for winter staff to stay warm. Tickets used to be sold from the shack and people still come to it looking for tickets first. It has not been well taken care of in the past but subsequent years have seen improvement.

12. Well House

A new culinary water system was completed in December 2016, after the old water system was no longer certifiable by the Health Department. The well house is located 300 ft. above the Visitor Center, to the southeast on the mountain. The well itself is 400' deep. The system includes a well house, 5,000 gallon storage tank, pressure reducing vault, and valves and hookups to the buildings. The barnyard is NOT connected to the new system as it only services livestock. Due to the large amount of visitation Hardware receives, the WMA's water system is classified as a Transient Public system and must meet the same water quality standards of a small community. The water is sampled regularly for bacteria, nitrates, and sulfates.

13. Parking lots

There are 5 parking lots on the WMA. The largest is the Visitor Center lot used for parking for various outreach programs and general parking. Near the Visitor Center are 2 lower parking lots along the Laketown Road, which allow overflow parking for winter visitation and summer OHV use. Just north of these lower lots, where the road turns to dirt, is a large lot, with a public outhouse, designated for OHV use. This lot, and outhouse, is maintained by the Utah Division of State Parks and Recreation, and serves as the Hardware Ranch Trailhead as it pertains to OHV and snowmobile use. The final parking lot is located at the entrance to the barnyard.

14. Kiosks

There are 2 kiosks on the WMA. One is located in the lower parking lot that overlooks the sleigh line and large meadow complex. The second is located in the gravel lot and was erected by the Utah Division of State Parks and Recreation.

Power Corridor

Electrical power for the visitor center, residences, and WMA out buildings is provided by Hyrum City Power from the hydroelectric dam in Blacksmith Fork Canyon via a power line along the SR-101 canyon road. Maintenance of the distribution system is the responsibility of HRWMA from the edge of the WMA property to WMA facilities, and includes over 8 miles of transmission lines. The line that is currently in use is so old it is not even produced anymore. The whole system needs to be updated from the power plant to the WMA facilities. Telephone and internet services to HRWMA are supplied via microwave transmitter and are distributed over land lines and wireless systems. The communications system on the WMA has been significantly improved since 2015 when the old radio relay was replaced with a digital microwave relay.

Facilities Goal, Objectives, and Strategies

A detailed breakdown of goals & objectives pertaining to facilities management can be found in the Executive Summary.

**Hardware Ranch Wildlife Management Area
Habitat Management Plan**

RDCC Project Number: #63102

Habitat Council Review Date: 02/22/2018

RAC Review Date: 07/25/2018

Director's Approval: _____ Date: _____

Michael Fowlks, Director

DRAFT

EXECUTIVE SUMMARY

Howard Slough Waterfowl Management Area Habitat Management Plan Summary

July 2018

Primary Purpose of WMA

The primary purpose of the WMA is to: preserve, restore, and enhance both aquatic and terrestrial habitat for wildlife; increase wildlife populations to meet wildlife management objectives; conserve, protect, and recover sensitive wildlife species and their habitats; protect cultural resources; and provide for recreational opportunities that are compatible with the purpose of upland and wetland ecosystems.

Background

In 1958, the Howard Slough Waterfowl Management Area (HSWMA) was created and habitat enhancements completed to provide improved nesting, resting and feeding habitat primarily for waterfowl, wading birds and shorebirds. The WMA is located west of West Point in Davis County, along the eastern shore of the Great Salt Lake. It is situated between the south boundary of Ogden Bay WMA and the Davis County Antelope Island Causeway.

Prior to UDWR management, the property was subject to unstable habitat conditions due to unreliable seasonal water sources and periodic drought conditions, with surrounding wetlands being drained for agriculture and development. UDWR also wanted to provide an area for wildlife-related public recreation. Currently, the WMA is comprised of approximately 2,300 – 3,920 acres, which fluctuates depending on shoreline levels of the Great Salt Lake, and supports highly developed, manageable and productive wetlands. This acreage includes 342 acres owned by UDWR in fee title, with the remaining approximately 3578 acres within the Great Salt Lake, owned and administered by the Utah Division of Forestry, Fire and State Lands, and managed by UDWR for wildlife purposes (Utah State Code 23-21-5).

Wildlife Species

As a part of the GSL wetland ecosystem, HSWMA is attractive to numerous migratory and summer resident wildlife species. A total of 200 bird species have been documented on the WMA, and of these, 57 species have been observed nesting within the boundaries of the management area.

Howard Slough WMA provides important nesting and brooding habitat for a variety of waterfowl and shorebirds, and serves as feeding and staging habitat for millions of migratory birds that fly over the Great Salt Lake each year as part of the Pacific and Central flyway migrations. The wide array of avian species present on the WMA in all seasons, ranging from

large birds, such as the white pelican and tundra swan, to small birds such as the least sandpiper, may be attributed to the extensive food resources that are available. Bald eagles utilize the WMA, and nearby Ogden Bay WMA, for winter loafing and foraging. Principle waterfowl that inhabit the WMA include Canada geese (5,000), tundra swan (10,000), and a variety of “puddle” ducks such as the northern pintail, mallard, cinnamon teal, green-winged teal, wigeon, gadwall, northern shoveler. Diving ducks also found on the WMA include: redhead, canvasback, ruddy, scaup, goldeneye, ring-necked, and bufflehead. Annual duck numbers can range from 250,000 – 300,000 birds over a typical year.

The WMA is also part of the Ogden Bay area of the GSL which has been recognized hemispherically (by the Western Shorebird Reserve Network site) and nationally (by the National Audubon Society; Important Bird Area) for its significant value to millions of avian waterbird species.

Fourteen species of greatest conservation concern from the Utah Wildlife Action Plan and/or ten species on the Utah sensitive species list, have either been observed on the WMA or are suspected to potentially occur given the presence of particular habitats.

Habitats

The WMA contains a variety of habitat types including open fresh and salt water areas, wetland, mudflat, grassland, and upland areas. The quantity of each of these habitat areas varies with the elevation of the Great Salt Lake, but a tentative estimate based on 3920 acres of manageable land includes: upland habitats comprise approximately upland 165 acres (4 %); open, shallow fresh water habitats comprise approximately 550 acres (14%); and emergent wetland and wet meadow habitats account for 2665 acres (68%); playa and mudflat habitats account for 510 acres (13%); and all other non-habitat types comprising less than 1% of the WMA.

Two Wildlife Action Plan key habitat types are found on the WMA: emergent marsh and open water habitats.

Habitat Concerns

Water quantity and quality are concerns for the WMA. In order to keep impoundments and wetlands at optimal condition, there must be a sufficient supply of water throughout the year. Current water flows are not sufficient during the summer months or in the fall to maintain WMA wetlands in good condition. Water quality is also concern with periodic increases in sedimentation and potential contaminant inflow, as the WMA is at the bottom of the watershed.

Additional concerns include noxious and invasive weeds which are abundant on the WMA and include: common reed (*Phragmites*); purple loosestrife; salt cedar; hoary cress; perennial pepperweed, thistle, and poison hemlock. These weeds can out-compete more desirable vegetation and require constant attention. Due to recent treatment efforts, approximately 80% of the *phragmites* on the WMA has been eliminated.

Although much effort has been dedicated to improving habitat conditions and implementing a predator/nuisance wildlife trapping program, predation of nesting birds still occurs. Undesirable

fish species, such as carp, migrate to the ponds and cause destruction to naturally occurring aquatic invertebrates and aquatic vegetation. Annual eradication efforts are necessary.

Access Plan

The WMA is open annually from the Thursday before the youth waterfowl hunt, until the day after the goose hunt. Typical recreation includes: waterfowl hunting; wildlife viewing; photography; hiking; biking; picnicking; scenic driving; and dog training. Non-consumptive visitors are welcome, although UDWR recommends precautions during the hunting season.

There are no formal developed dog training areas. However, dog training is permitted. Limited camping is permitted only in the 2 WMA parking areas, in areas away from the entrances to prevent congestion. There are no camping amenities and no campfires are allowed. Camping is permitted as posted. One outhouse-type restroom facility is provided for public use at the main parking area.

Visitors may not possess a firearm, except during waterfowl hunting season and use is limited to shotguns with nontoxic steel shot. Hunting is allowed anywhere on the WMA during waterfowl season, except those areas within 100 feet of any vehicle traveled roads or parking lots as per posted signs. For hunter and vehicle safety, vehicles must park in the designated parking areas. Parking on the entrance road is strictly prohibited.

Canoes and smaller motorized boats are permitted in river channels or in impoundments, and may launch from the boat ramp located off the interior parking area. Airboats are restricted to the Great Salt Lake shoreline area, west of the diked impoundments. An airboat launch is available at 9500 West off 900 South at the Ogden Bay WMA.

Maintenance Activities

All fences and gates will be maintained to protect habitat. Access roads and parking lots will be maintained and appropriate signs will be in place to communicate rules and regulations of the WMA. Managers will replace regulatory signs as needed. Noxious and invasive weeds will be monitored and controlled using herbicide applications, cattle grazing, and water management. Water control structures will be maintained and replaced when necessary. Water will be maximized for beneficial use.

Habitat Improvement

Existing wetland resources will be maintained, enhanced and expanded where possible and invasive weeds will be aggressively controlled. Shelter belts, tree and shrubs will be maintained; Predators and undesirable fish populations will be controlled. Additional planned habitat projects include:

- Summer/Fall 2018: Replace 10 headgates which are failing.
- Fall 2018: In the Hooper Hot Springs unit, plant a new area of 10 acres of perennial grass and forb habitat.
- Continue ongoing *phragmites* control.
- Continue efforts to perfect water right # 31-5138.
- Rebuild 3 miles of the dike. The adjacent channel would also be cleaned at the same time to utilize the sediments on the dike.

DRAFT
Howard Slough
Waterfowl Management Area
-Habitat Management Plan-

July 2018

Prepared by:

Utah Division of Wildlife Resources

Northern Region

515 East 5300 South
Ogden, Utah 84405



DRAFT
Howard Slough Waterfowl Management Area
Habitat Management Plan
July 2018

I. Background Information

Property Description

The Howard Slough Waterfowl Management Area (HSWMA) is an approximate 3920 acre parcel of man-made wetlands located west of West Point in Davis County, Utah, along the eastern shore of the Great Salt Lake (GSL). It is more specifically located between the south boundary of the Utah Division of Wildlife Resources (UDWR) owned Ogden Bay WMA and the Davis County Antelope Island Causeway (Appendix A). This acreage includes 342 acres owned by UDWR in fee title, with the remaining approximately 3578 acres within the Great Salt Lake, owned and administered by the Utah Division of Forestry, Fire and State Lands, and managed by UDWR for wildlife purposes (Utah State Code 23-21-5).

Howard Slough WMA lies within the following full or partial sections: Township 5N, Range 3W, Sections 26, 27, 28, 34, 35 & 36; Township 4N Range 3W Sections 1, 2 & 12; and Township 4N, Range 2W Section 7. Utah Code, Section 23-21-5, authorizes the DWR to utilize all or parts of 36 townships of sovereign lands below the 1855 Great Salt Lake meander line for the “creation, operation, maintenance and management of wildlife management areas, fishing waters, and other recreational activities.” A more complete legal description of the fee title lands is listed in Appendix B.

For UDWR management purposes, the WMA is divided into two units; the larger “Main Unit” comprises the south portion of the WMA (including the South and North Impoundments), and the more recently acquired “Hooper Hot Springs Unit” which covers the north portion of the WMA. Private lands border the WMA to the east. The Ogden Bay WMA, which is often managed contiguously with Howard Slough WMA, borders to the north. Mudflats and GSL shoreline managed by the Utah Division of Forestry, Fire and State Lands are on the west and south borders.

Land Acquisition History

Howard Slough WMA was officially created in 1958 primarily to enhance and develop habitat for waterfowl and other wildlife, and to provide the public with waterfowl hunting opportunities along the Great Salt Lake shoreline. In 1957-1958, using funds from the United States Fish and Wildlife Service, Wildlife and Sportfish Restoration Fund (Federal Aid Project #W-14-L-10), along with Utah State hunting license revenues, initial acquisition began with the purchase of the Aurthur & Clara Fowers property (41.31 acres) and the Vern & Reta Parker property (3.34 acres).

In 1990, Howard Slough WMA expanded northward to include an additional 297 acres, now known as the Hooper Hot Springs Unit.

Future acquisition of surrounding wetland and upland habitats is anticipated as land and funding are available. A summary of the land acquisitions are included in the table below and further legal details are contained in Appendix B.

Table 1. Howard Slough WMA: Land Acquisition.

Date Acquired	Previous Owners & Deed Reference #	Acquisition Method	Acreage	ROW's & Water Rights with Property	Funding*
1957	Arthur & Clara Fowers (#168141)	Fee Title Purchase	41.30	None	FA (W-14-L-10), SHL
1958	Vern & Reta Parker (#183661)	Fee Title Purchase	3.34	None	FA (W-14-L-10), SHL
1990	Arthur and Wilma Fowers (aka, Hooper Hot Springs) (#885923)	Fee Title Purchase	297.79	ROW, Water Rights: 31-2475 & 31-4623	FA (W-14-L-10), DU, NAWMP

* FA (Federal Aid), SHL (State hunting license revenue), NAWMP (N. American Waterfowl Mgmt. Plan Funds), DU (Ducks Unlimited), NA (Not Applicable)



Howard Slough WMA. Photo taken Oct. 31, 2017, looking west; Westpoint City in foreground.

Encumbrances

- **Minerals**

All rights to mineral, oil and gas were retained by previous landowners, except those rights to sand and gravel, which are held by the Utah Division of Wildlife Resources.

- **Water rights/shares**

Upon acquisition, creation and development of the WMA, the following 7 water rights, which total 49.0 cubic feet per second (cfs), were filed by UDWR to supply the WMA with water to fill man-made marshes and impoundments that would provide quality habitat for nesting birds and other wildlife. These water rights are detailed in the table below. Complete records of all water rights are on file with the Utah Division of Water Rights. All water rights have been perfected, except for 31-5138.

- In 1990, as part of negotiations for the Hooper Hot Springs Unit property purchase, the UDWR acquired an additional 5 cfs in water rights # 31-2475 (3.0 cfs) and # 31-4623 (2.0 cfs).
- In August 1994, the UDWR filed water right # 31-5138 (10.0 cfs) to make claim to excess water from surface run-off, irrigation return flows and existing storm drains entering Howard Slough WMA that would be used for irrigation and waterfowl propagation purposes. This water right has not yet been perfected.

Table 2. Howard Slough WMA Water Rights

Water Right #	Name	Flow (cfs)	Source	Priority Date	Period of Use*
31-2475	UDWR	3.0	Drain	08/22/1950	I: 03/01 to 10/01
31-2627	UDWR	25.0	Howard Slough Stream	05/21/1957	I: 04/01 to 11/31 W: 01/01 to 12/31
31-2645	UDWR	2.0	Drain	11/06/1958	O: 01/01 to 12/31
31-2646	UDWR	2.0	Drain	11/06/1958	O: 01/01 to 12/31
31-2647	UDWR	5.0	Drain	11/06/1958	O: 01/01 to 12/31
31-4623	UDWR	2.0	Hooper Hot Springs	00/00/1903	I: 04/01 to 10/31 S: 01/01 to 12/31
31-5138**	UDWR	10.0	Run-off and Surface Drains	08/10/1994	I: 01/01 to 12/31 O: 01/01 to 12/31

* S (Stock Water), W (Wildlife), O (Other: Wildlife Propagation), I (Irrigation)

** Water right approved, but not perfected; Difficulty in getting 10 cfs; Proof due date: 7/31/19.

- **Easements/ROWS/MOUs**

- Joseph and Louise Simpson entered into an agreement with the Utah State Department of Fish and Game (now UDWR) in 1960 to erect a fence in a straight line through an otherwise curvilinear boundary which occurred between both properties, and more or less followed the Great Salt Lake meander line. Permission was granted for the UDWR to erect the fence along a predetermined more direct route to provide for more efficient management. Each party granted the other the right to develop and utilize one another's property in accordance with their own if it were to be situated on the opposite side of the fence; however

no exchange of official land ownership occurred. We have not been able to locate a copy of this agreement. A new formal agreement to document this fence location will be developed.

- Reed and Lois Naisbitt and the Utah State Department of Fish and Game (now UDWR) created a Right-of-Way agreement (#173630) dated November 23, 1957 wherein the Naisbitts granted the UDWR a perpetual easement and right-of-way for the construction and maintenance of an entrance road into Howard Slough WMA. The UDWR agreed to construct and maintain a barbed wire fence that would line both sides of the right-of-way and contain gates for Naisbitt to access their private property. The UDWR also agreed to install cattle guards and gates at the north and west sides of the right-of-way. If deemed necessary by mutual agreement, UDWR agreed to place a culvert across the right-of-way at the convenience of the Naisbitts.
- The Bay View Gun Club (BVGC) and the UDWR have a verbal agreement for the south-eastern boundary fence of the WMA. The BVGC's old existing fence line was located through marsh habitat and was "removed" by the Great Salt Lake (GSL) during the flood years of the 1980's. UDWR and the BVGC reached an agreement to move the fence to the east, and place it on top of a bluff where it will be protected from future GSL high water events. The end result is that a portion of the WMA is contained within the BVGC's boundary and is adjacent to WMA managed lands. A new formal agreement to document this fence location will be developed.

- **Grazing**

Grazing occurs on HSWMA on an annual basis for achieving vegetation and weed management goals and objectives to improve wildlife habitat. This grazing primarily focuses on the invasive plant *Phragmites*, attempting to limit the extent and vigor of the plants and stands.

Grazing of Division land is strictly regulated under the Division Land Use Rule (R657-28) and may only be done under the authorization, provisions, and authority as specified in a grazing permit issued by UDWR. A grazing management plan containing updated grazing policies is currently being developed and will be released in 2019. Grazing on HSWMA is open to public bid and will follow the official bid and permit process as per UDWR Lands Use Rule R657-28. The grazing will be done using a grazing prescription to achieve specific goals and objectives. These goals and objectives will be described in a grazing contract that will contain all applicable restrictions, limitations and terms of the agreement. The grazing management plan will be appended, by reference, to this HSWMA HMP.

Historic Uses

Historically, Native American Fremont Indians utilized the general WMA area as an affiliation camp and burial site. In an 1843 account from the explorer John C. Fremont, he described a scene with thousands of waterfowl around the GSL. Around 1850, the first white settlers arrived to find a receded Great Salt Lake with nearby abundant green pasture lands containing meadow

sedges, cottonwoods, and black willows along the nearby Weber River delta, which provided a plentiful food supply for their cattle to graze. As settlers began to farm in the Ogden vicinity, fresh water from the area was diverted and used for irrigation of crops, depriving the area's wetlands of their previously natural volume of water. In addition, duck hunting became a popular sport in the early 1900s and several private hunting clubs were established in the area. Since its creation and development beginning in 1958, the HSWMA wetlands have been rehabilitated and the area is presently used as nesting, resting, and feeding habitat for waterfowl and other shorebirds. In addition, it is a popular waterfowl hunting and recreation site for the public.

Purpose of Division Ownership

Howard Slough WMA was established both with fee title purchase and with land set aside by the State of Utah for wildlife use to assure that quality habitat exists and is maintained indefinitely. It is managed primarily for waterfowl and shorebirds, but ultimately is managed to preserve, restore, and enhance both aquatic and terrestrial habitat for wildlife, protect cultural resources, and provide for recreational opportunities that are compatible with the purpose of upland and wetland ecosystems.

Key Wildlife Species Occurring on the WMA

Howard Slough WMA provides important nesting and brooding habitat for a variety of waterfowl and shorebirds, and serves as feeding and staging habitat for millions of migratory birds that fly over the Great Salt Lake each year as part of the Pacific and Central flyway migrations. The wide array of avian species present on the WMA in all seasons, ranging from large birds, such as the white pelican and tundra swan, to small birds such as the least sandpiper, may be attributed to the extensive food resources that are available. An abundance of bald eagles utilize the WMA, and nearby Ogden Bay WMA, for winter loafing and foraging. Principle waterfowl that inhabit the WMA include Canada geese (5,000), tundra swan (10,000), and a variety of "puddle" ducks such as the northern pintail, mallard, cinnamon teal, green-winged teal, wigeon, gadwall, northern shoveler. Diving ducks also found on the WMA include: redhead, canvasback, ruddy, scaup, goldeneye, ring-necked, and bufflehead. Annual duck numbers can range from 250,000 – 300,000 birds over a typical year.

As a part of the GSL wetland ecosystem, HSWMA is attractive to numerous migratory and summer resident wildlife species. A total of 200 bird species have been documented on the WMA, and of these, 57 species have been observed nesting within the boundaries of the management area.

Prior to the flooding in the 1980s, the marshes of the GSL, including the Howard Slough WMA, were globally significant for the nesting and production of redheads. According to *Ducks, Geese and Swans of North America* (Belrose, 1942),

“The greatest concentration of redheads in North America occurs in the marshes adjacent to the east and north sides of the Great Salt Lake. The bulk of Utah's 130,000 redhead breed there, a density of 355 birds per square mile of wetlands.”

While it is unknown exactly why redheads no longer use the GSL in such large numbers, UDWR biologists believe the biggest reason for this change was the flood as it influenced where the birds went for about 10 years, and during that time, they started using other areas. Their return

has likely been influenced by the changes to the GSL marshes. While UDWR has made significant strides on our WMAs, much of the lake remains changed from what it once was. Prior to the flood, there were tens of thousands of acres of bulrush/open water areas on the eastern side of the lake. Now, many of those areas are dominated by *phragmites*. We've also had relatively poor water years since the early 90's which have changed the system as well.

In 1991, the Western Hemisphere Shorebird Reserve Network (WHSRN) designated the entire Great Salt Lake area as a “Western Hemisphere Shorebird Reserve” due to the wide expanse of birds (approximately 5,000,000 birds representing 257 species) that utilize the wetland and open water habitats along their migratory journey. WHSRN’s mission is to conserve shorebirds and their habitats through a network of key sites across the Americas. To meet the criteria as a “hemispheric site”, the location must have 1) at least 500,000 shorebirds annually or 2) at least 30% of the biogeographic population for a species present.

The Great Salt Lake, Ogden Bay area, including the Howard Slough WMA and surrounding environs, has also been designated as a Globally Important Bird Area (IBA) by the National Audubon Society (#UT03).

In addition, there are several noteworthy avian species which use the GSL, with many of these species identified in the Howard Slough WMA IBA documentation. The numbers represent the entire GSL. These species include:

- Wilson's Phalarope: 533,000 (largest staging concentration in the world, Jehl 1988)
- American Avocet: 250,000 (many times higher than any other wetland in the Pacific Flyway, Shuford et al 1994)
- Black-necked Stilt: 65,000 (many times higher than any other wetland in the Pacific Flyway, Shuford et al 1994)
- White-faced Ibis: 27,000 breeding adults (20% of western breeding population in the United States, Cavitt et al 2014)
- California Gull: 160,000 breeding adults (world’s largest breeding population, Robinette et al. 1993; 275,000 peak period count during GSL Waterbird Survey, Paul and Manning 2002)
- Eared Grebe: 4,700,000 (one of two large staging populations in North America, at times, with over half of continental population, Neill et al 2015)

A complete list of Howard Slough WMA wildlife species, an avian checklist, and species of conservation concern/state sensitive species is available in Appendix D.

Public Recreation Opportunities and Restrictions

The Howard Slough WMA offers a variety of recreational opportunities. The WMA is most known for its waterfowl and pheasant hunting, although some visitors also enjoy wildlife viewing, photography and dog-training. The WMA averages approximately 450 hunters on the opening day of the waterfowl season (60-80 vehicles). For more information and a map of access facilities, please see the Access Management Plan in Appendix C.

Activities on the WMA will be considered according to the UDWR Administrative Lands Rule (R657-28). In general, activities that do not promote or protect the goals and objectives of the unit will be prohibited, specifically those that disturb or harass wildlife and their habitats.

Additional recreational and restriction information includes:

- The WMA is annually open from the Thursday before the youth waterfowl hunt, until the day after the goose hunt (usually the first Monday in February).
- Typical recreation includes waterfowl hunting, wildlife viewing, photography, hiking, biking, picnicking, scenic driving, and dog training.
- Non-consumptive visitors are welcome; UDWR recommends that they take precautions during the hunting season.
- There are no formal developed dog training areas. However, dog training is permitted.
- Trapping of muskrat, raccoon, fox, skunk, and mink is allowed for permit holders. Permits are obtained through a public draw application process.
- Permits are also required for special use activities on the WMA and must be filed with the UDWR several months in advance to assure proper review and approval (R657-28). Special uses are defined as “specific, non-depleting land uses, including seismic or land surveys, research sites, organized activities, or physical access on division lands.” Any special use must not compromise the primary objective for original property acquisition.
- Limited camping is permitted only in the 2 WMA parking areas, in areas away from the entrances to prevent congestion. There are no camping amenities and no campfires are allowed. Camping is permitted as posted. If resource damage occurs from camping, the camping limit may be further restricted and/or the area may be closed to camping.
- Visitors may not possess a firearm, except during waterfowl hunting season or as authorized by the UDWR, and use is limited to shotguns with nontoxic steel shot.
- Hunting is allowed anywhere on the WMA during waterfowl season, except those areas within 100 feet of any vehicle traveled roads or parking lots as per posted signs.
- For hunter and vehicle safety, vehicles must park in the designated parking areas. Parking on the entrance road is strictly prohibited.
- Canoes and smaller motorized boats are permitted in river channels or in impoundments, and may launch from the boat ramp located off the interior parking area.
- Airboats are restricted to the Great Salt Lake shoreline area, west of the diked impoundments. An airboat launch is available at 9500 West off 900 South at the Ogden Bay WMA.
- Visitors are required to pack out all garbage.
- One outhouse-type restroom facility is provided for public use at the main parking area.

Further information and guidelines can be found in current year waterfowl and upland game guidebooks which are available in hard copy at UDWR offices, where hunting and fishing licenses are sold, or online at <http://wildlife.utah.gov/guidebooks>.

Conservation Partners Involved in Acquisition

Acquisition and management of Howard Slough WMA has been accomplished over time through partnerships and funding from various agencies and organizations. These entities include: the State of Utah; UDWR license revenue funds; U.S. Fish and Wildlife Service, Wildlife and Sportfish Restoration Funds (Federal Aid); and Ducks Unlimited.

Ongoing Partnerships

Howard Slough Waterfowl Management Area faces complex management challenges including the substantial costs of annual management actions, maintenance and improvement of infrastructure, and evaluating management outcomes. To address these challenges, HSWMA will seek opportunities to engage local and regional partners whose goals align with the management objectives of HSWMA, so financial and capacity resources can be leveraged to achieve shared objectives.

The [Intermountain West Joint Venture](#) (IWJV) is a diverse public-private partnership whose mission is to conserve priority bird habitats through partnership-driven, science-based projects and programs. Wetland habitats and resources in the Great Salt Lake Ecosystem have been identified as a high priority for the IWJV. Although the IWJV does not currently provide funding for direct management projects, their Capacity Grants Program may provide opportunities to build partnership capacity to address management projects and science to inform and evaluate management actions. The [IWJV Utah State Conservation Partnership](#) provides a forum and network for entities to identify conservation needs and develop partnerships to build conservation opportunities in Utah. Engaging the IWJV Utah State Conservation Partnership and IWJV staff can help facilitate the development of partnerships and projects important to HSWMA objectives. Potential examples include development of North American Wetland Conservation Act proposals that seek to leverage federal funds with state and private funding sources for wetland protection, enhancement, and restoration. Such grants could be leveraged for HSWMA infrastructure maintenance and improvements, or for treating invasive plants such as *Phragmites*.

Additionally, direct partnerships with non-governmental organizations (NGOs) such as Ducks Unlimited, Delta Waterfowl, Utah Wetlands Foundation, Audubon, and others should be explored to enhance management capacity.

II. Property Inventory

Existing Capital Improvements

- **Roads, Dikes and Trails:** Currently there is/are one mile of entrance road, seven miles of dikes, and one vehicle bridge on the WMA. The entrance road (18 feet wide) and the dikes (12 feet wide, five feet high) are surfaced with a minimum of eight to ten inches of gravel.

In the mid-1980's, Howard Slough WMA was flooded with the highly saline waters of the Great Salt Lake, which caused extensive damage to many of the existing dikes. From 1990-1993, work was done to improve and restore the damaged dikes and other

infrastructure. In the early 1990s, upon acquisition of the Hooper Hot Springs Unit, additional dikes were installed in order to create six impoundments on the new acreage. There are approximately eight miles of foot trails on the WMA, with eight foot bridges in locations where hunters need to cross deep channels and borrow pits to access hunting areas and to retrieve ducks.

- **Fences and Gates:** The WMA contains approximately seven miles of five strand barbed wire fence. Of the seven miles, five miles of fence is on the north and east boundaries of Howard Slough WMA, beginning at the Ogden Bay WMA boundary fence and continuing southward to Syracuse Road. There is no fence on the south boundary as FF&SL property extends to the Antelope Island Causeway. The remaining two miles of fence occurs as two separate one-mile fences that line the WMA entrance road. Fencing agreements exist with some adjacent land owners and further details can be found above in the Right-of-Way and Easement portions of this plan.

In the main parking lot, two metal gates are located on the north and south accesses on the WMA entrance road. These gates are closely monitored and remain locked outside of the annual waterfowl hunting season. Landowners bordering the entrance road share a right of way for access to the lane and possess keys to the applicable gates. Trappers, mosquito abatement and other authorized individuals may temporarily gain access through public entrance gates by obtaining permission and a combination from the WMA manager.

- **Facilities:** Howard Slough WMA has one large parking area divided by a fence. One side of the fence is located at the end of the entrance lane, which is equipped with one boat ramp; and the second is accessed from the interior of the Hooper Hot Springs Unit. There is one entrance sign, ten informational signs and eight boundary signs that govern the area.

Table 3. Howard Slough WMA: Capital Facilities at a Glance

ITEM	AS OF 2018
Entrances	2
Fences	7 miles
Gates	3
Parking Lots	1
Roads and Dikes	7 miles
Nesting Islands	0
Trails/Paths	8 miles
Waterfowl Rest Area	0
Water Control Structures	43 Headgates
Pedestrian Gate Openings	2
Canals and Channels	4.5 miles
Vehicle Bridges	1
Foot Bridges/Channel Crossings	8
Boat Launches	1 (for small craft)
Kiosks	1
Ditches/Channels	20 miles
Signs <ul style="list-style-type: none"> • Entrance • Interpretative • Informational • Boundary/Buffer 	<ul style="list-style-type: none"> • 1 • 0 • 10 • 8
Peregrine Hack Tower	1; Has fallen into disrepair
Buildings/Structures	1 Out house

• **Water Developments:**

Approximately four miles of canals and channels serve to convey water to various locations on the WMA, although distribution to marshes and impoundments is largely accomplished through a dike and head gate system. Seven miles of dikes, averaging 5 feet high and 12 feet wide, were constructed to delineate units on the WMA so that flow volumes arriving at Howard Slough WMA could be regulated and guided to specific areas and utilized to create marshes and impoundments that optimize waterfowl habitat conditions. There are currently 43 head gates installed in the dikes throughout the WMA for water management.

As water arrives, mainly from the Howard Slough stream (which contains natural stream flow and treated effluent from the North Davis Sewer District), it enters a canal along the eastern side of the WMA, and flows into the main eastern dike. This dike then distributes the flows through water control structures to the appropriate locations on the WMA. The other dikes then guide, regulate and/or confine the water to areas with specific

topographic features favorable for marshes and impoundments. Outside of the dike areas, on the south and west edges of the WMA, additional marshes exist where water collects due to natural drainage flow and from nearby culvert water releases.

By 1987, the GSL had risen to an elevation of 4,211.85 feet above sea level and had flooded the entire WMA with several feet of salt water. As quickly as it rose, the lake receded to a level that by late 1989, restoration of capital improvements began. By January 1996, an estimated 70% of the capital improvements had been restored to pre-flood condition. Capital improvements were 100% restored by 2000.

A map is included in Appendix A which details the water control structures and features of Howard Slough WMA.

Water requirements of Waterfowl Marshlands in Northern Utah

In 1959, the Utah State Division of Fish and Game (now UDWR) became concerned about water resources being rapidly developed for agricultural and industrial uses, such that water flowing into the GSL marshes might soon become insufficient to support state and federal waterfowl management areas. To help address these concerns, they entered into a cooperative research study with two departments at Utah State University (USU) to determine methods of computing the amounts of water required to maintain productive marshlands. These USU departments included the Cooperative Wildlife Research Unit and the Engineering Experiment Station (now the Water Research Laboratory).

Study results included relationships that were developed for estimating monthly water requirements based on considerations of evapotranspiration, quality of water, and precipitation. From this relationship, water requirements can be estimated for marshlands under different climatic conditions. The research resulted in the UDWR publication "*Water Requirements of Waterfowl Marshlands in Northern Utah*" (69-12). The study took place at Howard Slough Waterfowl Management Area. Managers of northern Utah WMA's still use the estimation that it takes **one cubic feet per second of water to maintain 100 acres of wetlands through the growing season.**

Cultural Resources

The management area has been previously surveyed for cultural resources which resulted in the identification of several archaeological sites. Prior to conducting any surface disturbing activities, any project site must be surveyed by a qualified archaeologist.

Species of Greatest Conservation Need/Utah State Sensitive Species

On the WMA, there are several wildlife species considered either a Species of Greatest Conservation Need (SGCN from the 2015 -2025 Wildlife Action Plan; Section III of this plan) or a Utah State Sensitive Species (Utah Sensitive Species list, 2017). Some species are found on both lists. These species have been either observed on the WMA, or would be expected to occur given habitats types present on the WMA.

Species of Greatest Conservation Need	Utah State Sensitive Species
American Bittern	American White Pelican
American White Pelican	Bald Eagle
Bald Eagle	Bobolink
Caspian Tern	Long-billed Curlew
Peregrine Falcon	Preble's Shrew
Snowy Plover	Short-eared Owl
White-faced Ibis	Townsend's Big-eared Bat
Burrowing Owl	Burrowing Owl
Little Brown Myotis	
Northern Leopard Frog	
Utah Milksnake	
Least Chub (possible, but unlikely)	Least Chub (possible, but unlikely)
Pilose Crayfish (possible, but unlikely)	
California Floater/Winged Floater	California Floater/Winged Floater

Important Fish and Wildlife Habitats

In the mid 1980's, an abundance of precipitation and snow melt caused the Great Salt Lake to rise, gradually swelling and flooding nearby land with salt water before peaking in 1986 at 4211.86' elevation. Nearly the entire WMA was inundated, which at minimum, temporarily devastated wetland habitat acreage and vegetation, and decreased wildlife usage and public recreation opportunities. However, the GSL typically rises and falls seasonally, annually and over decades. This ever-changing elevation is a normal lake function which contributes to the dynamic water depth, vegetation condition and interspersions of wetland habitats throughout the margins of the Lake area. This dynamic condition provides for the concentrated forage areas, exposed or submerged mud or sand islands, and provides early productive successional stages of mud flat habitat needed for the millions of water birds that visit the GSL.

HSWMA is managed primarily to optimize wetland and upland habitat conditions for waterfowl and shorebirds, although it provides important habitat for other wildlife as well. Nesting, brooding, roosting, loafing, foraging, summering and wintering habitats are available for the variety of resident and migratory avian species that use the WMA. Previously endangered bald eagles frequently use the area, particularly for loafing and foraging during the winter months. The Great Salt Lake and surrounding areas, including the WMA, fall within the pathway of major migration corridors utilized by millions of birds each year (both the Pacific and Central flyways). Over 250 bird species have been documented using the WMA, and of these, 57 species have been observed nesting within the boundaries of the management area. In any given year, the peak fall migration for waterfowl can exceed a quarter million individuals at one time.

A peregrine hawk tower is located on the Hooper Hot Springs unit. This tower has fallen into disrepair and it is being evaluated for rehabilitation, replacement or removal.

There are at least 5 acres of food plots planted annually, primarily for pheasants, although geese will also graze in them in the spring. There are several acres of tree rows/shelterbelts that provide excellent wintering habitat for pheasants.

A list containing wildlife species of conservation concern, an avian checklist, and other terrestrial and aquatic wildlife is available in Appendix D.

Recent habitat improvements undertaken on the WMA include:

- Winter 2017/2018: Project included sediment consolidation and dike rebuilding. Rebuilt 2 miles of the secondary dike located east of the south pond. The channel was also cleaned at the same time to utilize the sediments on the dike.
- Fall 2017: Replacement of 5 headgates.
- Winter 2017/2018: An estimate of an 80% of carp removal from all the Howard Slough WMA ponds.

Utah Wildlife Action Plan

The Utah Wildlife Action Plan (WAP; see additional information in Section III, Management Goals and Objectives), identifies several key aquatic habitats that occur on HSWMA. The WAP includes a statewide threat assessment which identifies threats to each key habitat, and then ranks the impact of that threat (the scope and severity; S&S) according to the number of Species of Greatest Conservation Need that could be affected from that threat. The following acreage values were determined based on 3920 acres of manageable lands. For the HSWMA, these key aquatic habitats and their priority threats include:

- Emergent vegetation habitats: Emergent marsh aquatic key habitats include palustrine (marsh-like) wetlands with emergent vegetation, often associated with groundwater discharge or shallow surface flows. HSWMA is currently managed to create and enhance these key habitats as they provide crucial foraging, nesting and staging habitats for many waterbird species throughout the year. HSWMA provides approximately 2665 acres (68% of the WMA) of emergent marsh and wet meadow habitats.
 - The priority threats include: Drought Conditions (High S&S) and Water Allocation Policies (High S&S).
- Open water habitats: Open water aquatic key habitats include perennial bodies of standing water, including natural lakes, reservoirs and ponds. The majority of open water habitats on HSWMA have been created through the construction of dikes, which impound water into large open expanses. These areas provide important areas for foraging, staging and loafing for many waterbird species throughout the year. HSWMA provides approximately 550 acres (14% of the WMA) of open, shallow fresh water habitats.
 - The priority threats include: Agricultural/Municipal/Industrial Water Usage (Very High S&S); Water Allocation Policies (Very High S&S); and Drought Conditions. (High S&S).

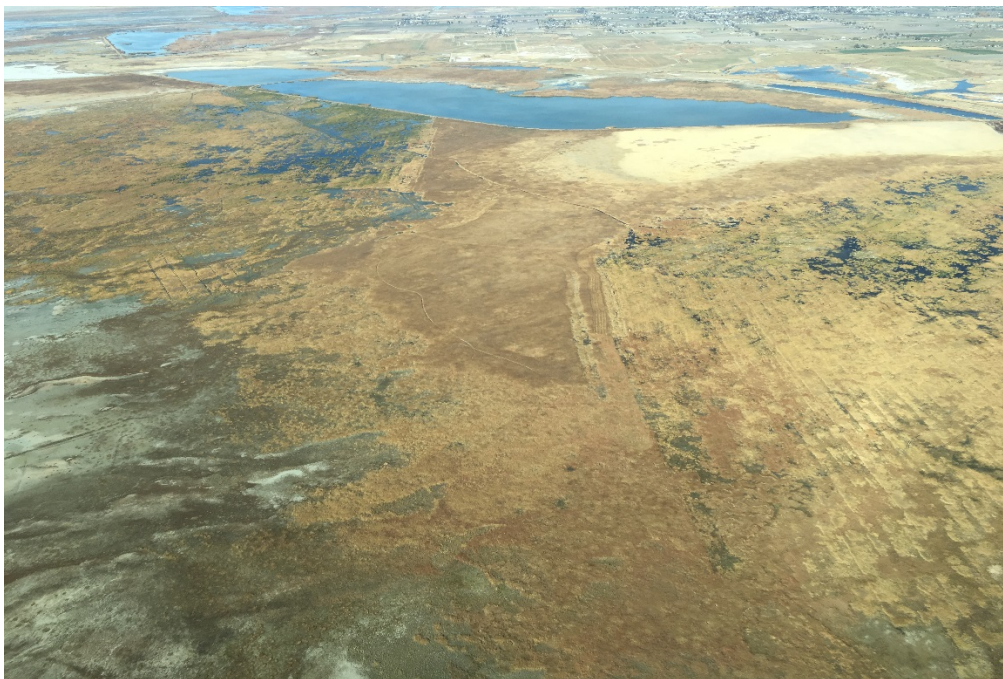
Other important wildlife habitats:

- Uplands: Although upland areas are not considered a key habitat in the WAP, uplands provide important nesting habitats for migrating waterfowl, shorebirds, and passerine species. The vegetative community consists primarily of Greasewood (*Sarcobatus vermiculatus*), and tall wheatgrass. HSWMA supports approximately 165 acres (4% of the WMA) of upland habitats.

- Mudflat/playa: Although not considered as key habitats in the WAP, mudflats/playas provide important habitats for foraging, staging and loafing areas for many waterbird species throughout the year. The playas hold water every few years, with the vegetative community primarily supporting Pickleweed (*Salicornia spp.*). Mudflats on the HSWMA support water infrequently, usually associated with the rise of GSL water levels. The WMA supports approximately 510 acres (13% of the WMA) of mudflat/playa.

Most of these threats are unable to be addressed directly at HSWMA. However, management at HSWMA addresses threats to these key aquatic habitats to the extent possible by managing for a diverse range of habitats in various successional stages which maintain and benefit the wide variety of wildlife species found on the WMA.

The majority of the Species of Greatest Conservation Need and Utah State Sensitive Species do not have specific management plans to guide their management. In the future, as species management plans are written and adopted by the Utah Wildlife Board, they may be implemented at HSWMA.



Howard Slough WMA. Photo taken Oct. 31, 2017; looking east; Westpoint City in background.

General Condition of Habitats

Habitat Types

Prior to development of Howard Slough WMA, the habitat conditions were not reliable. The area was mainly an expansive and intermittent marsh that was dominated by salt grass and cattail. Nests were commonly flooded from natural flood events from rising streams and creeks, and the marsh frequently dried up in the summer, which resulted in high mortality of young ducks. Heavy grazing also threatened the nests. However, beginning in 1958, with the implementation

of a freshwater distribution system that was comprised of dikes and head gates, the area was transformed into productive shallow ponds, mud flats, and marshes that provided stable and more dependable wetland habitats year round.

Depending on the elevation of the Great Salt Lake, the managed land area of Howard Slough fluctuates between 2,600 – 3,920 acres on average (elevation varies above and below 4205 feet above sea level). Water is supplied mainly by the Howard Slough stream and treated effluent from the North Davis Sewer District, but is also supplemented by drains and sheet drainage from adjacent landowner irrigation.

The WMA contains a variety of habitat types including open fresh and salt water areas, wetland, mudflat, grassland, and upland areas. The quantity of each of these habitat areas varies with the elevation of the Great Salt Lake, but a tentative estimate based on 3920 acres of manageable land includes: upland habitats comprise approximately upland 165 acres (4 %); open, shallow fresh water habitats comprise approximately 550 acres (14%); and emergent wetland and wet meadow habitats account for 2665 acres (68%); playa and mudflat habitats account for 510 acres (13%); and all other non-habitat types comprising less than 1% of the WMA.

Vegetation in emergent wetland communities include a variety of bulrush, ranging from alkali bulrush (*Scirpus maritimus*), in the shallowest and more saline waters; Olney's bulrush (*Scirpus americanus*), in semi-permanent water and less saline soils; and Hardstem bulrush (*Scirpus acutus*), in the freshest and deepest water. Cattail and the invasive *Phragmites* also occur on the edges of the open water.

Mudflats support red saltwort (*Salicornia rubra*), saltgrass (*Distichlis spicata*), and, in slightly less alkaline areas, foxtail barley (*Hordeum jubatum*).

Aquatic vegetation includes mainly sago pondweed (*Potamogeton pectinatus*) with some wigeon grass (*Ruppia maritima*) and horned pondweed (*Zannichellia palustris*).

Upland vegetation includes mainly saltgrass in seasonally flooded areas, with higher elevations supporting saltgrass, sweet clover (*Melilotus sp.*), smartweed (*Polygonum sp.*), alkali sacaton (*Sporobolus airoides*), cheatgrass (*Bromus tectorum*), wheatgrass (*Agropyron sp.*), saltbush (*Atriplex sp.*), salt cedar (*Tamarix sp.*), Russian olive (*Eleagnus angustifolia*), and greasewood (*Sarcobatus vermiculatus*). Slope areas of the dikes support saltgrass, sumpweed (*Iva axillaries*), bassia (*Bassia hyssopifolia*), and pepperweed (*Lepidium perfoliatum*). Salt cedar, Russian olive and greasewood are the only woody vegetation that occurs on the WMA.

A number of noxious plant species, as declared by the State and County weed boards, do occur on the WMA and include: perennial pepperweed (*Lepidium latifloium*); Canada thistle (*Cirsium arvense*); musk thistle (*Carduus nutans*); Russian knapweed (*Centaurea repens*); whitetop (*Cardaria draba*); purple loose strife (*Lythrum salicaria*); and dyers woad (*Isatis tinctoria*). The invasive common reed (*Phragmites australis*) also has a significant presence in all moist soil areas on the WMA and is a major target in weed control efforts.

Phragmites Treatment West of HSWMA Impoundments

**Pre-Treatment
June 2015**



**Post-Treatment
July 2017**



Habitat Concerns/Limitations

- Water quantity is of high concern for Howard Slough WMA. In order to keep impoundments and wetlands at optimal condition with quality vegetation for nesting, food, and cover, and a plentiful supply of aquatic invertebrates to feed waterfowl and shorebirds, there must be a sufficient supply of water throughout the year. During average water years, there is typically an adequate supply for the majority of the management area, although portions of the marsh may become dry in late summer and early fall. In drought years, a larger percentage of the marsh will become dry. When sediment is exposed, cattail and *Phragmites* seeds germinate and/or encroach upon the open water areas. Flow management, in both times of drought and times of surplus, is a key element in the success of Howard Slough WMA. It is vital that monitoring and adjusting of water levels is done in order to minimize avian botulism outbreaks that occur on and nearby the WMA, as they tend to occur most frequently in stagnant water. These outbreaks can be quite catastrophic, causing thousands of bird deaths in some years.
- Water quality is also an important management issue, although no specific water quality testing has been completed on the WMA. The Howard Slough stream, smaller tributary drainages and irrigation return waters which flow into the WMA are of high concern as the WMA is at the lowest point in the watershed. These waters flow through potentially contaminated upstream lands including: farmlands; residential sites; and some industrial areas. The water also picks up silt from these areas, which could contain hazardous or toxic substances, agricultural nutrients and chemicals, and septic contaminants.

The amount of sedimentation which comes to HSWMA is the largest known form of non-point pollution on the WMA. Silt deposition is responsible for most of the channel restrictions observed on the WMA, with the amount of silt increase directly correlating with the increased cfs of flood waters. Large event silt deposits can reduce water delivery channel capacities to minimal in just a few weeks which can have a major impact on the water distribution capabilities at the WMA. A large number of maintenance projects for debris and silt removal within the WMA are now periodically required to keep water distribution channels functional.

Sedimentation can also cause a major change in habitat and/or in the management potential for an area. The sediment can come into an area either by transport from the stream or through the GSL shifting locations due to wave surges, causing the “Leveling Effect”. The “leveling effect” is when the lake is at certain elevations, saline water and the lake sediments can fill ponds, impoundments, and back up into the river channels. This can result in the elimination of deeper submergent habitat and vegetation. On a broad scale, an 18-inch elevation change can change marsh habitat to upland habitat. This is mainly because of the lost capability to irrigate by gravity flow, and/or the new sediment can overlay saline substrates which limit the ability to manage the marsh. Creating conditions where salt(s) rise to the surface through capillary action is an effective method for weed control and sediments can interrupt this process.

- Noxious and invasive weeds on the WMA require tireless monitoring and eradication efforts. The invasive, common reed (*Phragmites*), salt cedar, purple loosestrife and perennial pepperweed, and others are abundant on the WMA and can out-compete more desirable vegetation. In some areas, ideal nesting habitat that was once known to attract a variety of birds and consisted of vegetation such as salt grass, alkali bulrush, cattail, and Olney’s bulrush, have been overtaken by monoculture stands of *Phragmites* that only accommodate one or two avian species. A five year plan including herbicide treatments supplemented by prescribed burns is mainly used to manage the noxious weeds. In the first year, sites needing treatment are identified and surveyed. In the following year, the aquatic herbicidal treatment, glyphosate, and a non-ionic surfactant are applied aerially, or from the ground, in the fall. In year three, during the spring, the treated area is burned, mowed or crushed and, several months later in the fall, it is re-treated with herbicide. Herbicide treatment, and possibly crushing or mowing, as done in year three, are repeated in the fourth year. For the fifth year and beyond, follow up is done as is needed. Approximately 2,000 acres on Howard Slough WMA have been successfully treated and the weeds appear to be responding to the treatment. Habitats are no longer “monotypic” and provide diverse wildlife habitats.

Although the option to burn areas of HSWMA is becoming more difficult due to air quality concerns and may not be undertaken in the future, UDWR will coordinate any proposed burning activities with the Utah Division of Forestry, Fire and State Lands. The MOU between the agencies to accomplish burns is on file at the Ogden Bay headquarters and at the UDWR Northern Region Office.

- Biological Control Agent (BCA) introductions have also been used to target noxious and invasive purple loose-strife, and tamarisk on Howard Slough, Ogden Bay and other areas within the Weber System. BCA introduction is accomplished by intentionally bringing in a natural biological predator of a specific weed species. If the introduction is successful, there is a reduction in the quantity of the invasive species over time. Both the 1995 introduction which targeted purple loosestrife and the 2008 application for tamarisk have shown positive results. BCA may be used in the future to target other noxious and invasive weeds. A full list of noxious weeds occurring on the WMA and those with BCA availability can be found in Appendix D. A noxious weed treatment plan (2009) for the northern region Waterfowl Management Area's, is available at the Northern Region Office.
- Although trapping of predators and improving habitat alleviates some loss of mortality, predation continues to be problematic for nesting birds. Red fox, raccoon and striped skunk are the main predators that threaten the nests, although weasel and mink also contribute to nest failure. Additionally, California gulls and ravens prey on nests. At times, gulls establish colonies near nesting waterbird habitat and are capable of contributing to excessive loss of young birds. The colonies are controlled through dike maintenance and grading during nesting season, which pushes the gulls to establish their colonies near the Great Salt Lake instead, and reduces their impact to nesting birds on the WMA.
- Undesirable fish species, such as carp, enter the WMA via the Howard Slough stream, seeking shelter and spawning grounds in the impoundments of the WMA. The constant migration of these fish raises concern for aquatic invertebrates and aquatic vegetation, which provide important habitat resources for wildlife on the WMA. It is vital that carp populations are monitored and controlled annually to protect habitat quality. Control measures include winter kills via freezing the entire depth of the water column and depleting oxygen in deeper areas, drawing down water levels in the summer to rapidly decrease oxygen levels in high water temperatures, and applying a chemical toxicant (liquid rotenone) in small localized areas after winter draw-downs. A detailed plan for carp treatment is on file at Ogden Bay headquarters and the UDWR Northern Region Office.

Human Use-Related Problems

Human use-related concerns include:

- Vandalism of fences, gates and signs is a constant problem and is likely related to the close proximity of the WMA to a large metropolitan area and increasing urbanization of adjacent areas.
- Litter is somewhat problematic and requires constant efforts to remove.
- Accommodating large numbers of hunters that use the area during waterfowl season raises some problems.
- Adequate sign posting and patrolling must be done to keep hunters in the legal shooting areas.
- In previous years, local helicopter companies have done training over the WMA including hovering over the area and landing on the dikes, which disturbs nesting wildlife

and is unsafe during hunting season. The helicopter companies have responded to UDWR concerns and have stopped their activities.

- An increase in law enforcement presence in the area has helped decrease the frequency of problems related to human use.

Adjacent Land Uses and Potential Impacts

The WMA is bordered to the west by the Great Salt Lake, on the south and east by privately owned lands, and to the north by UDWR owned and managed Ogden Bay WMA. The Great Salt Lake serves as important habitat for millions of birds, but is also used for salt and mineral extraction, brine shrimp harvesting, boating and other recreational activities. These uses do not usually infringe on the management of the WMA. Current use of surrounding privately owned lands mainly consists of agricultural activities, such as crop production and grazing, although rapid urbanization and shifting agricultural practices on nearby lands have dramatically increased the importance of HSWMA for wildlife. The Division will continue to pursue the purchase of land with quality habitat as funds and manpower permit. The UDWR managed Ogden Bay WMA is adjacent at the most northwestern tip of Howard Slough WMA, and the two WMAs are often managed contiguously. Uses of Ogden Bay are similar to those of Howard Slough, such as waterfowl hunting and bird watching.

III. Management Goals and Objectives

Howard Slough WMA management is based primarily upon goals, objectives, and strategies of various plans, which are summarized below

UDWR Strategic Plan (2007-2011)

The management of the Howard Slough WMA has relevance to the following goals and objectives as outlined in the Division's Strategic Plan:

Resource Goal: Expand wildlife populations and conserve sensitive species by protecting and improving wildlife habitat.

Objective R1- Protect existing wildlife habitat and improve 500,000 acres of critical habitats and watersheds throughout the state by 2011.

Objective R2- Increase fish and game populations to meet management plan objectives and expand quality fishing and hunting opportunities.

Objective R3- Conserve sensitive species to prevent them from being listed as threatened or endangered.

Constituency Goal: Achieve broad-based support for Division programs and budgets by demonstrating the value of wildlife to all citizens of Utah.

Objective C1- Increase public awareness of wildlife as a quality of life issue in order to expand our support base and achieve stable funding.

Objective C2- Improve coordination with organizations, public officials, private landowners, industry, and government agencies to obtain support for Division programs.

These goals and objectives will be accomplished by properly managing the water, vegetation, wildlife and human components of the WMA according to those strategies mentioned in the property and habitat management sections below. These section's detail property maintenance and development, wildlife species and habitat management, and access and fire management on the WMA.

Utah Wildlife Action Plan

The 2015-2025 edition of the Utah Wildlife Action Plan (WAP) was created with the express purpose and goal of managing native wildlife species and their habitats to help prevent listings under the Endangered Species Act. To help achieve this goal, the WAP provides a statewide approach for the partnership-based, coordinated planning and implementation of wildlife and habitat conservation practices. The WAP addresses the following elements:

- Conservation targets include; species of greatest conservation need, and those species' key habitats; information about the status and distribution of these species; information about the location and condition of these key habitats.
- Threats and limiting factors facing these species and habitats, and research required to help managers more effectively address these problems. Threats are measured and prioritized on a statewide basis, based on how many targets they impact, and how severely the targets are impacted.
- Conservation actions required to abate the highest-priority threats, and improve the supply of these limiting factors.
- Monitoring the status of these targets, and in particular the effectiveness of these actions.
- Approaches for including the public, partners, and stakeholders, in consideration of the mission and authority of partners.
- Provisions for coordinating the WAP with other natural resource management plans.

The HSWMA HMP process is used to address wildlife species and habitats found on the WMA, by explicitly including their needs in routine, novel, and emergency management activities. This aligns well with the intent of the WAP, which identifies specific management actions that can be taken to reduce priority threats to these species and habitats.

The HSWMA has several aquatic habitats of statewide and local concern, which include emergent marshes and open water. One of the intents of the WAP in identifying these habitats is that local-area management efforts can better focus actions on those specific habitats where actions can have the most benefit for species of greatest conservation need. Most of the threats to the key aquatic habitats are unable to be addressed directly at HSWMA. However, management at HSWMA attempts to address threats to these habitats to the extent possible by managing for a diverse range of habitats in various successional stages which maintain and benefit the wide variety of wildlife species found on the WMA. For more information, please see the discussion in this plan, Section II Property Inventory, Wildlife Action Plan.

Great Salt Lake Comprehensive Management Plan and Mineral Leasing Plan

In order to more specifically articulate the Utah Department of Natural Resources (DNR) management objectives for the resources of GSL, and to reconcile the diverse mandates of the seven divisions within DNR, the Great Salt Lake Planning Project was initiated. The UDWR has

authority for managing wildlife in, on and around the Great Salt Lake, and participated in the development of both the Great Salt Lake Comprehensive Management Plan and the Mineral Leasing Plan (both documents final, March 2013). The Utah Division of Forestry, Fire and State Lands has been given authority (via Utah State Code 65A-2; and Utah Administrative Code R652-90) to prepare and adopt comprehensive management plans for sovereign lands and resources, including the GSL, and was the lead agency in developing this GSL Plan.

The purposes of the Great Salt Lake Planning project are:

- To establish unifying DNR management objectives and policies for GSL trust resources
- To coordinate the management, planning, and research activities of DNR divisions on GSL
- To improve coordination among DNR divisions, establish a decision-making proposal review and appeal process, resolve some issues between divisions, and improve management of the lake and its resources.
- To develop a sovereign land and resource management plan for the lake that balances multiple-uses and sustainability issues
- To establish processes for plan implementation, monitoring, evaluation, and amendment

The comprehensive management plan covers a wide range of elements of the Great Salt Lake including information about the hydrology, chemistry, water quality, air quality, biology, ecosystem, land, minerals & hydrocarbons, recreation, tourism & cultural resources, commercial & industrial use, agriculture, transportation, law enforcement, search & rescue, open space, critical lands, and visual resource management. It also developed a GSL lake level matrix and lake level management strategies to help guide the timing of various management strategies to minimize impacts to trust resources

The mineral leasing plan identifies the extractive resources found on, in, adjacent to or under the GSL. It further identifies critical wildlife habitat areas where habitat protection is the preferred option. One of the goals of this planning effort is to integrate mineral resource planning with other resources and resource planning efforts.

North American Waterfowl Management Plan, Intermountain West Joint Venture

UDWR is supportive of the North American Waterfowl Management Plan and the state has benefitted from several Intermountain West Joint Venture Projects.

Annual Work Plan

The annual work plan is a guiding document that provides guidelines for where the Federal Aid grant money can be used. As part of the annual work plan, HSWMA conducts all waterfowl and non-game surveys and provides the numbers to the Utah Waterfowl Coordinator. UDWR and HSWMA managers diligently follow the Clean Water act and work with the Army Corps of Engineers whenever there may be a wetland development project or potential wetland impacts.

IV. Strategies for Property Management

Maintenance/Development Activities

- Agreements
 - Develop formal agreement with current landowners of the former Simpson property to document the current fence location.
 - Develop formal agreement with the Bay View Gun Club to document the current fence location.
- Survey needs
 - Portions of the north and east boundaries need to be surveyed.
 - Base elevations on all outer dikes and several benchmarks need to be restored.
- Fence needs
 - Approximately 3 miles of fence need repair/replacement work.
 - Inspect entire fence line twice each year. Repair and replace dilapidated or damaged fences and gates as needed.
- Sign needs
 - Maintain boundary, entrance, and regulatory signs to clearly identify ownership, access, vehicle restrictions, and rules and regulations enforced on the WMA.
 - Many internal regulatory signs concerning recreational activities need upgrading. Assure that all signs are clear, legible, and in place prior to hunting season.
 - Post signs that state hunting is allowed anywhere on the WMA during waterfowl season, except those areas within 100' of any vehicle traveled roads or parking lots.
- Dike and Road maintenance
 - Maintain areas where motorized vehicles are unauthorized. Assure that appropriate signs are in place to indicate any rules or restrictions.
 - Grade all gravel roads twice annually as needed and as vegetation permits.
 - Fill holes on all road types and mow roadside vegetation to improve visibility to drivers navigating the roads, particularly prior to hunting season.
 - Grade dikes once annually. Maintain dikes by filling muskrat holes, mowing, grading, and graveling as needed.
 - Monitor and repair foot bridges as necessary.
 - Some public access roads need re-graveling
 - In the future, rebuild 3 miles of the secondary dike located east of the south pond. The channel would also be cleaned at the same time to utilize the sediments on the dike.
- Parking areas
 - Maintain existing parking areas and boat ramp. Mow vegetation as necessary.
- Noxious weed control
 - Noxious weeds will be monitored and controlled on a coordinated level with various agencies through the use of aerial and ground herbicide applications supplemented by prescribed spring burns and BCA.
- Nuisance Wildlife/Predator control
 - Apply necessary control methods annually to keep carp populations, nuisance wildlife and predators in check.

- Maintenance of water developments
 - Manage water levels and maintain dikes, check dams, culverts, head gates, risers, gauge houses, ponds, and wetlands to maximize habitat quality on the WMA.
 - Clean irrigation channels annually between February and mid-September.
- Habitat Enhancement and Development
 - Maintain area vegetation, shelter belts, trees and shrubs.
 - Evaluate, prepare and conduct herbaceous seeding.
 - Utilize herbicide supplemented with prescribed burns and Biological Control Agents (BCA) as a mechanism to aid in the control of noxious weeds
 - Summer/Fall 2018: Replace 10 headgates which are failing.
 - Fall 2018: In the Hooper Hot Springs unit, plant a new area of 10 acres of perennial grass and forb habitat.
 - Continue ongoing *phragmites* control.
- Equipment
 - Maintain all equipment and machinery and make necessary repairs.
- Peregrine Hack Tower
 - Evaluate tower for rehabilitation, replacement or removal.
- Water Rights
 - Continue efforts to perfect water right # 31-5138.

Zoning and Land Use Ordinances

The WMA has been classified by Davis County as A-5 (Agricultural Zone). The purpose of this zone is to promote and preserve the agriculture industry, and maintain greenbelt open spaces in the County by allowing relatively small lot sizes (five acre minimum), while maintaining an overall low dwelling density. Primary uses include single-family dwellings, farm industry and agriculture. The specified land use is compatible with WMA management.

V. Strategies for Habitat Management

Unit Management Plans for Wildlife Species

Strategies for habitat management will be based on a holistic approach that takes into account the wildlife, habitat and human components of the WMA. These include:

- Provide an array of different habitat types in structure, composition, and phenology that meet the diverse species and chronological annual cycle needs of wildlife that use the area.
- Maintain a diverse plant and wildlife community using the available tools, technology and knowledge.
- Maintain control of undesirable plant species, increase food quality and production, and enhance cover quality.
- Minimize negative impacts to wildlife in the area

Habitat Improvement Plan

To perpetuate, enhance and increase wetland resources to maximize habitat, wildlife populations and public use through education, management and regulation.

Objectives:

1. Inventory existing conditions.
2. Maintain and preserve existing wetland resources.
3. Enhance and expand wetland resources.
4. Aggressively combat invasive weeds with herbicide, cattle grazing and prescribed burn treatments.
5. Repair, replace and maintain fences to keep motorized vehicles on authorized roads.
6. Increase recreational opportunities by providing better habitat and attracting more waterfowl. Provide better habitat to increase the pheasant population.
7. Provide and promote regulation to insure maintenance and preservation.
8. Plant unproductive uplands with a native perennial grass/forb mix to provide better nesting conditions for waterfowl and pheasants.

Access Management Plan

The access management plan for the Howard Slough WMA is included in Appendix C. It discusses access to the WMA, rules and regulations for motorized vehicle operation in the area, and how this system is compatible with achievement of WMA management goals and objectives. A map is included, which shows authorized roads and parking facilities.

Fire Management Plan

Due to state and federal air quality regulations, and concerns with local human populations, it is doubtful that a prescribed burn would occur on the Howard Slough WMA. However, if a prescribed burn is proposed, a burn plan will be created to assure all specific environmental conditions and criteria are met for burning to proceed. Various agencies are involved in the planning and subsequent burning process, including various County and City Fire Districts, Departments from Davis, Box Elder, Rich, Cache, and Salt Lake counties, Weber County Air & Water Quality, Utah Division of Forestry, Fire and State Lands (DFFSL), and the Utah Division of Wildlife Resources.

In the event of a wildfire, Davis County Fire Department would respond, permitting the fire is accessible by their vehicles. For major wildfires, a joint effort of the UDWR and the DFFSL would proceed according to guidelines established in the Memorandum of Understanding (2005) between the agencies. This MOU is on file at the Ogden Bay WMA Headquarters and at the UDWR Northern Region Office.

The use of fireworks is prohibited on the WMA (R657-28-4, n) and open campfires are not allowed.

VI. Summary Statement of Proposed Uses

The goals and objectives of the Howard Slough WMA are primarily to ensure protection of habitat quality for waterfowl and shorebirds, but ultimately to preserve, restore, and enhance both aquatic and terrestrial habitat for wildlife; protect cultural resources; and provide for recreational opportunities that are compatible with the purpose of upland and wetland ecosystems.

VII. Monitoring and Evaluation

The area supervisor, assistant wildlife manager and regional wildlife manager will be responsible for monitoring overall effectiveness of the program. Appropriate sections will provide expertise as required. The area supervisor will oversee the effectiveness of the WMA. The regional team will amend this plan as needed.

VIII. Appendices

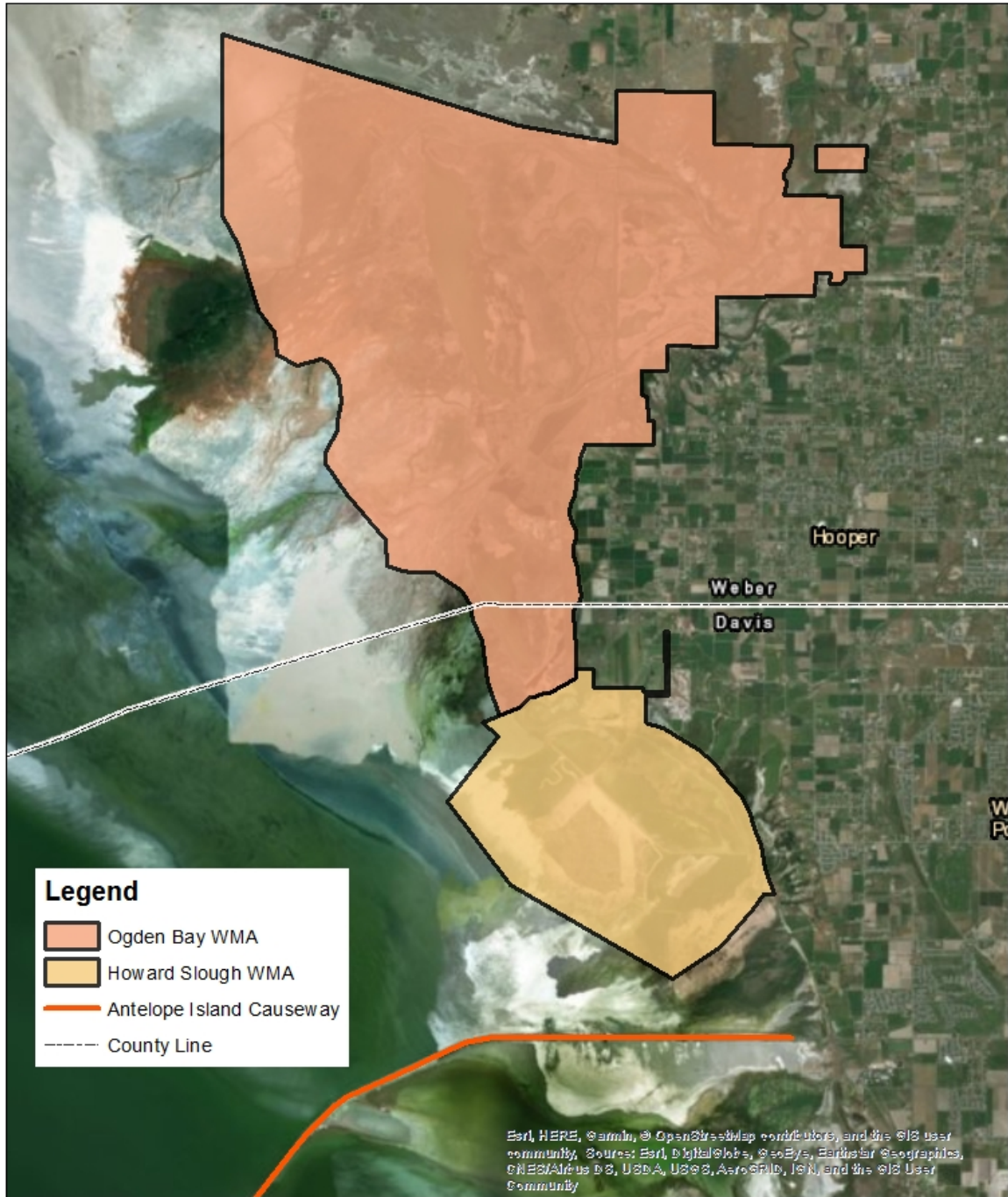
- Appendix A - General Maps and Tables
 - General Location
 - Surrounding land ownership
 - Water Developments
- Appendix B - Legal Description and Encumbrances
 - Land Parcels and Legal Information
- Appendix C - Access Management Plan and Map
- Appendix D – Wildlife, Plant and Weed Information
 - Sensitive Species and Species of Conservation Need
 - Birds of Ogden Bay and Vicinity – Checklist
 - Common Wetland Associated Birds, Mammals, Amphibians, Reptiles, Invertebrates and Fish of Howard Slough, Harold Crane and Ogden Bay WMA's and Vicinity
 - Common Wetland Plants and Wetland Classifications
 - Noxious and Invasive Weeds of Ogden Bay, Howard Slough, and Harold Crane WMAs, and Willard Bay Upland Game Area - Biological Control Agent (BCA) Availability

Appendix A

Maps

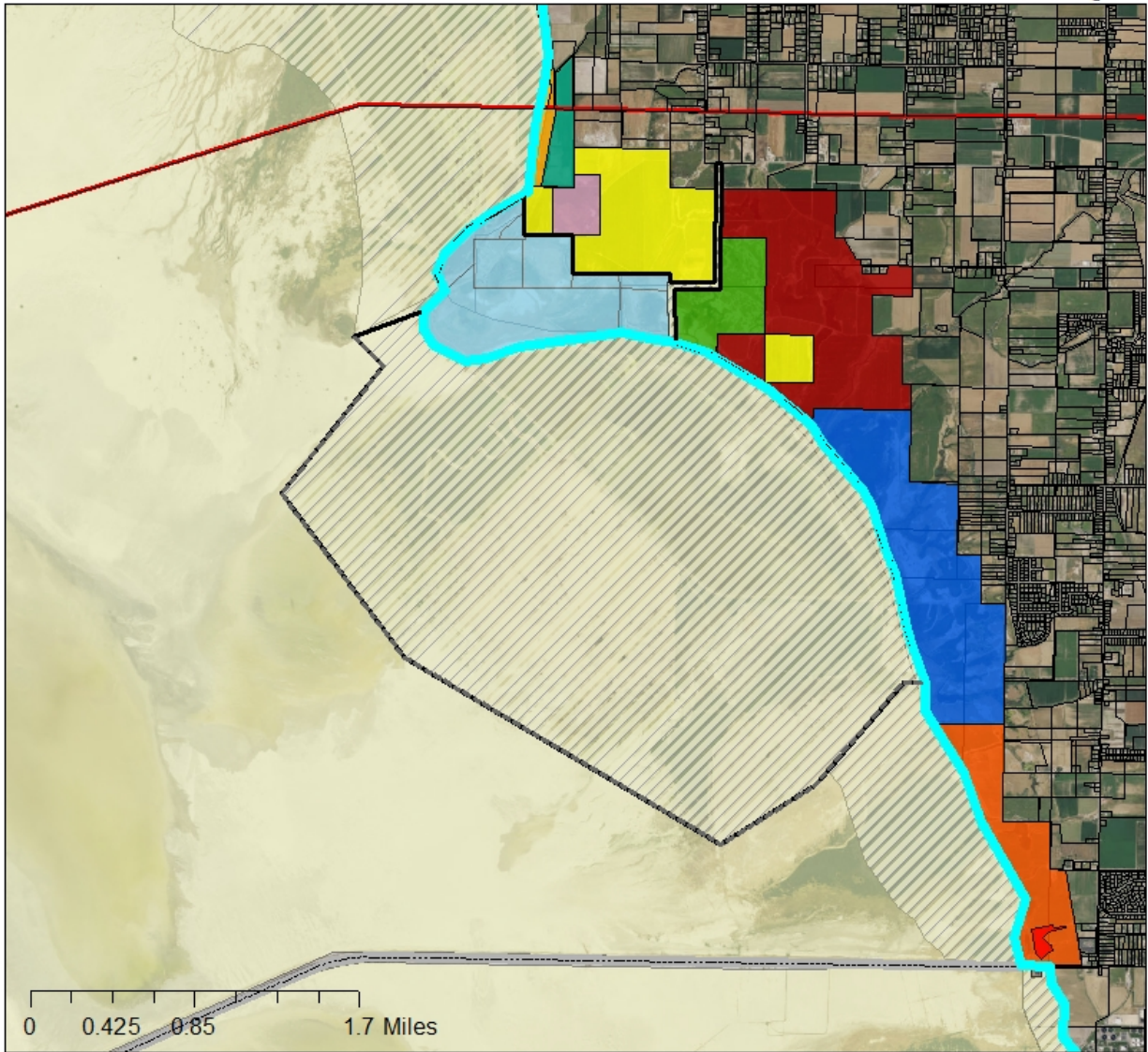


Howard Slough WMA Aerial Map Location



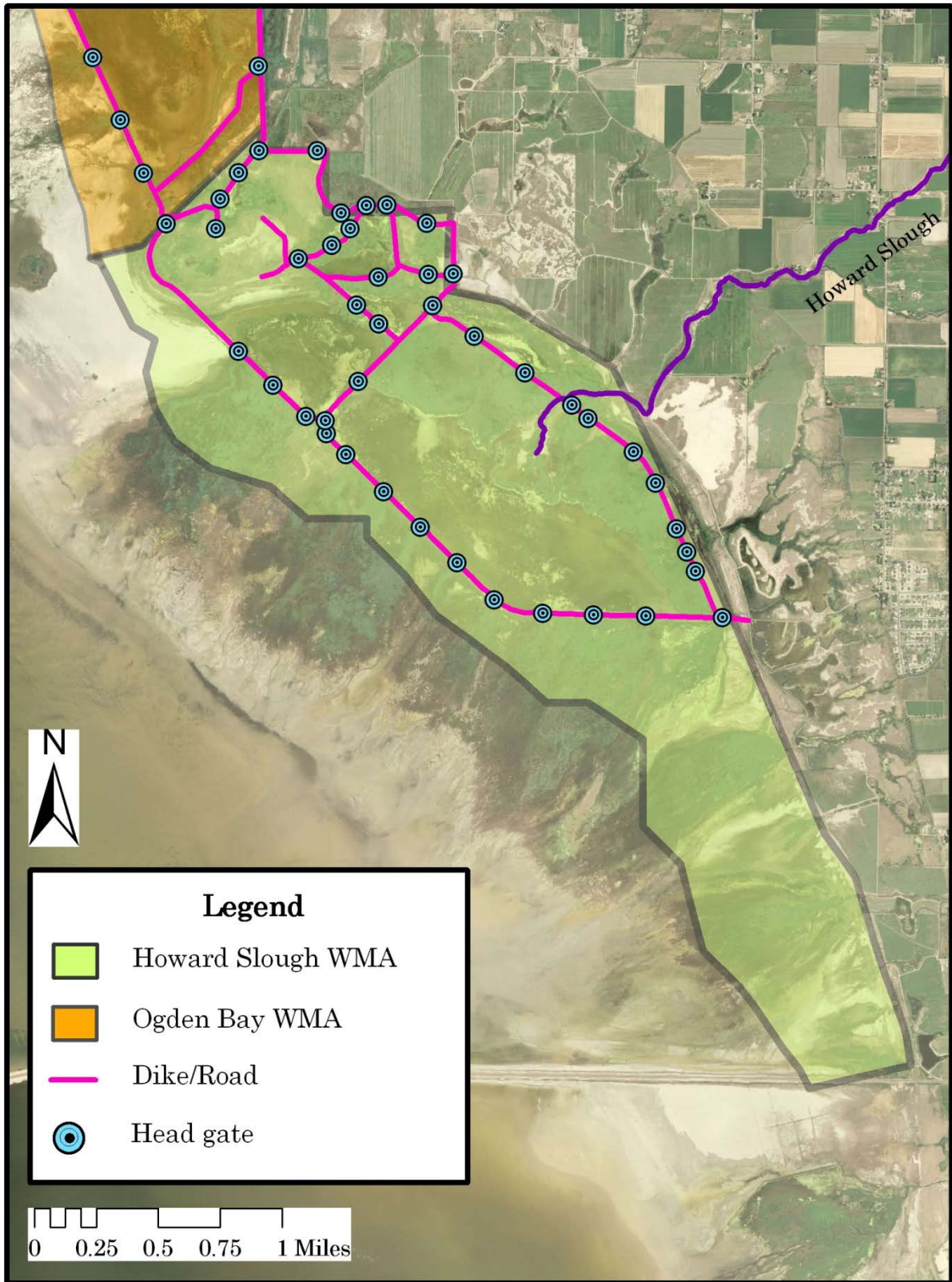


Howard Slough WMA Fee Lands, Managed Sovereign Lands, & Adjacent Land Ownership Map



- | | |
|--|--|
| ----- Identifinte Boundary | Bay View Club |
| ▭ HSWMA | Syracuse City |
| ▭ GSL Meander Line | Diamond Ranches LLC |
| ▭ Parcels_Weber | Antelope Island Causeway |
| ▭ County line | State Sovereign Land |
| ▭ Marie F. Hansen- Trustee | ▨ Sovereign Land Under UDWR Managment |
| ▭ Dale & Misti T. Parker | ▭ HSWMA Fee Title Land |
| ▭ Delora M. Fowers- Trustee | ▭ Kurt W. & Marsha P. Fowers- Trustees |
| ▭ Catherine R. & Johnston Gamer, Genevieve R. E stal- Trustees | ▭ Parcels |
| ▭ Wiley A. Fowers & Son LLC | |

Howard Slough WMA Water Developments



Appendix B

Legal Description and Encumbrances,
Agreements, Enhancements, and Easements

Howard Slough WMA
Legal Description and Encumbrances, Agreements, Enhancements, and Easements

Grantor: *Aurthur L. and Clara C. Fowers*

Warranty Deed 168141 (~ 41.307 acres)

Davis County: Book: 126 Page: 545 **Signed:** 06/29/1957 **Recorded:** 07/11/1957

Township 5 North, Range 3 West

Section 27: Lot 2 16.393 acres

Lot 3 23.409 acres

Lot 4 1.064 acres

SE ¼ NW ¼ 0.441 acres

Encumbrances & Limitations:

- None listed

Grantor: *Vern C. and Reta R. Parker*

Warranty Deed 183661 (~ 3.34 acres)

Davis County: Book: 154 Page: 206 **Signed:** 12/02/19585 **Recorded:** 12/08/1958

Township 5 North, Range 3 West

Section 26: 3.34 acres

Encumbrances & Limitations:

- None listed

Grantor: *Arthur A. and Wilma N. Fowers*

Warranty Deed #885923 (~ 297.79 acres)

Davis County: Book: 1342 Page: 242 **Signed:** 03/19/1990 **Recorded:** 03/21/1990

Township 5 North, Range 3 West

Section 26: 50.29 acres

Section 27: 247.50 acres

Encumbrances & Limitations:

- Together with all water rights appurtenant to the property, specifically water user claim numbers 31-2475, and 31-4623. Grantors agree that at no time will they or their successors allow or engage in any activity or divert water above the NE corner of SW ¼ NE ¼ of Section 27, so as to cause the flow of water to fall below 1 cfs.

Utah Code, Section 23-21-5 authorizes the DWR to utilize all or parts of 36 townships of sovereign lands below the 1855 Great Salt Lake meander line for the “creation, operation, maintenance and management of wildlife management areas, fishing waters, and other recreational activities.” For HSWMA, this applies to approximately 3575 acres of Great Salt Lake open water to the west of the diked impoundments.

Appendix C

Access Management Plan

**Howard Slough Waterfowl Management Area
Access Management Plan
April 2018**

Purpose

To ensure that public use and access on the Howard Slough Waterfowl Management Area is done in a manner that assists the Utah Division of Wildlife Resources (UDWR) in achieving the goals and objectives outlined in the habitat management plan.

Background

Howard Slough WMA was acquired and habitat enhancements were done to offer improved nesting, resting and feeding habitat primarily for waterfowl and other birds, and to provide an area for wildlife-related public recreation. This unit provides critical habitat for waterfowl and shorebirds, but is also important for other wildlife species. The WMA is highly utilized by the public. It is most known for its waterfowl and pheasant hunting opportunities. In addition, the WMA is a popular site for wildlife viewing, photography, hiking, biking, scenic driving and dog training. The access management plan will allow for public access and use of the unit, while ensuring that wildlife and habitat management objectives are achieved.

Access to the WMA

The WMA is located west of West Point in Davis County, along the central eastern shore of the Great Salt Lake, between the south boundary of Ogden Bay WMA and the Davis County/Antelope Island Causeway. The WMA is closed to the public from March 1 to August 30 each year during the wildlife production season. A map is included which displays all access features of the WMA.

The WMA can be accessed at 6950 West and 2425 North by driving west on 5500 South in Roy. Take a left (south) at 7100 West. Travel south on 7100 West and continue on as it bends eastward into 2425 North. Take the first right onto 6950 West and travel south. UDWR signs will guide visitors from this point to the WMA entrance and designated exterior parking area.

WMA Specific Information

- The WMA is annually open from the Thursday before the youth waterfowl hunt, until the day after the goose hunt (usually the first Monday in February).
- Typical recreation includes waterfowl hunting, wildlife viewing, photography, hiking, biking, picnicking, scenic driving, and dog training.
- Non-consumptive visitors are welcome; UDWR recommends that they take precautions during the hunting season.
- There are no formal developed dog training areas. However, dog training is permitted.
- Trapping of muskrat, raccoon, fox, skunk, and mink is allowed for permit holders. Permits are obtained through a public draw application process.
- Permits are also required for special use activities on the WMA and must be filed with the UDWR several months in advance to assure proper review and approval (R657-28). Special uses are defined as “specific, non-depleting land uses, including seismic or land surveys, research sites, organized activities, or physical

access on division lands.” Any special use must not compromise the primary objective for original property acquisition.

- Limited camping is permitted only in the 2 WMA parking areas, in areas away from the entrances to prevent congestion. There are no camping amenities and no campfires are allowed. Camping is permitted as posted. If resource damage occurs from camping, the camping limit may be further restricted and/or the area may be closed to camping.
- Visitors may not possess a firearm, except during waterfowl hunting season or as authorized by the UDWR, and use is limited to shotguns with nontoxic steel shot.
- Hunting is allowed anywhere on the WMA during waterfowl season, except those areas within 100 feet of any vehicle traveled roads or parking lots as per posted signs.
- For hunter and vehicle safety, vehicles must park in the designated parking areas. Parking on the entrance road is strictly prohibited.
- Canoes and smaller motorized boats are permitted in river channels or in impoundments, and may launch from the boat ramp located off the interior parking area.
- Airboats are restricted to the Great Salt Lake shoreline area, west of the diked impoundments. An airboat launch is available at 9500 West off 900 South at the Ogden Bay WMA.
- Visitors are required to pack out all garbage.
- One outhouse-type restroom facility is provided for public use at the main parking area.

The UDWR reserves the right to restrict motorized and non-motorized access to the WMA if these activities are believed to be incompatible with the habitat management goals and objectives of the WMA.

Enforcement of Access Management Plan

Division personnel will enforce this access plan in conjunction with local law enforcement agencies.

Informing the Public

Signs will be posted at entrances, roads, parking areas, fence lines and gates to notify the public of access boundaries, rules and regulations. Seasonal closures or other access issues will be included in the annual UDWR hunting proclamations, which are available in hard copy at UDWR offices and where licenses are sold, or online at <http://wildlife.utah.gov/guidebooks>.

The UDWR will work with local, county, other state, and federal agencies to coordinate access plans that are consistent with the objectives and goals of Howard Slough WMA. This access management plan will be reviewed and updated as needed.



Howard Slough WMA Access Map



- | | | |
|-------------------------|--------------------------|--------------------|
| Parking and Boat Launch | Antelope Island Causeway | Hooper Hot Springs |
| Restrooms | Howard Slough | Water Impoundment |
| Identfinte Boundary | Dikes | HSWMA |
| Gate | Access Roads | County Line |
| Main Access Road | | |

Appendix D

Wildlife and Plant Information

- Sensitive Species and Species of Greatest Conservation Need
- Birds of Ogden Bay and Vicinity – Checklist
- Common Wetland Associated Birds, Mammals, Amphibians, Reptiles, Invertebrates and Fish of Howard Slough, Harold Crane and Ogden Bay WMA's and Vicinity
- Common Wetland Plants and Wetland Classifications
- Noxious and Invasive Weeds of Ogden Bay, Howard Slough, and Harold Crane WMAs, and Willard Bay Upland Game Area - Biological Control Agent (BCA) Availability

Utah State Sensitive Species and Species of Conservation Need*
(adapted from Utah Sensitive Species List (2017) and Utah Wildlife Action
Plan (2015))

Species of Greatest Conservation Need	Utah State Sensitive Species
American Bittern	American White Pelican
American White Pelican	Bald Eagle
Bald Eagle	Bobolink
Caspian Tern	Long-billed Curlew
Peregrine Falcon	Preble's Shrew
Snowy Plover	Short-eared Owl
White-faced Ibis	Townsend's Big-eared Bat
Burrowing Owl	Burrowing Owl
Little Brown Myotis	
Northern Leopard Frog	
Utah Milksnake	
Least Chub (possible, but unlikely)	Least Chub (possible, but unlikely)
Pilose Crayfish (possible, but unlikely)	
California Floater/Winged Floater	California Floater/Winged Floater

* The species identified above have either been observed on the Howard Slough WMA or could be found due to the habitat types present on the WMA.

BIRDS OF OGDEN BAY W.M.A. and VICINITY

Key to Codes

Relative Abundance

- C = Common (Found consistently in fair numbers in appropriate habitat and season)
 U = Uncommon (Found consistently in small numbers in appropriate habitat and season)
 R = Rare (Found infrequently in very small numbers in proper habitat and season)
 O = Occasional (Seldom found and not reported annually)
 I = Irregular (Abundance varies greatly from year to year- may be common one year and absent the next)

Status

- P = Permanent Resident (Found year round or at least early spring to late fall)
 S = Summer Resident (Present during the nesting season)
 W = Winter Visitant (Present during January and/or February)
 T = Transient (Migrates through in spring and/or fall)

LOONS

		__Snowy Egret	CS
		__Little Blue Heron	OT
__Common Loon	OT	__Cattle Egret	CS
		__Black-crowned Night Heron	CS

GREBES

__Pied-billed Grebe	CS
__Horned Grebe	RT
__Eared Grebe	CS
__Red-necked Grebe	OT
__Western Grebe	CS
__Clark's Grebe	CS

PELICANS & CORMORANTS

__American White Pelican	CS
__Double-crested Cormorant	CS

BITTERN & HERONS

__American Bittern	RS
__Least Bittern	OT
__Great Blue Heron	CP
__Great Egret	OT

IBISES, SPOONBILLS & STORKS

__White faced Ibis	CS
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SWANS, GEESE & DUCKS

__Fulvous Whistling-Duck	OT
__Tundra Swan	CT
__Trumpeter Swan	OW
__Gr. White-fronted Goose	OT
__Snow Goose	UT
__Ross Goose	RT
__Brant	OT
__Canada Goose	CP
__Wood Duck	OP
__Green-winged Teal	CT
__Mallard	CP
__Northern Pintail	US
__Blue-winged Teal	CS

__Cinnamon Teal	CS
__Northern Shoveler	CS
__Gadwall	CS
__Eurasian Wigeon	OT
__American Wigeon	CT
__Canvasback	CT
__Redhead	CS
__Ring-necked Duck	UT
__Greater Scaup	RT
__Lesser Scaup	CT
__Harlequin Duck	OT
__Oldsquaw	RT
__Black Scooter	OT
__Surf Scooter	OT
__White-winged Scooter	IT
__Common Goldeneye	CT
__Barrow's Goldeneye	RT
__Bufflehead	CT
__Hooded Merganser	OT
__Common Merganser	CT
__Red-breasted Merganser	CT
__Ruddy Duck	CS

HAWKS, FLACONS & VULTURES

__Turkey Vulture	UT
__Osprey	RT
__Bald Eagle	CW
__Northern Harrier	CP
__Sharp-shinned Hawk	CT
__Cooper's Hawk	CT
__Northern Goshawk	UT
__Swainson;s Hawk	US
__Red-tailed Hawk	UP
__Ferruginous Hawk	US
__Rough-legged Hawk	CW
__Golden Eagle	UT
__American Kestral	CS
__Merlin	UT
__Peregrine Falcon	US
__Prairie Falcon	CT

GROUSE, PHEASANTS, TURKEY & QUAIL

__Gray Partridge	RP
__Ring-necked Pheasant	CP
__Sage Grouse	OR
__California Quail	RP

CRANES, RAILS, GALLINULES AND COOTS

__Virginia Rail	CS
__Sora	CS
__Common Gallinule	IP
__American Coot	CS
__Sandhill Crane	US
	UT

PLOVERS AND SANDPIPERS

__Black-bellied Plover	UT
__Lesser Golden-Plover	RT
__Snowy-Plover	US
__Semi-palmated Plover	UT
__Killdeer	CS
__Mountain Plover	OT
__Black-necked Stilt	CS
__American Avocet	CS
__Greater Yellowlegs	CT
__Lesser Yellowlegs	CT
__Solitary Sandpiper	UT
__Willet	CS
__Wandering Tattler	O
__Spotted Sandpiper	CS
__Whimbrel	RT
__Long-billed Curlew	US
__Hudsonian Godwit	OT
__Marbled Godwit	CT
__Ruddy Turnstone	RT
__Red Knot	RT
__Sanderling	IT
__Semi-palmated Sandpiper	RT
__Western Sandpiper	CT
__Least Sandpiper	CT
__Baird's Sandpiper	UT
__Pectoral Sandpiper	UT

__Dunlin	RT
__Stilt Sandpiper	RT
__Buff-breasted Sandpiper	OT
__Short-billed Dowitcher	RT
__Long-billed Dowitcher	CT
__Common Snipe	CS
__Wilson's Phalarope	CS
__Red-necked Phalarope	CT
__Red Phalarope	OT

GULLS, TERNS AND ALCIDS

__Parasitic Jaeger	OT
__Long-tailed Jaeger	OT
__Franklin's Gull	CS
__Bonaparte's Gull	UT
__Ring-billed Gull	UT
__California Gull	CS
__Herring Gull	UW
__Glaucous-winged Gull	OT
__Glaucous Gull	RW
__Sabine's Gull	RT
__Caspian Tern	US
__Common Tern	RT
__Forster's Tern	CS
__Black Tern	US
__Ancient Murrelet	OT

PIGEONS AND DOVES

__Eurasian Collared Dove	CP
__Rock Dove	CP
__Morning Dove	US

OWLS

__Barn Owl	CP
__Flammulated Owl	US
__Western Screech-Owl	UT
__Great Horned Owl	CP
__Burrowing Owl	US
__Great Gray Owl	OT
__Long-eared Owl	UT
__Short-eared Owl	CS

GOATSUCKERS

__Common Nighthawk	US
--------------------	----

SWIFTS

__Vaux's Swift	OT
__White-throated Swift	OT

HUMMINGBIRDS

__Black-chinned Hummingbird	US
__Calliope Hummingbird	RS
__Broad-tailed Hummingbird	US

KINGFISHERS

__Belted kingfisher	UT
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WOODPECKERS

__Lewis' Woodpecker	UT
__Red-headed Woodpecker	OT
__Downy Woodpecker	CP
__Northern Flicker	CP

FLYCATCHERS

__Western Wood-Pewee	US
__Hammond's Flycatcher	US
__Dusky Flycatcher	US
__Gray Flycatcher	US
__Black Phoebe	US
__Eastern Phoebe	OT
__Vermilion Flycatcher	RS
__Ash-throated Flycatcher	US
__Western Kingbird	CS
__Eastern Kingbird	CS

LARKS

__Horned Lark	CT
---------------	----

SWALLOWS

__Tree Swallow	CS
__Violet-green Swallow	CS
__N. Rough-winged Swallow	CS
__Bank Swallow	CS
__Cliff Swallow	CS
__Barn Swallow	CS

JAYS AND CROWS

__Stellers' Jay	OT
__Pinyon Jay	RT
__Black-billed Magpie	CP
__American Crow	UT
__Common Raven	CP

TITMICE, VERDIN & BUSHTIT

__Black-capped Chickadee	UT
__Mountain Chickadee	UT

NUTHATCHES & CREEPERS

__Red-breasted Nuthatch	UT
-------------------------	----

WRENS

__Rock Wren	RT
__Canyon Wren	RT
__Marsh Wren	CS

DIPPERS

__American Dipper	RT
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KINGLETS & GNATCATCHERS

__Ruby-crowned Kinglet	UT
__Blue-gray Gnatcatcher	RT

THRUSHES

__Western Bluebird	OT
__Mountain Bluebird	UT

__Townsend's Solitaire	UT
__Swainson's Thrush	UT
__Hermit Thrush	UT
__American Robin	CP

THRASHERS

__Gray Catbird	RS
__Northern Mockingbird	UT
__Sage Thrasher	US

PIPITS

__American Pipit	UT
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WAXWINGS & PHAINOEPILA

__Cedar Waxwing	IT
-----------------	----

SHRIKES

__Northern Shrike	RW
__Loggerhead Shrike	UP

STARLINGS

__European Starling	CP
---------------------	----

VIREOS

__Solitary Vireo	US
------------------	----

WARBLERS

__Orange-crowned Warbler	RS
__Yellow Warbler	US
__Yellow-rumped Warbler	RT
__Black-throated Gray Warbler	RT
__American Redstart	RT
__MacGillvray's Warbler	RT
__Common Yellowthroat	RT
__Wilson's Warbler	OT
__Yellow-breasted Chat	RT

TANAGERS

__Western Tanager RT

GROSBEAKS & SPARROWS

__Black-headed Grosbeak IT
 __Lazuli Bunting UT
 __Indigo Bunting RS
 __Green-tailed Towhee UT
 __Rufous-sided Towhee UT
 __American Tree Sparrow UW
 __Chipping Sparrow UT
 __Clay-colored Sparrow OT
 __Brewer’s Sparrow UT
 __Vesper Sparrow UT
 __Lark Sparrow UT
 __Black-throated Sparrow UT
 __Sage Sparrow UT
 __Lark Bunting RT
 __Savannah Sparrow UT
 __Le Conte’s Sparrow OT
 __Song Sparrow CT
 __Lincoln’s Sparrow UT
 __Swamp Sparrow UT
 __White-crowned Sparrow CW
 __Harris’ Sparrow RW
 __Dark-eyed Junco CT
 __Snow Bunting RW

BLACKBIRDS & ORIOLES

__Bobolink RS
 __Red-winged Blackbird CS
 __Western Meadowlark CS
 __Yellow-headed Blackbird CS
 __Brewers’ Blackbird UP
 __Great-tailed Grackle RP
 __Common Grackle RS
 __Brown-headed Cowbird CS
 __Northern Oriole CS

FINCHES

__House Finch UT
 __Lesser Goldfinch US

__American Goldfinch US
 __Evening Grosbeak IT

WEAVER FINCHES

__House Sparrow CP

OCCASIONAL SPECIES- STATUS UNDETERMINED

__American Flamingo
 __Black Duck
 __Upland Sandpiper
 __Parakeet Anklet
 __Curlew Sandpiper
 __White-faced Tree Duck
 __Ruddy Shelduck
 __Ruddy Shelduck
 __Western Flycatcher
 __Whooping Crane
 __Brown Pelican
 __Gyr Falcon

PLEASE REPORT UNLISTED AND STATUS UNDETERMINED SIGHTINGS TO:

SUPERVISOR
 OGDEN BAY WMA
 4786 SOUTH 7500 WEST
 HOOPER, UT 84315

Common Wetland Associated Birds, Mammals, Amphibians, Reptiles, Invertebrates, and Fish of Howard Slough, Harold Crane, Ogden Bay W.M.A. and Vicinity

Key to Codes

Common Usage Types

f = Foraging and/or loafing

n = Nesting or denning

y = Young, rearing

w = Wintering

c = Climax Species (Numbers increase or persist or dominate in the rest of their group unless disturbance renovated areas.)

es = Early successional species (Species that are numerically highest within the first five years of a wetland being new or disturbance renovated. Their numbers decrease rapidly as primary production, forage base, and open water, mudflat, or short grass acreage, from vegetation over growth, decreases through time. Other species decrease because they do best at higher salinity and the area species composition changes as fresh water inflows flush out salinities.)

wd = Water foraging depth preferences, includes average range and assumes all species use terrestrial (*- water table > 6 inches deep) or moist soil (ms – water table >4 to 0 inches deep) eco-edge at times, such as loafing.

p = Predator (Over 50% of diet is animal matter throughout the year. Numbers often increase in time, particularly if they are a climax species.)

COMMON BIRDS

GREBES

_ Pied-billed Grebe (es, wd: 18 to > 60)

_ Western Grebe (es, wd: 12 to > 60)

_ Eared Grebe (wd: 18 to > 60)

PELICANS & CORMORANTS (P)

_ American White Pelican (es, wd: 6 to 24)

_ Double-crested Cormorant (c, wd: 36 to > 60)

WADERS (P)

_ Great Blue Heron (c, wd: 2 to 18)

_ Snowy Egret (es, wd: 2 to 10)

_ Black-crowned Night Heron (wd: 2 to 12)

WATERFOWL

_ Tundra Swan (es, wd: 12 to 36)

_ Canada Goose (es, wd: T to 24, 18 to > 60)

****Small Dabblers***

- _Green-winged Teal (es, wd: + to 2, 5 to 7)
- _Cinnamon Teal (es, wd: + to 4, 6 to 8)
- _Northern Shoveler (es, wd: + to 4, 6 to 8)

****Large Dabblers***

- _Mallard (c, wd: 4 to 15)
- _Northern Pintail (es, wd: + to 5, 7 to 16)
- _Gadwall (c, wd: 4 to 15)

****Divers***

- _Redhead (es, wd: 6 to 36)
- _Ruddy (wd: 6 to 12, 16 to 48)
- _Common Goldeneye (c, p, wd: 12 to 48)
- _Common Merganser (c, p wd: 18 to 60)

HAWKS & FALCONS (P)

- _Northern Harrier (c, wd: + to 6, above surface)
- _Rough-legged Hawk (c)
- _Peregrine Falcon (es, wd: + to 4, above surface)
- _Prairie Falcon (es)

PHEASANTS

- _Ring-necked Pheasant (es, wd: + to ms)

RAILS & COOTS

- _Virginia Rail (wd: 3 to 12)
- _Sora (es, wd: + to 6)
- _American Coot (c, wd: 11 to 18)

SHOREBIRDS (P)

****Small Gleaners***

- _Snowy Plover (es, wd: + to 1)
- _Killdeer (es, wd: + to 3)
- _Spotted Sandpiper (es, wd: 2 to 12)
- _Western Sandpiper (es, wd: + to 2)
- _Least Sandpiper (es, wd: + to 1)

****Large Gleaners***

- _Greater Yellowlegs (wd: 2 to 7)
- _Lesser Yellowlegs (es, wd: 1 to 5)
- _Wilson's Phalarope (es, wd: + to 3)
- _Red-necked Phalarope (wd: 1 to 3, 12 to > 60)

****Gleaner/Sweepers***

- __ Black-necked Stilt (wd: 4 to 7)
- __ American Avocet (es, wd: 3 to 6)

****Prober***

- __ Willet (es, wd: 2 to 6)
- __ Long-billed Curlew (es, wd: + to 6)
- __ Marbled Godwit (es, wd: + to 3)
- __ Long-billed Dowitcher (es, wd: 2 to 4)
- __ Common Snipe (wd: + to 4)
- __ White-faced Ibis (es, wd: 2 to 8)

GULLS & TERNS

- __ Franklin's Gull (es, wd: 2 to 6)
- __ Ring-billed Gull (wd: + to 2)
- __ California Gull (c, wd: + to > 60 on surface)
- __ Forster's Tern (es, wd: 2 to 12)

OWLS (P)

- __ Barn Owl (es)
- __ Great Horned Owl (c)
- __ Burrowing Owl (es, wd: + to 2, above surface)
- __ Short-eared Owl (es, wd: 2 to 12)

SWALLOWS (P)

- __ Bank Swallow (es)
- __ Cliff Swallow (es)
- __ Barn Swallow (es)

JAYS & CROWS (P- sometimes)

- __ Black-billed Magpie
- __ Common Raven

WRENS

- __ Marsh Wren (wd: 4 to 24 in emergent vegetation)

SHRIKES (P)

- __ Loggerhead Shrike

SPARROWS

- __ Song Sparrow
- __ White-crowned Sparrow

BLACKBIRDS & ORIOLES (P- sometimes)

- __ Western Meadowlark (es, wd: + to ms)
- __ Red-winged Blackbird (es, wd: + to 6 in emergent vegetation)

- __Yellow-headed Blackbird (c, wd: 6 to 24 in emergent vegetation)
- __Brown-headed Cowbird (c)

COMMON MAMMALS

- __Beaver (c, wd: 18 to >60, recently adapted to using common reed and tamarisk locally)
- __Muskrat (es, wd: 18 to 24)
- __Meadow Vole (es, wd: + to 2)
- __Raccoon (p, c, wd: + to 6)

COMMON AMPHIBIANS

- __Boreal Chorus Frog (es, wd: + to 6)
- __Bullfrog (p, c, wd: 2 to >12, in warmer water well fed or ground erupting artesian seeps or spring areas)
- __Northern Leopard Frog (es, wd: + to 6)
- __Wood House Toad (egg and tadpoles, wd: + to 6)

COMMON REPTILES

- __Painted Turtle (wd: + to 4 to 24)
- __Four-striped (wandering) Garter Snake (wd: + to 6)

COMMON FISH

- __Bullhead Catfish (wd: 12 to > 60)
- __Carp (c, es, wd: 6 to > 60, but in young age class numbers and annual growth in larger sizes locally)
- __Channel Catfish (es, wd: 24 - > 60, young age class numbers, annual growth)
- __Fathead Minnow (es, wd: 4 to 24)

COMMON MACROINVERTEBRATES

Key to Codes

Habitat Preferences

- a = Above surface on soil or plants*
- s = On or near surface (Neuston)*
- f = Free swimming in water*
- fl = Floating, but submerged, dispersed by current (Plankton like)*
- cl = Clinging to structure such as rocks or vegetation (Periphyton)*
- b = Bottom dwelling or borrowing (Benthon)*

WORMS - Freshwater Aquatic Worms (several species, es, b)

- __Thread Worms (b)

SHRIMP - Freshwater

- __Crayfish (c, b, f)
- __Cyclops Shrimp (es, f)
- __Daphnia Shrimp (es, f)
- __Fairy Shrimp (several species, es, f)
- __Scuds (c, f)

- _Seed Shrimp (es, f)
- _Tadpole Shrimp (es, f)
- _Brackish (mixosaline)
- _Brine Shrimp (c, s, f)
- _Other Fairy Shrimp (es, s, f)

SPIDERS (P) - Freshwater

- _Two common unknown species, locally called “web parachute spiders” (c, s)

MAYFLIES (Mostly Nymphs)- Freshwater

- _Burrowing Mayflies (c, b)
- _Free Ranging Mayflies (es, f)

DRAGONFLIES & DAMSELFLIES (P)

Freshwater Dragonflies

- _Western Dragonfly (aeshna, larvae, (c, cl) and adult (a))

Brackish or Mixosaline Dragonflies

- _Western Dragonfly (adult only (a,c))

Freshwater Damselflies

- _Blue Darners (larvae, (c, cl) and adult (a))
- _Bright Blues (larvae and adult)

Brackish or Mixosaline Damselflies

- _Blue Darners (adult only (a))

APHIDS - Freshwater

- _more than two unknown species that attack emergent vegetation, particularly common reed (a)

BEETLE - Freshwater

- _Predacious diving beetle (c, f, p)

TRUE FLIES

Freshwater

- _Midges (a, es, b, most numerous and most common of all species)
- _Mosquitoes (usually larvae form, a, c, s, in isolated, stagnant, or lentic environments, 5 – species, uncommon in WMA lotic water managed areas).
- _Deer Flies (c, p, cl, b, larvae mostly)
- _Horse Flies (c, p, cl, b, larvae mostly)

Brackish (mixosaline)

- _Midges (es, b, larvae and adults, a –reduced number of species)
- _Brine Flies (es, larvae, b, c, l, pupae, s, and adult, a –huge numbers)
- _Deer Flies (larvae, c, -reduced numbers)

BUTTERFLIES & MOTHS (Major herbivore of some emergent vegetation) Freshwater

Miller Moths (es, a, caterpillars)

Scape Moths (es, a, caterpillars)

MUSSELS - Freshwater

At least one unknown Mussel species suspected to as Western Pearlshell / Oregon Floater (b)

WORMS - Freshwater

Aquatic Worms (several species, es, b)

Thread Worms (b)

COMMON PLANTS

SUBMERGED AQUATICS (Aquatic Bed, Lacustrine, Seasonally to Permanently Flooded)

Fresh Water

- Coontail
- Muskgrass
- Curly Leaf Pondweed
- Horned Pondweed
- Sago Pondweed
- Eurasian Watermifoil

Brackish (Inland Saline Open, Mixosaline)

- Muskgrass
- Horned Pondweed
- Widgeongrass

FREE FLOATING AQUATICS (Open Water, Lacustrine, Seasonally to Permanently Flooded)

- Algae
- Duckweed
- Ducksmeal

EMERGENT MARSH (Shallow, Palustrine to Littoral Lacustrine, Seasonally or Semi-Permanently flooded, Deep Aquatic Bed, Permanent)

Fresh Water

- Common Three-square Bulrush
- Hardstem Bulrush
- Olney's Three-square Bulrush
- Broadleaf Cattail
- Common Reed/ Phragmites

Brackish (Inland Saline Marsh, Mixosaline)

- Hardstem Bulrush
- Olney's Three-square Bulrush
- Common Reed/Phragmites
- Alkali Bulrush

WET MEADOW (Shallow Emergent, Palustrine, Temporary Flooded)

Fresh Water

- Wire Bush/Baltic
- Beaked Spikerush

Brackish (Inland Saline Flats, Mixosaline)

- Barley Foxtail
- Saltgrass

MUDFLATS & MOIST SOIL (Shallow Emergent, Palustrine, Seasonally to Temporary Flooded)

Fresh Water

- Curley Dock
- Wild Millet

- Nodding Smartweed
- Perennial Pepperweed
- Cocklebur
- Red Goosefoot
- Teasel

Brackish (Saline Mudflat, Vegetated Mudflat, Mixosaline)

- Glasswort/Salicornia
- Pickleweed/Iodine Bush
- Fivehook Bassia
- Alkali Sacaton
- Seepweed

MOSTLY RIPARIAN BRUSH & TREES (Riverine, Lacustrine, and Channel)

Fresh Water

- Narrowleaf Cottonwood
- Russian Olive
- Black Willow
- Sandbar Willow

Brackish (Saline Channels to Flat, Mixosaline)

- Greasewood
- Saltcedar/Tamarisk

**Noxious and Invasive Weeds of Ogden Bay, Howard Slough, &
Harold Crane WMAs, and Willard Bay Upland Game Area
Biological Control Agent (BCA) Availability**

BCA Availability	Weed Common Name	Scientific Name
	<i>UPLAND WEEDS</i>	
	Bulbous Bluegrass	<i>Poa bulbosa</i>
	Bull Thistle	<i>Cirsium vulgare</i>
●	Canada Thistle	<i>Cirsium arvense</i>
	Cheat and Downy Brome	<i>Bromus spp</i>
●	Dyers Woad	<i>Isatis tinctoria L.</i>
●	Field Bindweed	<i>Convolvulus arvensis</i>
●	Hoary Cress	<i>Lepidium spp, formerly Cardaria spp.</i>
	Kochia	<i>Kochia scoparia L.</i>
●	Musk Thistle	<i>Carduus nutans</i>
	Perennial Pepperweed	<i>Lepidium latifolium L</i>
●	Poison Hemlock	<i>Conium maculatum</i>
	Scotch Thistle	<i>Onopordum acanthium L.</i>
	Western Water Hemlock	<i>Cicuta douglasii</i>
●	Yellow Starthistle	<i>Centaurea solstitialis</i>
	<i>RIPARIAN, WETLAND & AQUATIC WEEDS</i>	
●	Cattail	<i>Typha spp</i>
	Common Reed	<i>Phragmites australis</i>
	Curly Pondweed	<i>Potamogeton crispus</i>
●	Eurasian Watermilfoil	<i>Myriophyllum spicatum</i>
●	Purple Loosestrife	<i>Lythrum salicaria</i>
●	Tamarisk	<i>Tamarix spp</i>

**Howard Slough Waterfowl Management Area
Habitat Management Plan**

RDCC Project Number:

Habitat Council Review Date: April 24, 2018

RAC Review Date:

Director's Approval: _____ Date: _____

Mike Fowlkes, Director

Habitat Management Plan for Fillmore Wildlife Management Area Executive Summary – January 2018

Primary Purpose of Fillmore WMA:

The Fillmore WMA was formed to secure and improve critical winter habitat for big game. Big game and small game hunting is permitted on the Fillmore WMA. Mule deer, Rocky Mountain elk, Rio Grande wild turkey, ruffed grouse, and mourning dove are the most often hunted species. Wildlife viewing and photography is permitted on the WMA as well.

Wildlife Species:

The properties that make up the Fillmore WMA were purchased for mule deer and Rocky Mountain elk winter range. Other protected species that inhabit the WMA include Rio Grande wild turkey, blue grouse, mourning dove, cottontail rabbits, bobcats and cougars. Many songbirds, raptors including bald and golden eagles, and other species also use and inhabit the Fillmore WMA. Brown trout, rainbow trout, rainbow/cutthroat hybrids, and a few cutthroat trout inhabit Pioneer Creek, which flows into the Pioneer Unit, and the North Fork of Chalk Creek, which runs through the Brunson Parcel of the Cemetery Unit.

Habitat Improvement:

A significant number of habitat improvement projects have been conducted on the Fillmore WMA over the past decade. Pinyon and Juniper encroachment have been treated using Lop and Scatter, Chaining, and Mastication on the Youngsfield, Nixon, Circus Hollow, Black Cedar Hill, Cemetery, Halfway Hill, and the Kanosh-Dual Springs units. Future projects will focus on maintaining these treatments as well as addressing more Pinyon and Juniper encroachment on all units within the WMA. Treatments will be evaluated for re-seeding needs and for those determined to need seeding the seeding will take place concurrent with the treatment and rested from grazing for at least two years to allow the seeding to establish.

In 2000 all of the Maple Hollow Unit, and parts of the Nixon and Pioneer Units were burned in the Swains fire. Aerial seeding was done to rehabilitate the area. Portions of the Youngsfield unit were burned in the Lower Ebbs fire and were seeded and chained to rehabilitate the area.

The units that are not being treated will be monitored yearly for habitat quality. In the event that quality is unsatisfactory, the needed treatment will be carried out.

Prescribed fire may be used to treat the oak in the upper elevations of some of the units for decadency, and to promote new growth. This will be done in conjunction with the Division of Forestry Fire and State Lands, U.S. Forest Service, and the BLM.

Access Management:

The Fillmore WMA is crucial winter range for big game in the Fillmore herd (unit 21). Due to the sensitive nature of wintering big game and the potential for human use to further stress animals, an Access Management Plan has been developed for the Fillmore WMA (see Appendix E).

Maintenance Activities

The Habitat Seasonal crew walks all of the boundary fences annually and notes needs for major repairs or replacement while conducting routine fence maintenance and signing. Major repairs and/or replacements may be either handled by the seasonal crew or contracted based on funding and prioritization. Cattlemen who are grazing Division property also participate in fence maintenance with a specific focus on internal pasture fences and help with boundary fences as needed. Dedicated Hunters will also be utilized in fence maintenance activities as opportunities arise.

Private contractors or the Millard County Road Department will do road maintenance on an as needed basis. Specifically, Millard County Roads have agreed to annual maintenance on the recently improved road on the Pioneer unit and will also conduct annual maintenance on the improved road through the Circus hollow unit once the improvements are completed.

Habitat Management Plan for Fillmore Wildlife Management Area January 2018

I. Background Information

Purpose of Division Ownership

The Fillmore WMA was formed to secure and improve critical winter habitat for big game. All of the properties within the Fillmore WMA were purchased using a Pittman Robertson Federal Aid Grant (W-3-L), with the exception of one parcel which was acquired in a land exchange with the School and Institutional Trust Lands Administration (SITLA).

Big game and small game hunting is permitted on the Fillmore WMA. Mule deer, Rocky Mountain elk, Rio Grande wild turkey, ruffed grouse, and mourning dove are the most often hunted species. Wildlife viewing and photography is permitted on the WMA as well.

Historic Uses

Historically, livestock have been grazed on all of the properties within the Fillmore WMA. Portions of the Youngsfield and Pioneer Units may have been irrigated and farmed in the 1920s –30s, but only in a limited scope. In addition, some dry farming may have occurred on the Halfway Hill Unit at one time.

In 1957, the Division entered into an agreement with the U.S. Forest Service called the Granger Thye agreement. The agreement gave the Forest Service management authority over all the properties the Division owned within the Fillmore WMA for 20 years. During that time many of the properties were treated for juniper encroachment through chaining, cabling, Dixie harrowing, and reseeded. In addition, all of the properties were grazed in conjunction with the surrounding Forest Service allotments for the duration of the agreement. Several pieces of the Fillmore WMA were acquired after the expiration of the Granger Thye agreement and some have been treated while others have not.

Public Recreation Opportunities

Big game and small game hunting is permitted and encouraged on the Fillmore WMA with mule deer, Rocky Mountain elk, Rio Grande wild turkey, ruffed grouse, and mourning dove being the most common hunted species. Dispersed camping is allowed on the WMA. OHV and other motorized uses are limited to existing roadways and subject to the limitations specified in the Access Management Plan (See Appendix E). The county maintains a gun range on the Black Cedar Hill unit with target stands, trap and skeet stands, shooting stands, cement trap and skeet throwing bunkers, and an access road and parking area for the gun range.

Key Wildlife Species

The properties that make up the Fillmore WMA were purchased for mule deer and Rocky Mountain elk winter range. Other protected species that inhabit the WMA include Rio Grande wild turkey, blue grouse, mourning dove, cottontail rabbits, bobcats and cougars. Many songbirds, raptors including bald and golden eagles, and other species also use and inhabit the Fillmore WMA. Brown trout, rainbow trout, rainbow/cutthroat hybrids, and a few cutthroat trout inhabit Pioneer Creek, which flows into the Pioneer Unit, and the North Fork of Chalk Creek, which runs through the Brunson Parcel of the Cemetery Unit.

Grazing

Cattle grazing is used on the Fillmore WMA to reduce grasses and promote the growth of browse. Grazing is done in a high intensity short-term period, from May 15 to June 15 of each year. Regional UDWR personnel will evaluate each unit for habitat quality on a yearly basis. At that time it will be decided what units will be grazed for the following year. Currently grazed units include Youngsfield, Nixon, Pioneer, and

Halfway Hill. Additionally, all of the units within the Fillmore WMA may be made available as grassbank properties and several have been used as such in recent years as a result of impacts to grazers by wildfire and to facilitate livestock rest on completed habitat treatment projects.

II. Property Information

Property Descriptions

The Fillmore WMA consists of many parcels of land totaling 16,812.04 acres that lie along the I-15 corridor in Millard County, from Scipio Summit to 3 miles south of Kanosh (see Appendix A). This WMA was assembled through forty-seven purchases made between 1939 and 2013. All of the parcels on the Fillmore WMA are within the Sevier River drainage. The WMA consists of 12 units; the Youngsfield Unit, Nixon Unit, Maple Hollow Unit, Bennett Unit, Pioneer Unit, Circus Hollow Unit, Black Cedar Hill Unit, East Cemetery Unit, Halfway Hill Unit, Mortensen Unit, Kanosh-Dual Springs Unit, and the East 8-mile Unit.

The Youngsfield Unit is two parcels of land approximately 2½ miles northeast of the town of Holden and consists of 2,804.83 acres (see Appendix A). The large parcel is 2,764.83 acres of land in Township 19 South, Range 3 West, sections 16, 17, 19, 20, 21, and 28, (see Appendices B-1 to B-5, deeds for legal descriptions). The Ebbs Spring parcel is 40 acres located in Township 19 South, Range 3 West, section 22, (see Appendix B-1 administrators deed for legal description).

The Nixon Unit is 3,600.7 acres located approximately 2 miles east of Holden (see Appendix A), in Township 19 South, Range 3 West, sections 32 and 33, and in Township 20 South, Range 3 West, sections 3, 4, 5, 6, 8, 9, and 10, (see Appendices B-6 to B-10, warranty deeds for legal descriptions).

The Maple Hollow Unit is a full 640-acre section approximately 4 miles southeast of Holden (see Appendix A). The Maple Hollow Unit is located in Township 20 South, Range 3 West, section 16, (see Appendix B-1, administrator's deed for legal description).

The Bennett Unit is a 440-acre parcel of land located 1½ miles south of Holden (see Appendix A) in Township 20 South, Range 4 West, sections 13 and 14 (see Appendix B-11, warranty deed for legal description).

The Pioneer Unit lies ½ mile southeast of the Bennett Unit, and approximately 2½ miles southeast of Holden (see Appendix A). The Pioneer Unit consists of 2,238.4 acres of land located in Township 20 South, Range 3 West, sections 19, 20, 29, 30, and 31 (see Appendices B-1, and B-12 to B-16, deeds for legal descriptions).

Directly southwest of the Pioneer Unit and approximately 2½ miles northeast of Fillmore is the Circus Hollow Unit (see Appendix A). It is a 1389.67-acre parcel of land located in Township 21 South, Range 4 West; sections 1 and 2 and Township 20 South, Range 4 West; section 36 (see Appendices B-17 to B-19 and B-42, warranty deeds for legal descriptions).

The Black Cedar Hill (M-hill) Unit is located 1½ miles east of Fillmore (see Appendix A). This unit is a 1,260 acre parcel of land in Township 21 South, Range 4 West, sections 10, 13, 14, and 15 (see Appendices B-20 to B-25, warranty deeds for legal descriptions).

The Cemetery Unit is made up of two parcels of land totaling 641.53 acres (see Appendix A). The Brunson parcel of the Cemetery Unit is a 40 acre piece of land 3½ miles southwest of Fillmore in Township 21 South, Range 4 West, section 25 (see Appendix B-39 warranty deed for legal description). The large parcel is 601.53 acres 1 mile southwest of Fillmore in Township 21 South, Range 4 West, sections 27, and 34 (see Appendix B-26, warranty deed for legal description).

The Halfway Hill Unit consists of two parcels of land approximately 1½ miles south of Fillmore (see Appendix A). The small parcel is an 80-acre piece in Township 21 South, Range 4 West, section 32, (see Appendix B-27, warranty deed for legal description). The large parcel is a 2,040 acre piece in Township 21 South, Range 4 West, section 31; Township 22 South, Range 4 West, sections 6, 7, 8, and 9; and Township 22 South, Range 5 West, section 23 (see Appendices B-28 to B-32, warranty deeds for legal descriptions).

The Mortensen Unit lies 2 miles northwest of the town of Kanosh (see Appendix A). It is an 808.73 acre piece of land located in Township 23 South, Range 5 West, sections 10, 11, and 12 (see Appendix B-33, warranty deed for legal description).

The Kanosh-Dual Springs Unit of the Fillmore WMA is made up of three pieces of land totaling 720.53 acres (see Appendix A-12). This unit is approximately 1 mile south of the town of Kanosh. The Kanosh parcel is the largest parcel at 600.54 acres in Township 25 South, Range 5 West, sections 28 and 33 (see Appendices B-32 and B-34, for legal descriptions). The northern Dual Springs parcel is in Township 25 South, Range 5 West, section 29, and consists of 80 acres (see Appendix B-35, warranty deed for legal description). The southern parcel is a 39.99-acre piece in Township 25 South, Range 5 West, section 32, (see Appendix B-36, warranty deed for legal description).

There is one entire unit and three small parcels of property within the Fillmore WMA that have little benefit to wildlife and are too small and isolated to manage properly. The unit is the East 8 Mile Unit, which consists of 4 parcels of land with a total acreage of 322.15, five to six miles northeast of Holden (see Appendix A). It is the only unit in the Fillmore WMA that contains parcels of land on the west side of I-15. The largest parcel is 241.22 acres and lies on the west face of the Church Mountains, in Township 19 South, Range 3 West, section 4 and 5 (see Appendix B-37, warranty deed for legal description). One other parcel consisting of 35.14 acres lies on the west side of I-15 approximately 1 mile southwest of the largest parcel in Township 19 South, Range 3 West, section 8 (see Appendix B-38, warranty deed for legal description). The two other parcels of the East Eight Mile Unit lie on the west side of Interstate 15 approximately 5 miles from the town of Holden in Township 19 South, Range 3 West, sections 4 and 9. The parcel in section 4 is 32.91 acres, while the parcel in section 9 is 12.88 acres (see Appendix B-37, warranty deed for legal description). The three small properties scattered throughout the Fillmore WMA total 177.61 acres (see Appendix A). These pieces of land will be referred to as the disposal properties in this plan (see Appendices B-39 to B-41, warranty deeds for legal descriptions).

Land Acquisition History

The Youngsfield Unit was formed through six land purchases. These are:

- June 26, 1945 from the estate sale of Joseph H. Young (see Appendix B-1). Approximately 1,000 acres of this purchase fall within the Youngsfield Unit.
- September 14, 1961 from Chester R. and Stella Johnson (see Appendix B-2).
- August 31, 1962 from Mark S. and Ruth B. Johnson, and Chester R. and Stella Johnson.(see Appendix B-3).
- May 17, 1968 from Hart and LaNola Johnson(see Appendix B-4), and Mark S. and Ruth B. Johnson (see Appendix B-5).

The Nixon Unit was formed through five land purchases. These are:

- June 7, 1941 from Carl and Vera A. Nixon (see Appendix B-6).

- April 14, 1942, from Armina S. Nixon (see Appendix B-7).
- April 11, 1949 from LaMar and Phyllis C. Nixon (see Appendix B-8).
- November 26, 1949 from George W. Nixon (see Appendix B-9).
- May 29, 1992 from Roger and Marie Stanworth (see Appendix B-10).

The Maple Hollow Unit was formed through a single land purchase as follows:

- June 26, 1945 the estate sale of Joseph H. Young (see Appendix B-1). The Maple Hollow Unit made up approximately 640 acres of the land purchased from Mr. Young's estate.

The Bennett Unit was formed through a single land purchase as follows:

- July 5, 1940 from Mark L. and Ethelyn A. Bennett (see Appendix B-11).

The Pioneer Unit was acquired in a series of six purchases. These are:

- December 16, 1939 from S. O. and Myrle P. Hunter (see Appendix B-12).
- December 9, 1939 from Wilford S. Badger (see Appendix B-13).
- July 5, 1940 from Ray and Lucille Monsen (see Appendix B-14).
- June 26, 1945 from Joseph H. Young's estate sale (see Appendix B-1).
- 1946 from William Robert and Lorraine M. Tyndale (see Appendix B-15).
- January 6, 1971 from the United States of America, Bureau of Land Management (see Appendix B-16).

The Circus Hollow Unit was created with four land purchases as follows:

- January 6, 1941 from C. H. and Hazel B. Day and in a second transaction from Ray and Lucille Monsen (see Appendix B-18).
- July 25, 1958 from Harold and Mary Jean Edwards in a land trade (see Appendix B-19).
- March 18, 2013 from SITLA in a land exchange (see Appendix B-42).

The Black Cedar Hill Unit was formed from five land purchases as follows:

- January 4, 1941 from Alma and Evadine Littledike (see Appendix B-20).
- June 9, 1941 from Verl Carling (see Appendix B-21a).
- June 5, 1959 sold 80 acres of the Carling purchase to Heber and Clark Huntsman (see Appendix B-21b).
- June 1941 from F. S. and Prudence Robinson (see Appendix B-22).
- July 1, 1957 from Heber and Maggie Huntsman, and Clark Huntsman (see Appendix B-23).
- July 15, 1953 from A. LaVoy and Elaine S. Kimball, (see Appendix B-24).
- April 30, 2002 from Devon D. Inc. in a land exchange (see Appendix B-25).

The Cemetery Unit was formed from two land purchases as follows:

- January 7, 1940 from Peter L. Brunson (see Appendix B-39).
- December 6, 1968 from Milton L. and Noreine Warner (see Appendix B-26).

The Halfway Hill Unit was formed from six land purchases as follows:

- July 5, 1940 from Hazen F. and Harriet Stevens (see Appendix B-27).
- July 6, 1940 from Otis and Verna Walch (see Appendix B-28).
- July 8, 1940 from Percy N. and Clara Brown (see Appendix B-29).
- March 22, 1941 from N. S. Larsen (see Appendix B-30).
- March 31, 1941 from Evan and Estella Theobald (see Appendix B-31).
- April 24, 1957 from the Bureau of Land Management (see Appendix B-32).

The Mortensen Unit was formed through a single land purchase as follows:

- December 4, 1967, from Lloyd P. and Leola S. George (see Appendix B-33).

The Kanosh-Dual Springs Unit was formed through four land purchases as follows:

- November 28, 1939 from Ruby G. Whitaker (see Appendix B-34).
- January 15, 1940 from James E. and Kittie Clyde Charlesworth (see Appendix B-35).
- April 29, 1940 from William H. and Mary E. Staples (see Appendix B-36).
- April 24, 1957 from the BLM (see Appendix B-32).

The East 8 Mile Unit was formed from two different land purchases as follows:

- May 28, 1941 from Francis M. Lyman Jr. and his wife Clara May Lyman (see Appendix B-37).
- June 17, 1941 from Elizabeth A. Smith (see Appendix B-38).

On January 7, 1940 the Division purchased the first of the properties that are now identified for disposal from purchased from Peter L. Brunson (see Appendix B-39). The second parcel in the disposal properties was purchased from Wilford C. Johnson on November 28, 1973 (see Appendix B-40). The final disposal property was purchased from Milton B. and Margaret B. Stevens on January 24, 1974 (see Appendix B-41).

Pittman-Robertson federal aid grant number W-3-L through the U.S. Fish and Wildlife Services' Wildlife and Sportfish Restoration Program (WSFR) was used to purchase all of the properties in the Fillmore WMA with the exception of one parcel which was acquired in a land exchange with SITLA.

Encumbrances

Some of the previous owners of the land that makes up the Youngsfield Unit reserved mineral rights on parts of the unit (see Appendices B-4 and B-5), and in the early 80's seismic survey permits were granted to Phoenix Geophysics Inc (see Appendix C-1). William Clee Johnson was given a stock drive easement through the southern end of the unit starting in 1969 (see Appendix C-2). The Utah Department of Transportation was given a right of way for the construction and maintenance of Interstate 15 (see Appendix C-3). There is also a road easement granted to the Forest Service to access land east of the Youngsfield Unit (see Appendix C-4). Holden Irrigation Company was given an easement for constructing and maintaining a pipeline across the Youngsfield Unit (see Appendix C-5). Currently there are three well rights on the Youngsfield Unit that belong to one of the previous owners of the property who is dead. When the Division bought the property in 1945 the Water Rights to the wells should have been transferred into the Division's name but never were (see Appendix C-6 to C-8).

When the Nixon Unit was purchased two of the previous owners kept the mineral rights to the part of the property purchased from them (see Appendix B-9 and B-10). In addition, a right of way was given to Carl Nixon to pipe water from Oak Spring on the Nixon Unit to adjacent private land (see Appendix C-9).

There are no known encumbrances, limitations or existing rights of way on the Maple Hollow Unit.

Millard County owns a right of way for a county road that runs through the Bennett Unit to the Pioneer Creek drainage. In addition, there is an access easement along the eastern edge of the unit to allow access to adjacent private land from the Maple Hollow Road. Holden Town maintains an easement for a culinary water pipeline that runs through the Bennett Unit (see Appendix C-10).

Millard County has a right of way for the Pioneer Creek Road through the southern part of the Pioneer Unit. Holden Irrigation Company maintains an easement for a water pipeline to divert water from Pioneer Creek to nearby farms (see Appendix C-11). Also, a special use permit was granted to Geophysical Service Inc. to perform seismic surveys on the Pioneer Unit in the early eighties (see Appendix C-12).

SITLA has reserved the mineral rights on the portion of the Circus Hollow Unit that was acquired in the 2013 SITLA land exchange (see Appendix B-42).

Millard County maintains a road right of way to Frampton Heights Subdivision through the Black-Cedar Hill Unit. In addition, the County had a special use agreement with the Division for a gun range and an access road to the gun range on the unit which is now expired (see Appendix C-13). In the 1980s, a special use agreement was made to allow seismic surveys on the unit (see Appendix C-2). Finally, Juanita McCall was granted an easement for a memorial to her son, who was murdered just off the Frampton Heights access road in the spring of 1995 (see Appendix C-14).

The Cemetery Unit has no known encumbrances or limitations. However, a seismic survey was conducted on the property in the early eighties by Phoenix Geophysics Inc (see Appendix C-15). In addition the previous owner of the Brunson parcel reserved the right to operate a rock quarry on the parcel for 50 years after the date of the purchase. That right expired on January 7, 1990 (see Appendix B-39).

The United States of America (Forest Service) was granted an easement to build a drift fence on the Halfway Hill Unit in 1946. This easement is no longer being used, but because the Division has not been notified of cessation of use, the easement is still in effect (see Appendix C-16). Two adjacent private landowners, Mr. Fuller, and Mr. Searle, maintain an access road right of way through the unit. In addition, the Forest Service maintains the same road for access to federal land beyond the private land. Finally, Ralph Duncan has a right of way for a diversion ditch from Pine Creek to his land adjacent to the Halfway Hill Unit.

The previous owner of the property has reserved the mineral rights to the Mortensen Unit (see Appendix B-33). The Kanosh Band of the Paiute Indian Tribe (Band) owns most of the Water Rights to Oak and Mortensen Springs, while the Division owns a small percentage to Mortensen Spring. Oak Spring is on Forest Service land adjacent to the west side of the Mortensen Unit. Mortensen Spring is within the Mortensen Unit (see Appendix B-33). The Band has developed both Oak and Mortensen Springs for culinary and irrigation usage. As a result, there is no longer surface water at Mortensen Spring. However, there is still some surface water just off the unit at Oak Spring. A right of way was granted to the Band for a pipeline across the unit from Oak Spring, and from Mortensen Spring, into their housing development. The Band agreed to build a stock-watering pond on Mortensen Spring for the Division's Water Rights, and also to rehabilitate the areas disturbed when the springs were developed with native shrubs and grasses. At this time neither of the agreed to terms have been carried out.

The Kanosh-Dual Springs Unit of the Fillmore WMA only has one known encumbrance. South Farm LLC (Missouri Flats LLC) has an easement for a ditch to carry water from a nearby spring, across the Dual Springs South Parcel to land they own.

The East 8 Mile Unit of the Fillmore WMA has many rights of way and easements that cross it. When the property was purchased an ingress/egress road right of way was given to Elizabeth Smith for access to property she owned adjacent to the DWR property (see Appendix B-38). In 1944, the Utah State Road Commission (UDOT) was given a right of way for Highway 91 through the East 8 Mile Unit (see Appendix C-17a to C-17b). Later on, the Utah Department of Transportation was given a right of way for interstate 15 (see Appendix C-3). In addition, they were granted an easement for a frontage road fence (see Appendix C-18). Kern River Gas Company was granted an easement and special use agreement to install and maintain an underground natural gas pipeline across the East 8 Mile Unit (see Appendices C-19). Lastly, an easement was granted to Williams Communication Inc. for an underground fiber optic cable (see Appendix C-20). There are no known Water Rights on the East 8 Mile Unit. This unit is unfenced and is grazed in conjunction with the surrounding federal land. At this time no formal agreement exists between the Division, the Forest Service, the BLM, or the cattlemen that graze this area.

Youngsfield, Nixon, Bennett, Pioneer, Circus Hollow, Black Cedar Hill and Halfway Hill units have been grazed under agreements in the past. Grazing is proposed to be used in the future as a management tool on the WMA to increase the production and establishment of browse species by reducing the ability of grasses to compete for light, water and nutrients. The duration, location, and number of animals allowed will be decided on a year to year, and unit by unit basis depending on the quality of big game winter range on the individual units of the WMA.

III. Property Inventory

Existing Capital Improvements

The Youngsfield Unit has several established roads within it. The large parcel's borders are entirely fenced. The Large Parcel also has two internal fences, one bisecting the unit north - south, and another splitting the northern portion east - west. The internal fences are in fair to poor condition and need to be replaced or repaired. There are also two cattle troughs on the large parcel. Water is piped from Ebbs Spring, which is on Forest Service land. However, the Forest Service owns the Water Right to Ebbs Spring and no formal agreement exists for them to provide water to the unit. There are three hand-dug wells on the unit, two on the Large Parcel and one on the Ebbs Spring Parcel (see Appendix C-10 to C-12). None of these wells are in use or producing water, and are still in the name of the original owner of the property (Joseph H. Young). There is some potential for fence post cutting on the Youngsfield Unit but at this time fence posts have only been cut by Division employees and dedicated hunters for Division property fences.

The Nixon Unit has several roads that run through it. The unit is entirely fenced, and has one internal fence splitting it into north and south parcels. This fence is in serious need of repairs or replacing. There is also a six-foot chain link fence surrounding a large sinkhole one mile east of Oak Spring built in 1996 to protect humans and animals from falling. The Division has some water rights to Oak Spring and has fenced around the spring itself (see Appendix B-35). In addition, water is piped from the spring to a nearby water trough. Another pipe takes some of the water off of Division property to nearby private land. Post cutting could be done on the unit as well.

The Maple Hollow Unit has a border fence. At this time there is one road that runs out into the property and access roads for trucks and OHVs that were made to deliver materials needed for the fence. All of the roads within the unit are proposed to be closed once fencing is complete.

The Bennett Unit has one internal road that is maintained by Millard County, and one right of way road that runs along its eastern boundary. The unit is completely fenced with no internal fences.

The Pioneer Unit has several internal roads, one of which is a county road. The unit is completely fenced, but has no internal fences. There is a water trough with a pipe running to it from Pioneer Creek. The troughs and rights to the water are owned by the BLM. Holden Irrigation Company maintains a diversion pipe that runs from Pioneer Creek, on Division land, to adjacent private land.

The Circus Hollow Unit has several roads that run through it with a proposed re-route and improvement on one of them to be completed in cooperation with Millard County in the near future. In addition, this unit is completely fenced. There is one internal fence that separates the 80 acres of the unit in section 1 from the rest of the unit. The fence surrounding the piece acquired in the 2013 SITLA land exchange is new and was built after the acquisition. All of the fences in the unit are in good condition.

There is a county road that runs through the Black Cedar Hill Unit to the Frampton Heights Subdivision. In addition, there are several other roads within the unit. The unit is entirely fenced and has two internal fences that are in fair shape. The county maintains a gun range on the unit with target stands, trap and skeet stands, shooting stands, cement trap and skeet throwing bunkers, and an access road and parking area for the gun range. There is also a small memorial slightly off the Frampton Heights Road (see Appendix C-18). There are two ponds built to capture water on an ephemeral stream that runs through the unit. The ponds hold water through the early summer, but then dry up.

There is a small-unnamed seep on the Brunson Parcel of the Cemetery Unit. In addition, the North Fork of Chalk Creek runs through the Brunson Parcel. The Large Parcel has two roads that run into it, and it is entirely fenced, however, portions of the fences are in a state of disrepair and need to be fixed. Dry Creek runs through the Large Parcel, but it dries up in the early to late spring of each year.

There is an access road to private ground and federal land that runs through the Halfway Hill Unit. There are several other roads within this unit. The unit is entirely fenced and has two internal fences. All the fences are in good condition, except the west boundary fence, which is in poor shape and may not be on the property line. Pine Creek, an ephemeral stream, runs through the unit in the spring. The 80-acre, stand-alone parcel of the unit is unfenced and has no capital improvements.

The Mortensen Unit has one road that runs through a corner of the property and an internal road that runs to Mortensen Spring. This unit is fenced but the fences are in extremely poor condition and need to be replaced. There is also an internal fence surrounding Mortensen Spring put up by the Kanosh Band of the Paiute Indian Tribe. The Division owns partial rights to Mortensen Spring (see Appendix B-35), but the Kanosh band has developed the spring for culinary use leaving no surface water on the unit. A water collection system is in place at Mortensen Spring that is owned by the Kanosh band. In addition, a piped water line runs across the unit to the nearby reservation.

There are no boundary fences on either of the Dual Springs parcels of the Kanosh-Dual Springs Unit. The Kanosh parcel is fenced and the fences are in good shape. There are several unimproved roads on the Kanosh parcel. There is a ditch right-of-way that carries water across the Dual Springs south parcel.

The East 8 Mile Unit has one county road running through it and several unmaintained roads running to adjacent land. The unit has been fenced on the east side of the largest parcel, along the frontage road to I-15, by the Utah Department of Transportation.

There are no existing capital improvements on the disposal properties in the Fillmore WMA. Some of these properties may have been partially fenced in by adjacent landowners without Division help.

Cultural Resources

Much of the area within the WMA has been disturbed at some point, either by farming practices or habitat treatments. No new surface disturbing activities will be completed without prior cultural resource surveys. Significant cultural resources will be avoided during surface disturbing activities. There are 3 hand dug wells on the Youngsfield unit that are no longer in use.

Sensitive Species

Sensitive Species that occur in Millard County and are likely to occur on the Fillmore WMA include: Bald Eagle, Big Free-tailed Bat, Bonneville Cutthroat Trout, Dark Kangaroo Mouse, Ferruginous Hawk, Fringed Myotis, Lewis's Woodpecker, Long-billed Curlew, and Townsend's Big-eared Bat.

Important Fish and Wildlife Habitats

All of the properties within the Fillmore WMA are important winter range for deer and elk. The I-15 corridor severely diminished the amount of winter range accessible to the Pahvant herds of deer and elk. Due to the limited access to most of the historical winter range, the Fillmore WMA is heavily used by the Fillmore deer herd (herd unit 21) and the Fillmore Pahvant elk herd (herd unit 21). The objectives for deer herd unit 21 are 18-20 bucks per 100 does and a population of 12,000 deer. The most recent herd estimate from 2017 shows the deer herd below objective at 8800. Elk herd unit 21 has an objective of 1600 and the most recent estimate of herd size from 2017 has them slightly below objective at 1500. Since I-15 has cut off access to much of the historical winter range the Fillmore WMA is an important tool in the management of big game herds. Therefore, it is important to improve and maintain the winter range on the WMA.

Most of the properties within the Fillmore WMA are substantial yearlong Rio Grande turkey habitat and some of the units are critical winter turkey habitat. Although the land was originally purchased for big game use, there is significant habitat for wild turkey, cottontail rabbits, mourning dove, blue grouse, cougar, bobcat and many species of raptors.

There are small wild populations of brown trout, rainbow trout, cutthroat trout and cutthroat rainbow hybrid trout in Pioneer Creek and the North Fork of Chalk Creek. Pioneer Creek runs 1/3 mile into the Pioneer Unit before drying up. The North Fork of Chalk Creek runs through the Brunson parcel of the Cemetery Unit. Both creeks are rated as class 3 naturally reproducing trout fisheries.

Habitat Types, Range and Watershed Conditions, and Habitat Limitations

The Youngsfield Unit big game winter range is in fair to good condition. Juniper encroachment on the east side of the unit has been treated recently and will continue to be monitored for future treatments. Turkey habitat on the Youngsfield Unit is in good condition, as there are fairly large stands of Gambel oak on mountain slopes on the east portion of the large parcel, and in the Ebbs Spring parcel. In addition, the riparian zone on and near the Ebbs parcel is excellent turkey habitat. The noise and disturbance from I-15 reduces its value for big game and wild turkey along the western edge of this unit.

The Nixon Unit big game winter range is in fair to good condition. Juniper encroachment has been a limiting factor for browse species on this unit; however, the Division has begun to address this with current and future treatments. There is a Utah Big Game Range Trend Study transect on this unit (21B-10), which showed in 2017 that the browse species on this unit are stable to decreasing with an increasing trend of juniper encroachment. Trends for grasses have been stable to slightly improving, but there is a concern that much of that grass is the invasive bulbous bluegrass. The turkey habitat on the unit is in good condition, with mature Gambel oak around Oak Spring and plenty of grasses in the Swains fire reseed area. There are several surplus, and unauthorized roads that have been put in on the unit.

The Maple Hollow Unit is in fair condition for big game winter range. The reseeded area after the Swains fire is establishing well including the shrub species. The grasses and forbs have regenerated quite well and

make up most of the edible vegetation for big game on this unit. Due to the fire reducing the amount of mature Gambel oak, turkey habitat and cover in this area are has been reduced. The oak stands are growing back nicely. Human use of this unit is fairly light with little negative impacts.

The Bennett Unit winter range is in fair condition. This unit also has a Big Game Range Trend Study transect on it (21B-7), which showed increases in Pinyon and Juniper encroachment which threaten the stable browse trends in 2017.

The Pioneer Unit deer winter range is in fair to good condition. There is also a range trend transect on this unit. Browse was hurt by the 2000 Swains fire but has been increasing since. Pinyon and Juniper encroachment is increasing as is the presence of bulbous blue grass. Pioneer Creek runs through the upper portion of this property providing excellent habitat for turkeys. There is a vigorous oak community coming back from the 2000 Swains fire, especially at mid elevations, which also provides good turkey habitat. There are small residual pockets of juniper that provide some cover for deer and roost trees for turkeys, however, tree cover is scarce. Reseeding has resulted in a vigorous community of grasses and forbs, and browse establishment looks promising. There are small wild populations of brown, rainbow trout, cutthroat trout and rainbow cutthroat hybrids in Pioneer Creek, which runs through the Pioneer Unit. In 1974-1976 and then from 1978-1980, fingerling brown trout were stocked yearly. Browns were first introduced to Pioneer Creek in 1955. In addition, 2,000 to 3,000 rainbow trout were stocked from 1965 to 1981. Pioneer Creek has not been stocked since that time.

The original parcel of the Circus Hollow Unit was thinned in 1997-98 to improve elk habitat. The parcel acquired in the SITLA land exchange of 2013 was also treated that same year for Pinyon and Juniper encroachment and is establishing well. There is a good stand of oak, and several grassy meadows on this unit. Water is scarce which limits its value as turkey habitat, especially on the westernmost parcel. The Circus Hollow Unit is used heavily by elk in the winter and has become a popular elk viewing area. However, because of this, the elk are often pushed off the unit and onto adjacent private agricultural lands creating depredation problems.

The Black Cedar Hill Unit is good winter range for deer. There is a moderate problem with juniper encroachment but hand-thinning projects are helping to solve this problem as well as a chaining project that was carried out in 2011. The Big Game Range Trend Study transect on this unit (21B-6) showed the browse and herbaceous understory trends to be stable with some slight decreases in browse with the continued encroachment of Pinyon and Juniper in 2017. Turkey habitat on this unit is good to excellent. The Black Cedar Hill Unit and surrounding land has become a popular place to use OHVs. This has resulted in a degradation of habitat due to unauthorized trails being made on the unit.

The Large Parcel of the Cemetery Unit is good to excellent deer winter range with good stands of cliffrose. There is a moderate to heavy juniper encroachment problem on the parcel. The range study transect on this parcel (21B-15) showed the decreases in sagebrush and increases in oak following a 2008 harrow treatment with those trends improving from then until 2017. The invasive bulbous blue grass has also been noted on this site. The parcel is not used by elk, but is used heavily by deer from late fall to mid spring. Turkey habitat on the Large Parcel is excellent when Dry Creek is flowing, however, Dry Creek usually dries up in early to mid summer. The Large Parcel has become a popular nighttime gathering place for locals, and is very close to residential areas. Because of this deer are often pushed toward the east side of the unit away from people. Litter and degradation of habitat stemming from the nighttime gatherings and parties is a concern. The Brunson Parcel of the Cemetery Unit is excellent summer turkey habitat and fair yearlong habitat for deer and elk. The North Fork of Chalk Creek provides high quality habitat for rainbow trout, brown trout, cutthroat trout and cutthroat rainbow hybrids trout. Chalk Creek and its tributaries have been stocked numerous times with rainbow and brown trout. Cutthroat trout have been stocked in a more limited

scope. It is unknown if the cutthroat trout and the cutthroat/rainbow hybrids in the North Fork of Chalk Creek are Yellowstone or native Bonneville cutthroat trout. The North Fork of Chalk Creek itself has not been stocked directly since prior to 1965.

Juniper encroachment is only moderate on the Halfway Hill Unit and received some treatment in 2011. The deer winter range on the unit is good, but some browse species are becoming decadent. Very few elk use this area, but deer use is quite heavy. Turkey habitat is in good condition on the unit, and a small flock of turkeys inhabit the area. However, as one might expect on this dry rangeland, the flock spends most of the time on nearby Meadow Creek and adjacent private land where there is more water. The Paiute OHV trail crosses this unit and several unauthorized roads and trails have been established off of the main trail. This has resulted in a loss and degradation of suitable habitat on the unit.

The Mortensen Unit is good elk and fair deer winter range. The browse species on the unit are decadent, and there is only light use of the unit from deer. The eastern side of the unit is good turkey habitat; however there is little water on the unit since the development of Mortensen Spring. Turkey habitat and usage is better on adjacent Forest Service land around Oak Spring, where there is still surface water.

Deer use the Kanosh-Dual Springs Unit heavily in the winter. The range is fair to good; Juniper encroachment was treated in 2008 and continues to be monitored for its impact to the sagebrush and cliffrose. The turkey habitat is excellent, especially along the riparian corridor formed by the ditch right-of-way across the unit. Turkey use is extremely heavy with a high population density. There are a few unauthorized roads on this unit that have damaged some habitat.

The East 8 Mile Unit is largely grassland with a large percentage of it lying on the west side of I-15. In addition, the close proximity to I-15 and the frontage roads greatly reduces its value for winter range. Due to the open nature of the terrain, it also has limited value for wild turkey, and other forest species.

Human Use-Related Problems

The construction of I-15 has limited the winter range for big game animals to the areas east of I-15. The creation and use of unauthorized roads and trails as well as unauthorized overland travel by motor vehicles results in habitat degradation and fragmentation and increases stress to wintering wildlife. These unauthorized uses seem to be proliferating with the growing popularity of shed antler gathering. In some specific areas traditional gathering sites for camping or other activities has resulted in habitat degradation and trash associated with these activities left on the landscape.

Adjacent Land Uses and Potential Impacts

BLM, Forest Service, Utah School and Institutional Trust Lands (SITLA) and private lands border the Fillmore WMA. Livestock grazing takes place on most of the adjacent federal and SITLA lands. A large percentage of the private land is grazed as well. In addition, many private lands adjacent to or nearby the Division lands are farmed, with alfalfa being the main crop. Due to the amount of grazing that occurs on adjacent lands, fences and fence maintenance are important to avoid livestock trespass. Habitat improvement projects are important to minimize wildlife depredation on surrounding agricultural lands.

Zoning and Land Use Ordinances

All of the units in the Fillmore WMA are zoned for forest and range, and there is little danger of adjacent land being heavily developed or urbanized.

IV. Management Goals and Objectives

The management of these WMA's will take into account the goals, objectives, and strategies of

other Division planning efforts. These other plans are briefly discussed below.

UDWR Strategic Plan

The Fillmore WMA supports several aspects of the UDWR Strategic Plan. Under the Agency goal to “Increase programs that promote teamwork...” the Fillmore WMA plan implements a strategy utilizing employees of multiple sections to identify and address needs on the WMA. The Resource goal to “Expand wildlife populations and conserve sensitive species by protecting and improving wildlife habitat” is supported through the conservation and improvement of the lands within the WMA.

Wildlife Action Plan

While the Fillmore WMA was specifically developed for big game winter range there are multiple ways its management supports the Wildlife Action Plan. The WMA is home to and conserves habitat for several Species of Greatest Conservation Need. This plan also helps to protect and restore several Key Habitat types identified in the Wildlife Action Plan including Gambel Oak, Lowland Sagebrush, and Mountain Sagebrush.

Wildlife Species Management Plans

Unit management plans for deer and elk on Unit 21 call for direct range improvements on winter range, working with partners through Utah’s Watershed Restoration Initiative for fire rehabilitation, managing vehicle access in UDWR lands to limit disturbance to wintering big game, and dealing with Pinyon and Juniper encroachment through the use of treatments. All of these directives have historically been implemented and will continue to be implemented on the Fillmore WMA.

V. Strategies for Property Management

Development Activities

Most of the units in the Fillmore WMA already have established property boundaries and are fenced. However, some of the units have boundaries that need to be surveyed and fences either constructed on the boundary or moved to the correct boundary. In some instances rather than moving a fence documenting of the discrepancy with the adjacent landowner, the US Forest Service, will be used to maintain ownership while facilitating common sense on the ground management. The Ebbs Spring Parcel of the Youngsfield Unit needs to be surveyed and fenced. The 80-acres of the Nixon Unit that were purchased from the Stansworths need to be fenced. The small parcel of the Halfway Hill Unit needs to be surveyed and fenced as well. The Brunson Parcel of the Cemetery Unit needs to be surveyed and fenced or the riparian areas need to be fenced to exclude livestock grazing. In addition, the west side of the large parcel of the Halfway Hill Unit needs be resurveyed, and the fence moved to the correct property line. Large parts of the Mortensen Unit fence are in disrepair and may not be on the property line; so the unit needs to be surveyed and refenced. None of the disposal properties or the East 8 Mile Unit are fenced or signed. Decisions regarding fence construction and moving to property lines will be based on available funding relative to the value of the property to wildlife. Surveys may need to be done to establish exact sizes and boundaries of the parcels for disposal. Because these parcels have been identified for disposal, there is no need for any capital improvements.

Most of the units in the Fillmore WMA have signs posted at the major access points. However, some signs are missing and there is a need to post signs at additional access points. Signs could also be placed in conspicuous places on fences and in high traffic areas.

Surplus and unauthorized roads are a problem on much of the Fillmore WMA. An access management plan has been formed with input from the Habitat Section, Wildlife Section, and Law Enforcement and is in varying stages of implementation based on funding and prioritization. Most of the units have roads that are damaging to habitat and will be closed permanently. Still others have roads that are necessary for

management and access, but cause disturbance to big game using the properties in the winter. Such roads will be closed from January 1 to April 30 of each year reducing disturbance to wintering big game. Right-of-way roads, through roads, and roads that can be used without disturbing wintering wildlife will be left open year-round (see Appendix E).

Annual Maintenance Activities

The Habitat Seasonal crew walks all of the boundary fences annually and notes needs for major repairs or replacement while conducting routine fence maintenance and signing. Major repairs and/or replacements may be either handled by the seasonal crew or contracted based on funding and prioritization. Cattlemen who are grazing Division property also participate in fence maintenance with a specific focus on internal pasture fences and help with boundary fences as needed. Dedicated hunters will also be utilized in fence maintenance activities as opportunities arise.

Private contractors or the Millard County Road Department will do road maintenance on an as needed basis. Specifically, Millard County Roads have agreed to annual maintenance on the recently improved road on the Pioneer Unit and will also conduct annual maintenance on the improved road through the Circus Hollow Unit once the improvements are completed. Private contractors, dedicated hunters, and Division employees will be used to close unneeded and unauthorized roads. On right-of-way roads, the owners of the right-of-way will handle the maintenance.

Noxious weeds, namely white top, have been a problem in the past on some of the units. The Millard County Extension Agent has handled weed control in the past on the WMA and then billed the Division for services rendered. This system has functioned fairly well and will continue to be used for weed control in the future. Habitat seasonals may also participate in weed control on the WMA.

In high traffic areas of the Fillmore WMA signs are often removed and/or damaged. A sign replacement budget will be requested annually to allow for replacement of missing, defaced, and damaged signs as part of the annual regional WMA maintenance proposal.

Dedicated hunters, Division employees, livestock operators and private contractors will conduct maintenance of spring developments, pipelines, troughs, diversions, and ponds that are owned by the Division. In addition, BLM and Forest Service employees may be used to maintain pipelines that come from springs owned by those agencies. The portion of Pioneer Creek that crosses the Pioneer Unit should be fenced to keep cattle off of the riparian area and improve habitat for fish. Dedicated hunters, Division employees, and private contractors will do this.

VI. Strategies for Habitat Management

Unit Management Plans for Wildlife Species

Interstate 15 has virtually cut off access to winter range on the west side of the freeway for big game which summer in the Pahvant range. The lands that make up the Fillmore WMA were originally purchased for big game winter habitat and have been managed accordingly. The Fillmore WMA will continue to be managed as important winter range for big game, and steps are proposed to be taken to improve winter range conditions. Wild turkey habitat will also be improved on the units that have good populations of the birds.

Unit management plans for deer and elk on Unit 21 call for direct range improvements on winter range, working with partners through Utah's Watershed Restoration Initiative for fire rehabilitation, managing vehicle access in UDWR lands to limit disturbance to wintering big game, and dealing with Pinyon and Juniper encroachment through the use of treatments. All of these directives have historically been implemented and will continue to be implemented on the Fillmore WMA.

Habitat Improvement Plan

A significant number of habitat improvement projects have been conducted on the Fillmore WMA over the past decade. In areas that have experienced Pinyon and Juniper encroachment, Lop and Scatter, Chaining, and Mastication treatments have been completed on the Youngsfield, Nixon, Circus Hollow, Black Cedar Hill, Cemetery, Halfway Hill, and the Kanosh-Dual Springs units. Future projects will focus on maintaining these treatments as well as addressing more Pinyon and Juniper encroachment on all units within the WMA. Treatments will be evaluated for re-seeding needs, and where needed, seeding will take place concurrent with the treatment and rested from grazing for at least two years to allow the seeding to establish.

In 2000, all of the Maple Hollow Unit, and parts of the Nixon and Pioneer Units were burned in the Swains fire. Aerial seeding was done to rehabilitate the area. Portions of the Youngsfield unit were burned in the Lower Ebbs fire and were seeded and chained to rehabilitate the area.

The units that are not being treated will be monitored yearly for habitat quality. In the event that quality is unsatisfactory, the needed treatment will be carried out.

Prescribed fire may be used to treat the oak in the upper elevations of some of the units for decadency, and to promote new growth. This will be done in conjunction with the Division of Forestry, Fire, and State Lands, U.S. Forest Service, and the BLM.

Access Management Plan (may need to be included as an Appendix)

The Fillmore WMA is crucial winter range for big game in the Fillmore herd (unit 21). Due to the sensitive nature of wintering big game and the potential for human use to further stress animals an Access Management Plan has been developed for the Fillmore WMA (see Appendix E).

Fire Management Plan

Due to the difficulty associated with restoring browse species to burned landscapes and the importance of these browse species to wintering wildlife, a general practice of fire suppression will be used on all units within the Fillmore WMA. Some limited prescribed fire may be utilized in the future in conjunction with the US Forest Service and the Utah Division of Forestry, Fire, and State Lands in the oak communities as mentioned elsewhere in this plan.

In order to balance fire suppression practices on the WMA, an aggressive and proactive habitat restoration program has been and will continue to be implemented on the WMA. These restoration projects serve to reduce fire receptivity and behavior. Future projects will also focus on our uphill borders and creating defensible space that will allow for fire to be utilized on the upslope properties for beneficial purposes without creating a risk to the loss of winter range.

Wood Products

Cedar posts and firewood are the most likely available wood products available on the Fillmore WMA, with a little potential for Christmas trees. None of these are available in large enough quantities for commercial harvest, but individual use permits may be obtained through the Southern Region office.

Livestock Grazing Plan

Grazing of cattle is proposed to be used on the Fillmore WMA to reduce grasses and promote the growth of browse. Grazing will be done in a high intensity, short-term period from May 15 to June 15 annually as needed. Regional UDWR personnel will evaluate each unit for habitat quality on a yearly basis. At that time it will be decided what units will be grazed for the following year. If it is decided that it would not be beneficial to wildlife habitat to graze a unit, then it will be rested and reevaluated the following year. In

addition, the large units Youngsfield, Nixon, Pioneer, Black Cedar Hill, and Halfway Hill, will be grazed in a multiple pasture deferred rotation plan. Maintaining existing internal fences and constructing new ones when needed will accomplish this (see Appendix D).

VII. Summary Statement of Proposed Uses

The purpose of the Fillmore WMA is to provide winter range for big game species. In addition, there is vital, high-quality turkey habitat on some of the units. Therefore, the Fillmore WMA will be used to provide big game winter range for deer and elk, and to provide habitat for wild turkeys. Human uses that will be allowed include hunting, grazing, wildlife viewing, hiking, and horseback riding. Dispersed camping will also be allowed but not promoted. OHV use will be allowed on the Fillmore WMA only on designated right of ways and marked open roads. Destruction and/or degradation of wildlife habitat from any of these uses may result in further restrictions to protect the resource.

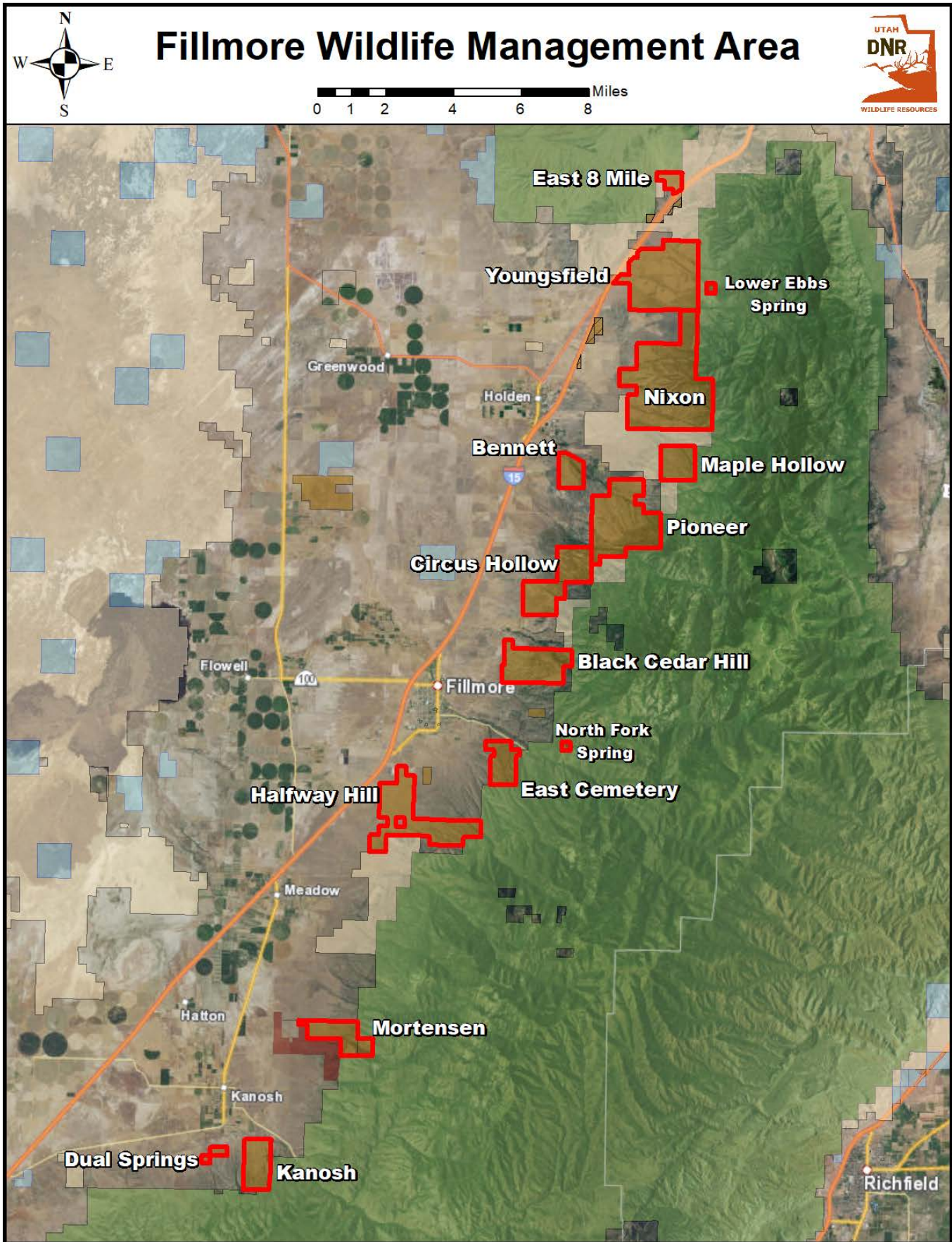
VIII. Monitoring and Evaluation

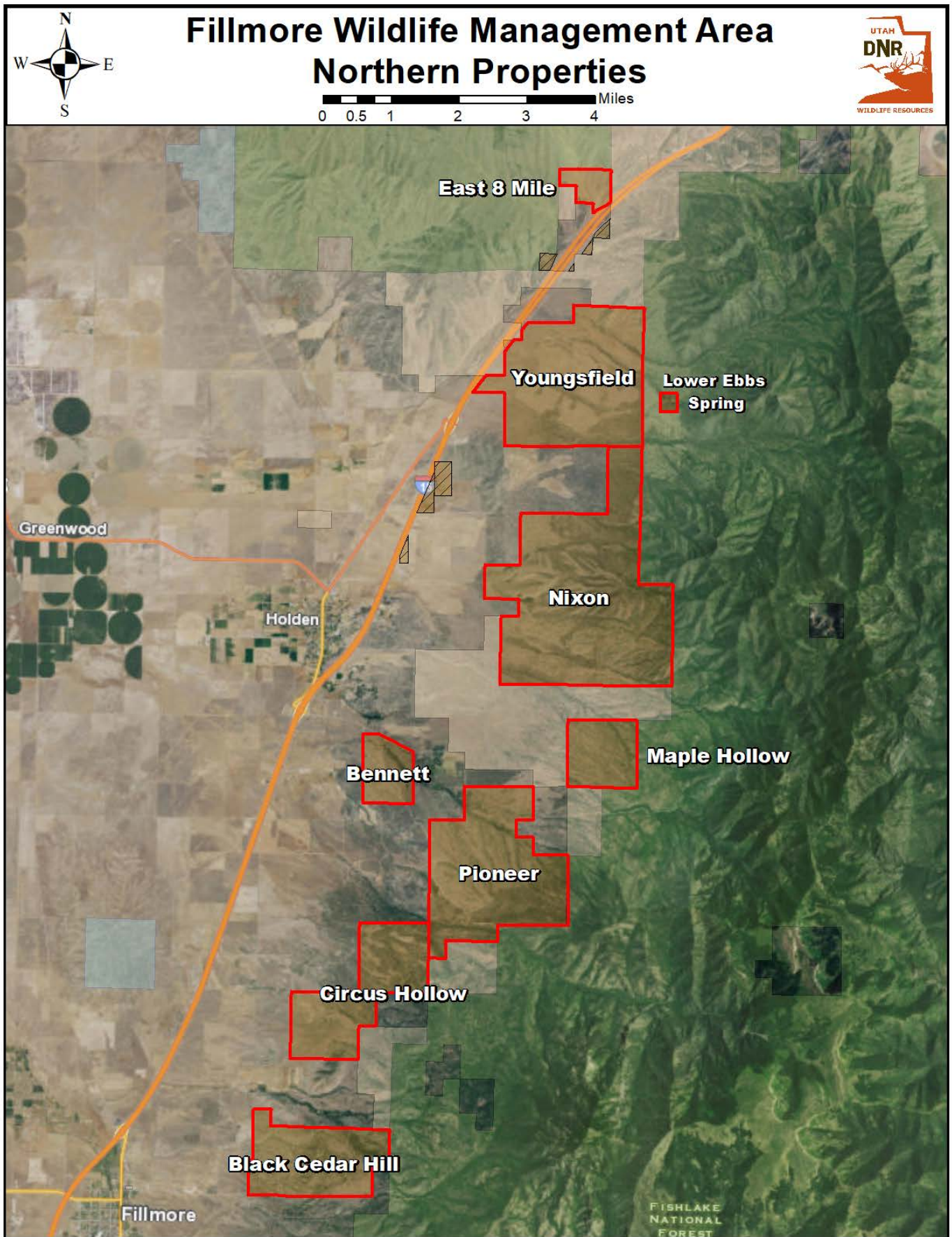
The district wildlife biologist in conjunction with the area habitat restoration biologist and other habitat staff will do evaluations of the habitat and prepare habitat improvement proposals. The district conservation officer will monitor human use of the Fillmore WMA and propose management modifications where problems are occurring with input from habitat and wildlife staff. The Habitat Section of the Southern Region of the Division of Wildlife Resources will present improvement projects to the Watershed Restoration Initiative, Habitat Council, and other sources for approval and funding.

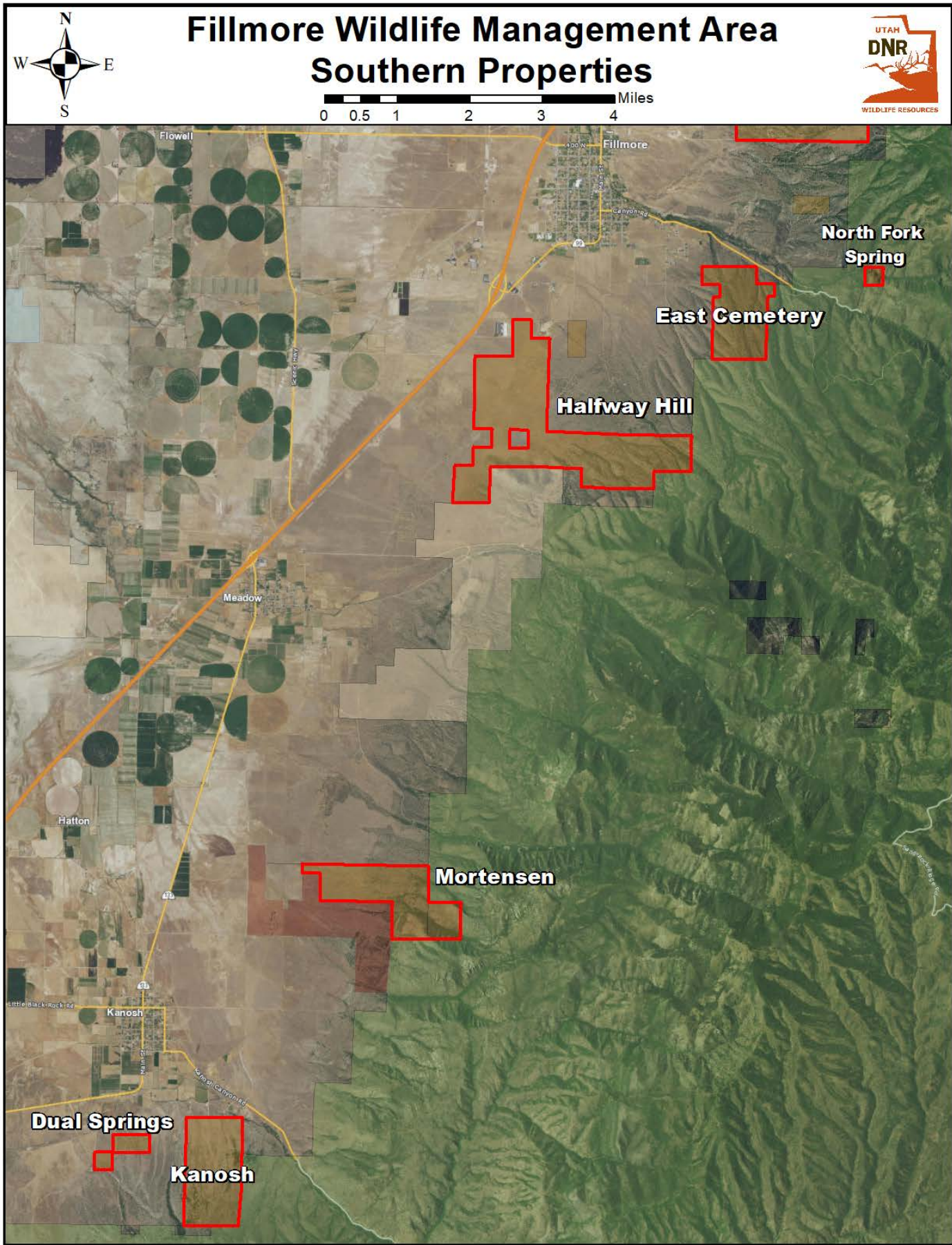
IX. Appendices

Appendix A

Maps







Appendix B

Deeds

**Copies of deeds related to the Fillmore WMA can be found at the
Southern Regional Office of the Utah Division of Wildlife Resources,
1470 N. Airport Rd. Ste. 1, Cedar City, UT 84720**

Appendix C

Encumbrances, Rights of Way, Easements, and Water Rights

Copies of encumbrances, rights of way, easements and water rights related to the Fillmore WMA can be found at the Southern Regional Office of the Utah Division of Wildlife Resources, 1470 N. Airport Rd. Ste. 1, Cedar City, UT 84720

Appendix D

Grazing Plan

USE OF LIVESTOCK GRAZING TO IMPROVE BIG GAME HABITAT ON THE FILLMORE WILDLIFE MANAGEMENT UNIT

Introduction

Spring livestock grazing is potentially an inexpensive and effective tool for enhancing deer winter range. When properly used, livestock grazing can increase the production and establishment of browse species by reducing the ability of grasses to compete with shrubs for light, water and nutrients. Timing and flexibility are crucial in using this tool successfully because livestock will consume large amounts of browse when herbaceous forage declines in quantity or quality. Grazing can also be ineffective or detrimental in dense stands of pinyon and juniper with little or no herbaceous understory. Grazing has also been associated with eliminating tall forbs important to many wildlife species.

Objectives of treatment

The objectives of livestock grazing on DWR lands purchased for big game winter range are to:

1. Favor establishment and growth of key browse species by reducing competition from grass.
2. Minimize the risk of summer wildfire by reducing fuel (grass) around shrubs.
3. Improve quality of grass forage on elk range by delaying phenology or speeding up spring green-up.
4. Control undesirable plant species.

Application

On the Fillmore WMA the timing and intensity of livestock use should be geared toward providing conditions favorable to the growth and reproduction of key shrubs. To accomplish this:

1. Grazing should not occur on units with a dense overstory of pinyon-juniper or on sensitive areas such as springs and riparian communities. Generally, grazing should not occur on key elk winter range unless special conditions warrant it. (i.e. to remove heavy thatch of standing dead grass).
2. Use on critical winter range should be limited to livestock species with strong grazing tendency such as cattle. Sheep and goats may be useful in special circumstances for weed management, as they may be effective in controlling undesirable weeds or opening up thick stands of Gambel oak.

3. Grazing should be timed to occur when grasses have sufficient palatability and nutritional content to meet animal needs and therefore minimize consumption of browse. This generally means grazing as early in May as conditions will allow and removing cattle in early June prior to senescence of grass. Removal of livestock should be based upon plant phenology, utilization of key species, and range conditions, but grazing generally should not extend past June 15.
4. Whenever feasible, a rest-rotation system should be used to facilitate plant recovery from grazing and to provide wildlife with some “ungrazed” habitat. If a rest rotation pasture system is not feasible, the entire property should be rested from livestock grazing every third or fourth year.
5. A moderately high stocking rate should be used, but the amount of time livestock are on a particular area should be short - roughly two weeks per pasture - to insure that utilization of all grass species is sufficient to meet objectives while reducing the opportunity for cattle to consume browse. Utilization can be fairly heavy - around 60-65%- so long as heavy utilization of browse does not occur.

Monitoring

The range crew maintains four range trend study transects on the Fillmore WMA (see Map 1) which are read at 5 year intervals and provide excellent baseline data for monitoring long-term changes in the vegetative community.

Regional staff may obtain a rough estimate of utilization of key forage on at least one key area for each grazed unit. Estimates of utilization of grasses will be based upon the difference in height of grazed versus ungrazed plants for one or two key species. Baskets will be placed prior to cattle introduction in May to provide sufficient ungrazed plants for comparison. Browse utilization will be estimated using marked leaders of key browse species measured at the beginning and end of each grazing season.

Specific Recommendation (2018 grazing season)

East 8-mile	This property is not fenced and has not been grazed by the DWR, although cattle ranging the surrounding federal lands utilize it. A wildfire has eliminated the shrubs from this property and the plant community is now dominated by introduced grasses. Because this property is small and not fenced no grazing is recommended at this time.
Youngsfield	This unit receives moderate deer use and fairly heavy elk use. This property has been grazed for many years. To be grazed with 160 AUMs in 2018.
Nixon	This unit receives moderate deer use and fairly heavy elk use. This property has been grazed for many years. To be grazed with 105 AUMs in 2018.
Pioneer-Bennett	No grazing.
Pioneer	This unit receives moderate deer use and fairly heavy elk use. This property has been grazed for many years. To be grazed with 80 AUMs in 2018.
Circus Hollow	This unit has been used as a grassbank for the last 2 years. Range condition is excellent. It is recommended that we reserve this area for winter elk use and not continue to graze it.
Black Cedar Hill	Grazing is not recommend in this unit as it receives moderate to significant deer and elk use.
East Cemetery	Range condition is good and deer heavily utilize this unit. No grazing is recommended for this unit.
Halfway Hill	This unit receives moderate deer and elk use. To be grazed with 50 AUMs in 2018.
Mortenson	No grazing in 2018. Fence is in very poor condition and repair and maintenance should be a high priority. There is no fence on the east side of this unit and one should be constructed. The DWR has water rights to Mortenson Spring, but the Kanosh Band has improved the spring and pipes all water off the property.
Kanosh/Dual Springs	No grazing is recommended in 2018.

Table 1. Summary of Grazing Recommendation - 2018			
Unit	Season of Use	AUMs 2017	Recommended AUMs - 2003
Youngsfield	May 15 - June 15	160	160
Nixon	“	105	105
Maple Hollow	“	0	0
Pioneer	“	80	80
Circus Hollow	“	45	0
Black Cedar Hill	“	0	0
East Cemetery	“	0	0
Halfway Hill	“	50	50
Mortenson	“	0	0
Kanosh/Dual Springs	“	0	0

Appendix E

Access Management Plan

Fillmore WMA

Access Management Plan

The Fillmore WMA is crucial winter range for big game in the Fillmore herd (unit 21). Due to the sensitive nature of wintering big game and the potential for human use to further stress animals, an Access Management Plan has been developed for the Fillmore WMA. This plan enacts seasonal road closures on many of the roads in the Fillmore WMA. In addition, many roads and OHV trails on the WMA serve no purpose and damage wildlife habitat by leading off from established roads and reducing browse, forbs, and grass species. Those roads and trails will be closed permanently. All of the road closures will be closed under the authority of Department of Natural Resources, Division of Wildlife Resources Administrative Rule **R657-28-1 sections 2 and 3.**

Road Designation

The roads on the Fillmore WMA will be designated in one of three categories: Open roads, Seasonally Closed Roads, and Permanently Closed Roads.

Open roads:

These are roads that will be left open to the public year round, and are roads on established rights of way granted to Millard County, private landowners with land only accessible through WMA lands, and state agencies. Some additional roads that are less damaging to wintering wildlife and do not damage habitat may be left open for public access.

Seasonally Closed Roads

All roads will be closed seasonally from January 1st to April 30th each year that are not on established rights of way and are not identified as open but are necessary for public access to the WMA. This will be done to limit disturbance of wintering big game when they are most vulnerable. Seasonal closures will also help to remedy the winter depredation problems on surrounding private land by allowing big game to winter on the WMA undisturbed. All roads will be closed between these dates unless posted open (Utah Code section 41-22-10.1).

Permanently Closed Roads

All roads that are damaging to wildlife habitat and are unnecessary for public access or WMA management will be permanently closed (Utah Code section 41-22-13). The roads will be closed using signs, water bars, fencing and other obstructions. Some of the roads will be plowed and reseeded. Others in low traffic areas will be blocked and allowed to return to a natural state.

Carrying out Closures

Habitat section staff, the district wildlife biologist, and district conservation officer will determine the status of each road on the Fillmore WMA (see attachments 1-12). Input from the Millard County Commissioners will be taken into consideration during the process.

Road closures will be carried out by dedicated hunters, Division employees, and private contractors. Dedicated hunters and Division employees will do reseeded with a seed mix developed by Division employees from the Great Basin Research Center.

OHVs

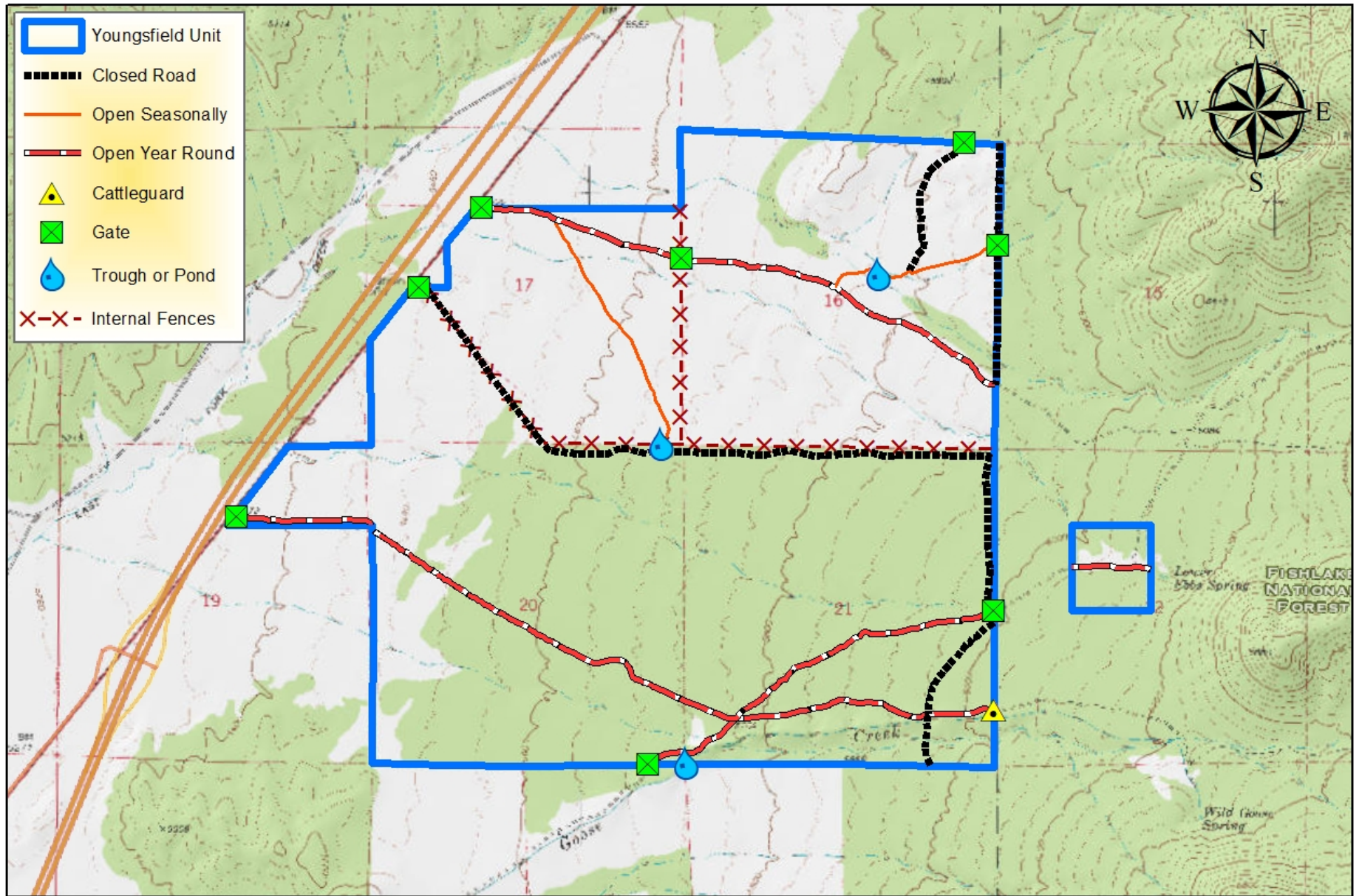
OHVs will be allowed on open roads only (Utah Code section 41-22-10.1). There are no existing legal OHV trails on the WMA (Utah Code section 41-22-13). There are roads that run through the WMA to access OHV trails on U.S. Forest Service administered lands these will remain open seasonally to allow OHV access to trailheads pursuant the agreements established with the Forest Service.

Enforcement of Closures

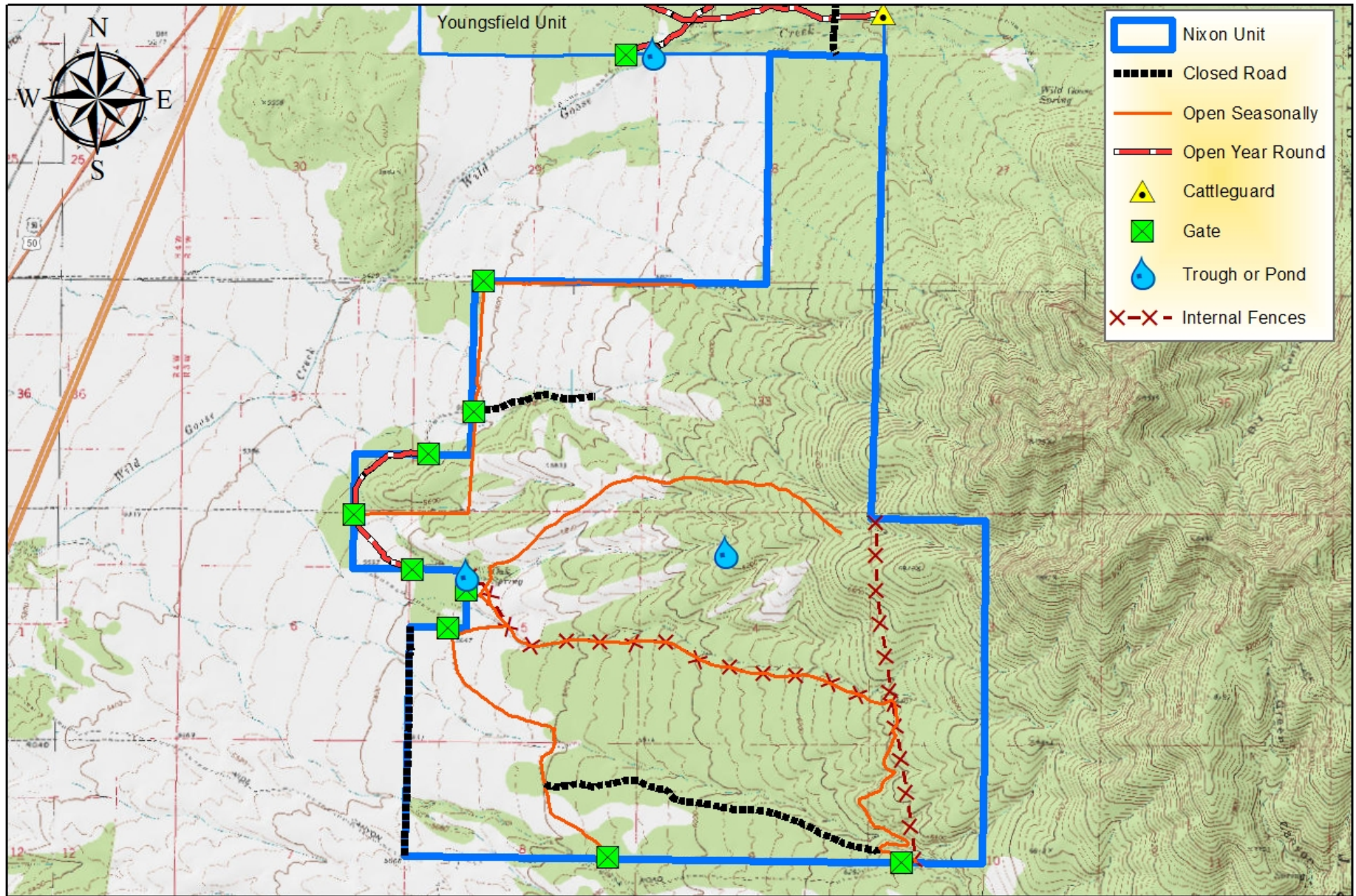
DWR Conservation Officers will carry out the enforcement of road closures. Millard County Sheriffs Department will also have jurisdiction (Utah Code Section 41-22-16). Trespass on closed roads is punishable as a class C misdemeanor and a monetary fine.

Informing the Public

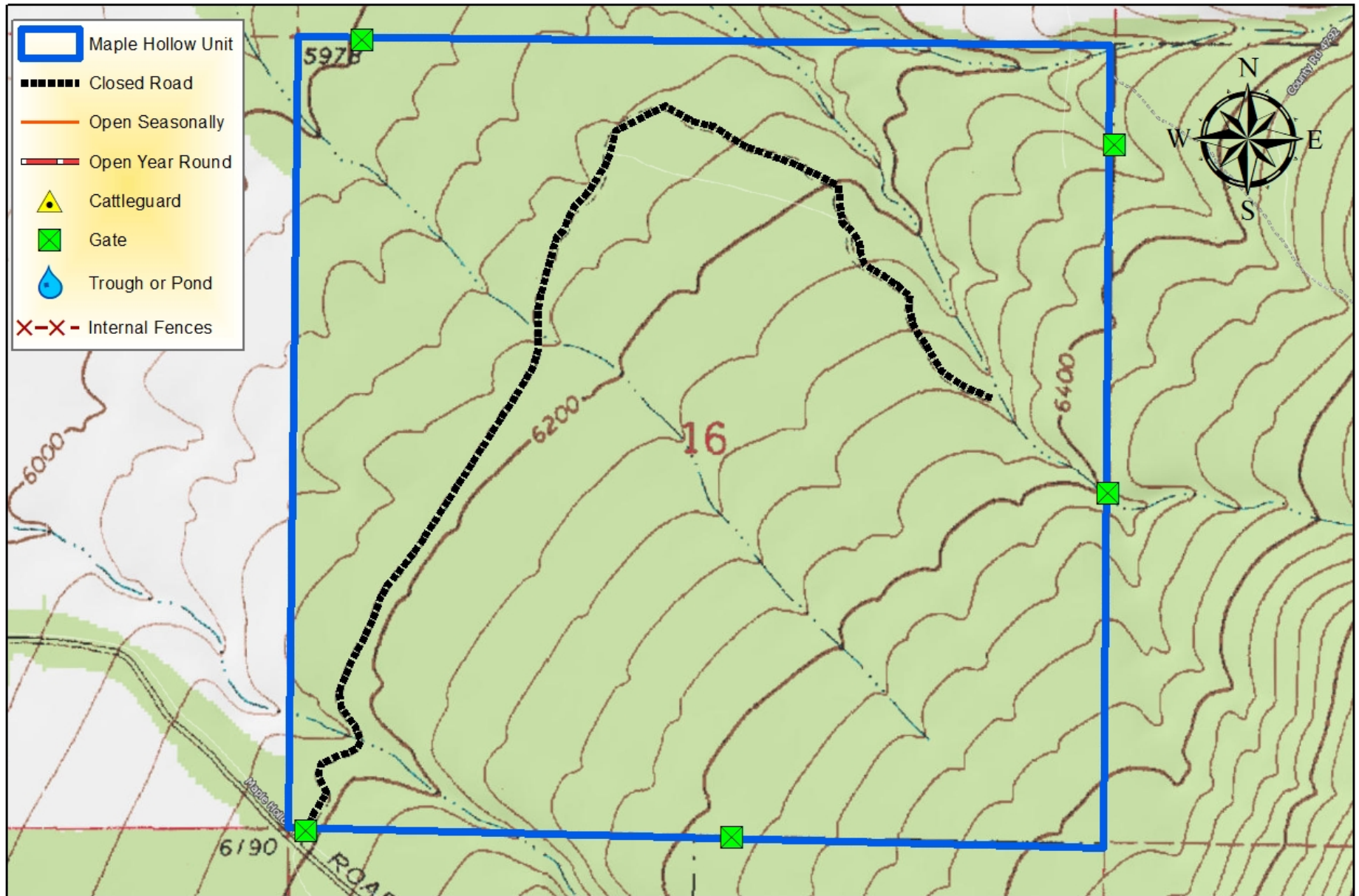
The public will be informed through signs at major access points, waterways, and on fence lines. The Millard County Commission will also be notified of the Division's intent to close roads and given a chance to provide input. It should be noted that the roads on the WMA will be considered closed unless posted open; therefore, signing will be done as a courtesy to the public rather than being necessary for enforcement (Utah Code section 41-22-10.1).



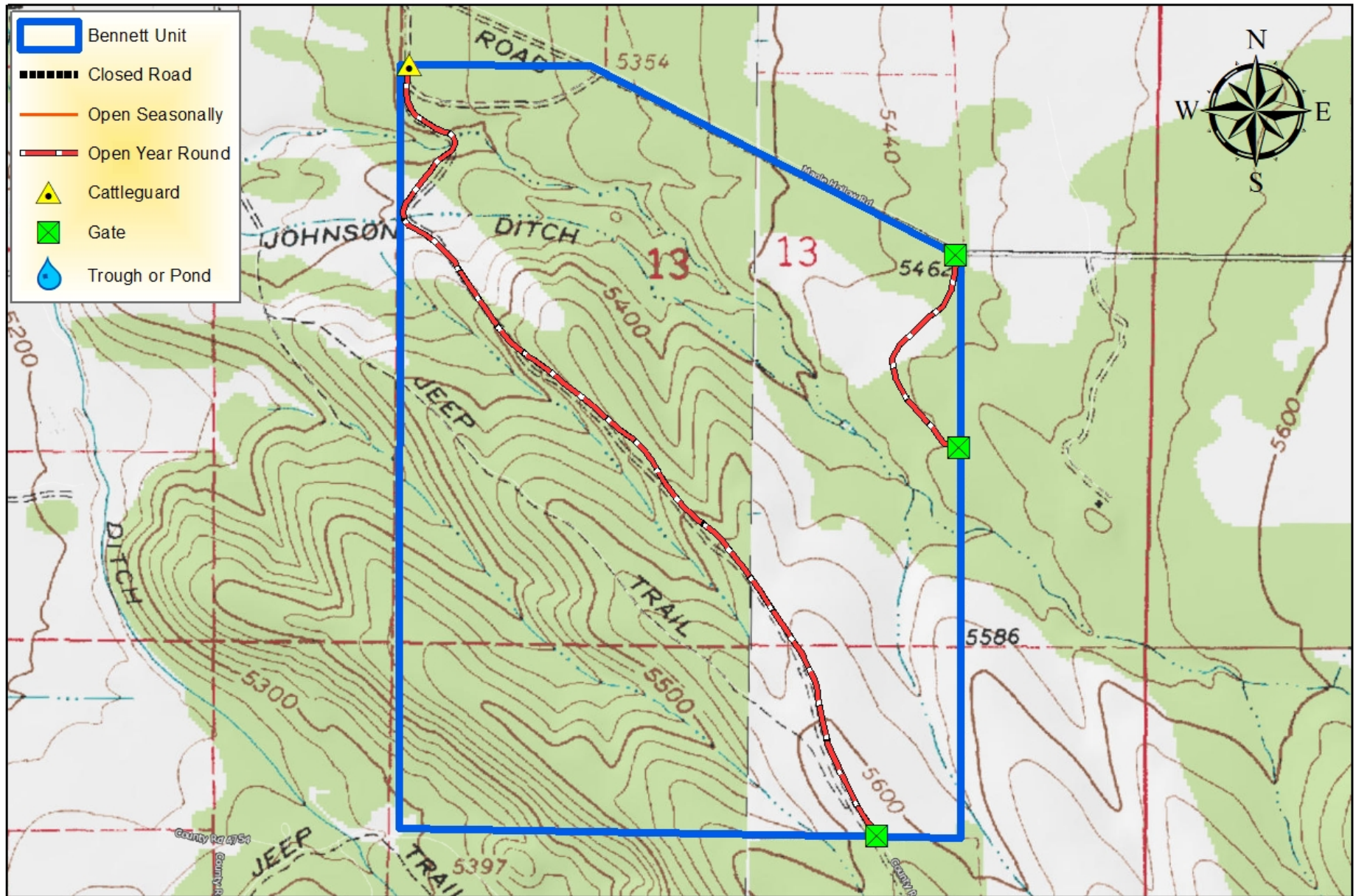
Youngsfield Unit



Nixon Unit

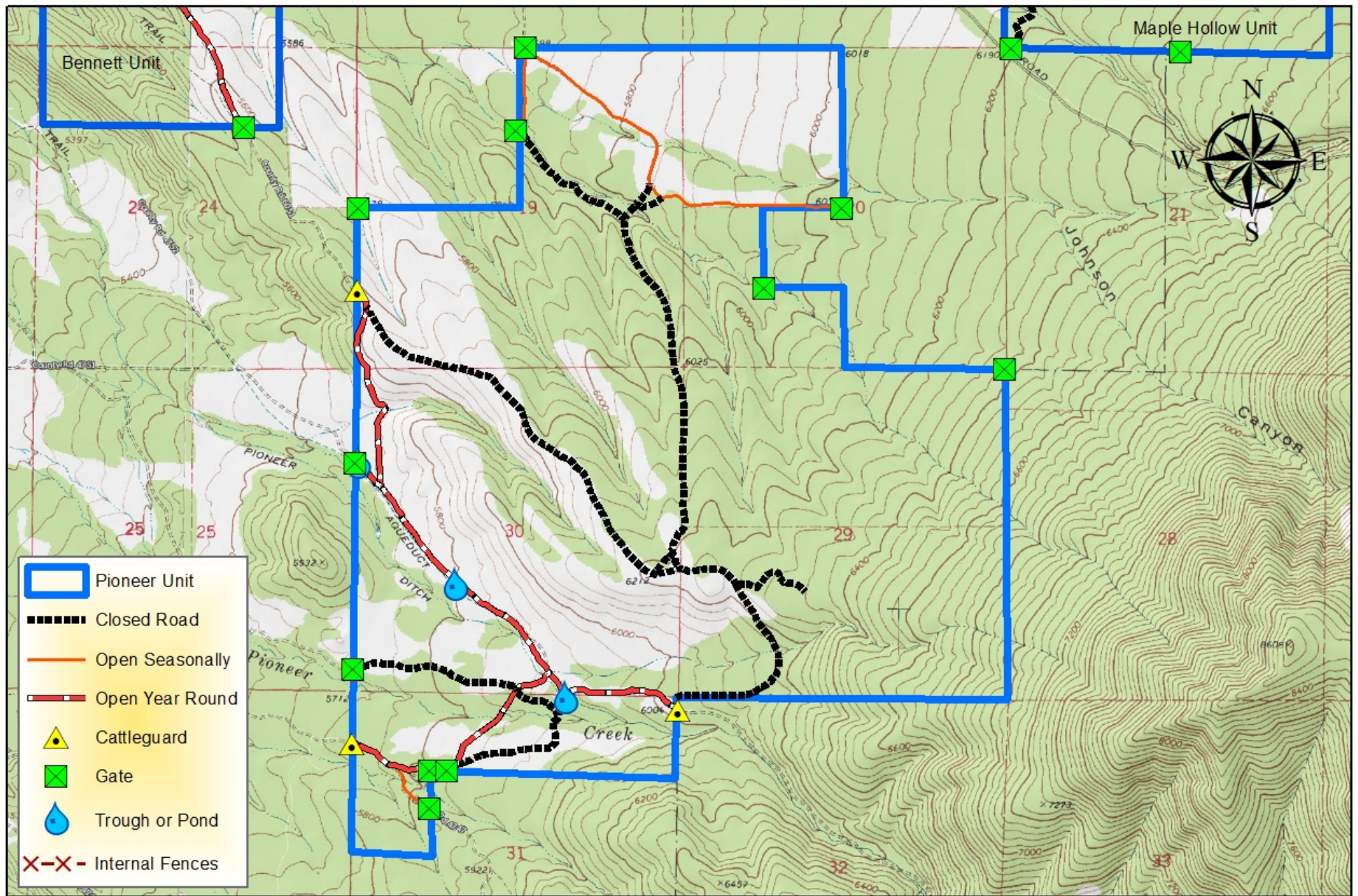


Maple Hollow Unit

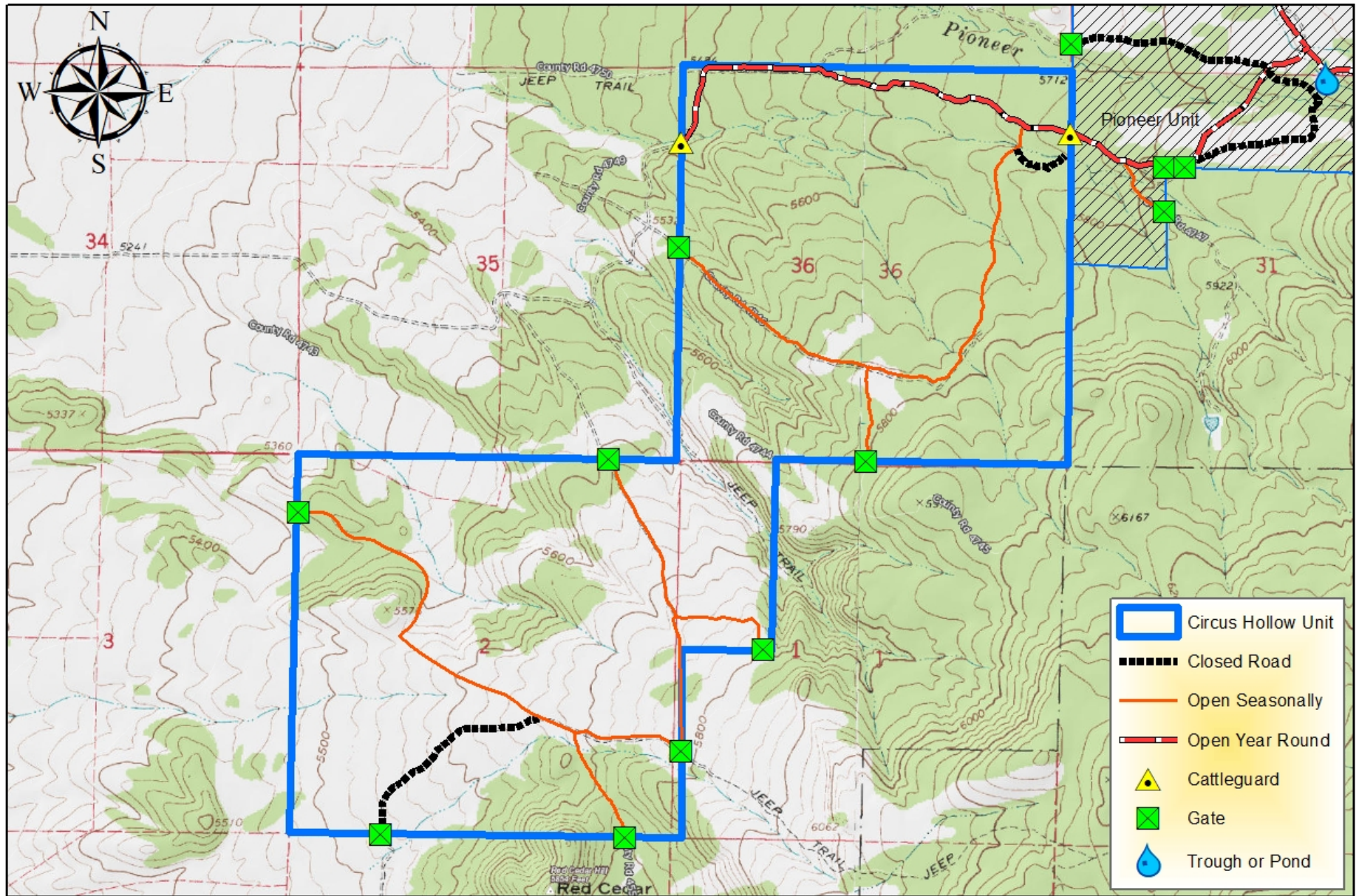


0 0.125 0.25 0.5 0.75 1 Miles

Bennett Unit

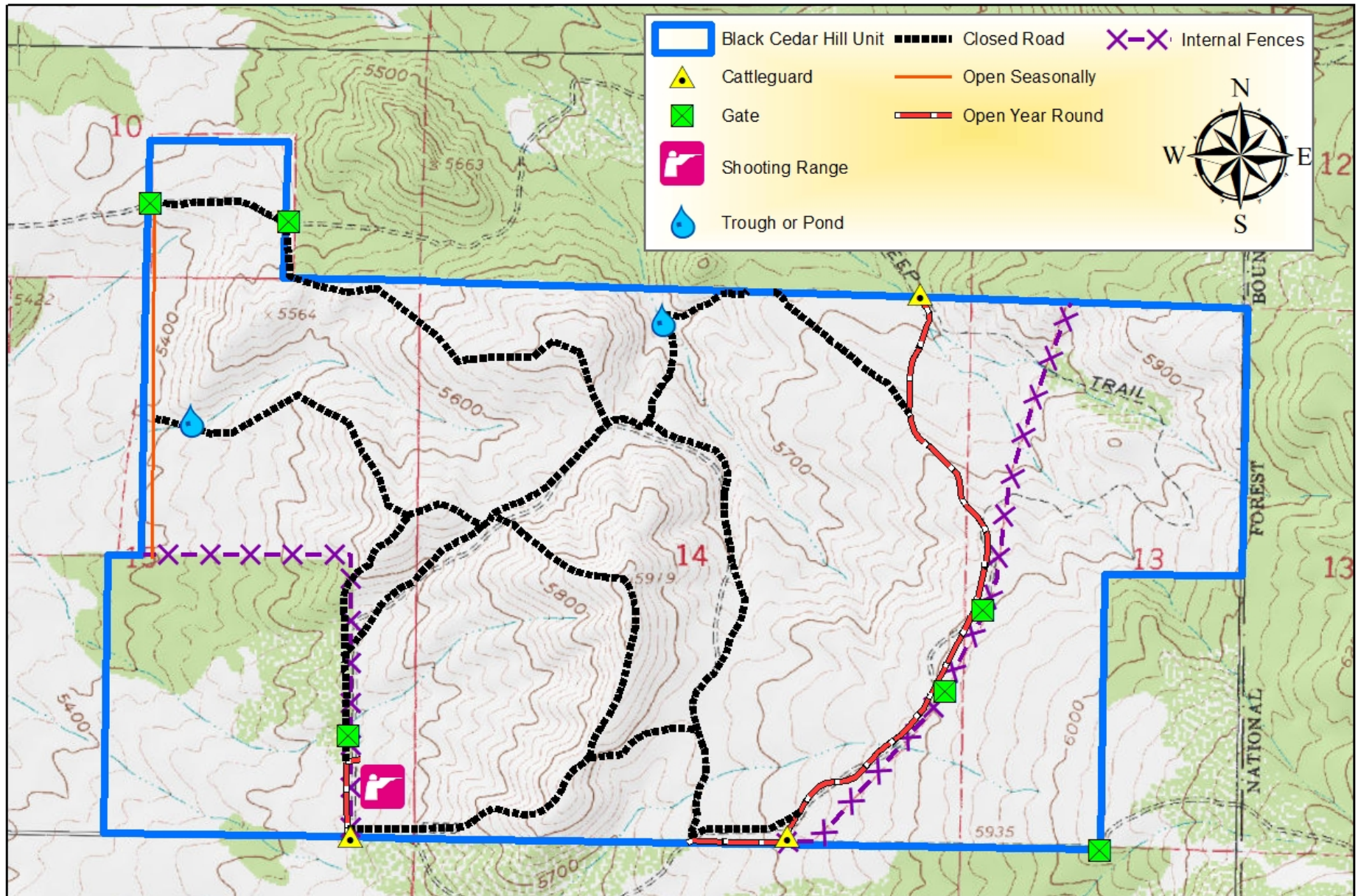


Pioneer Unit

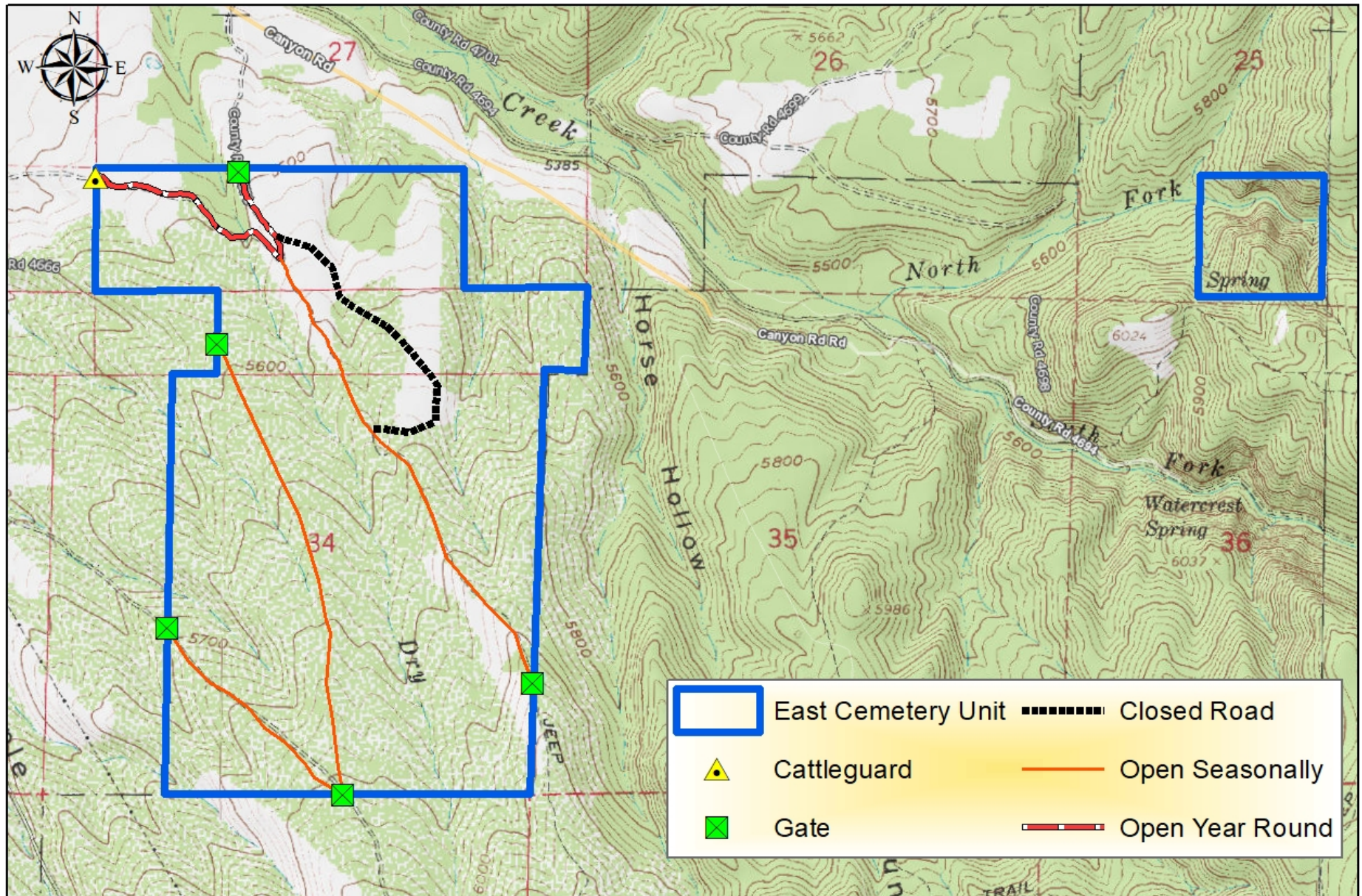


0 0.375 0.75 1.5 2.25 3 Miles

Circus Hollow Unit

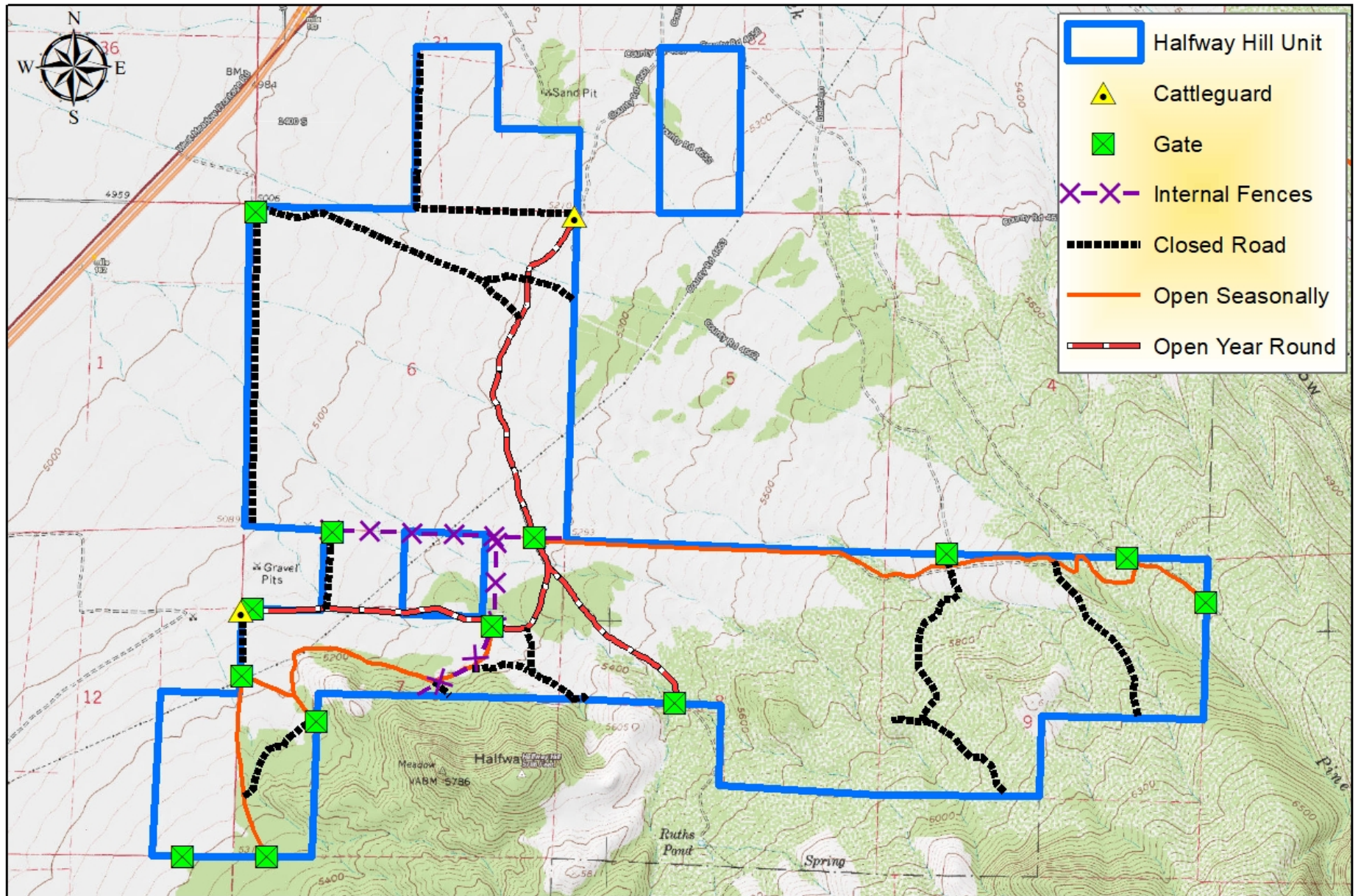


Black Cedar Hill Unit



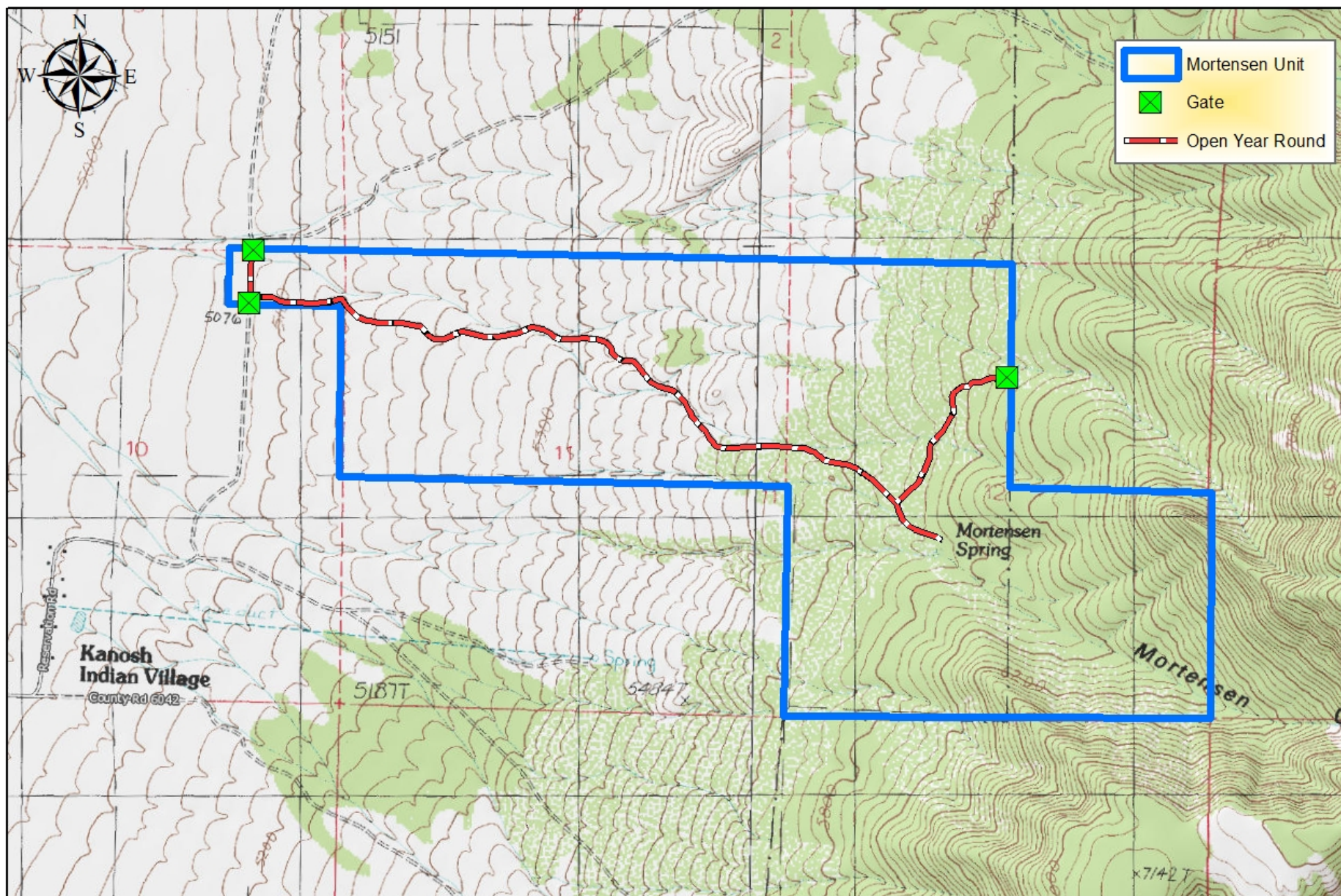
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East Cemetery Unit



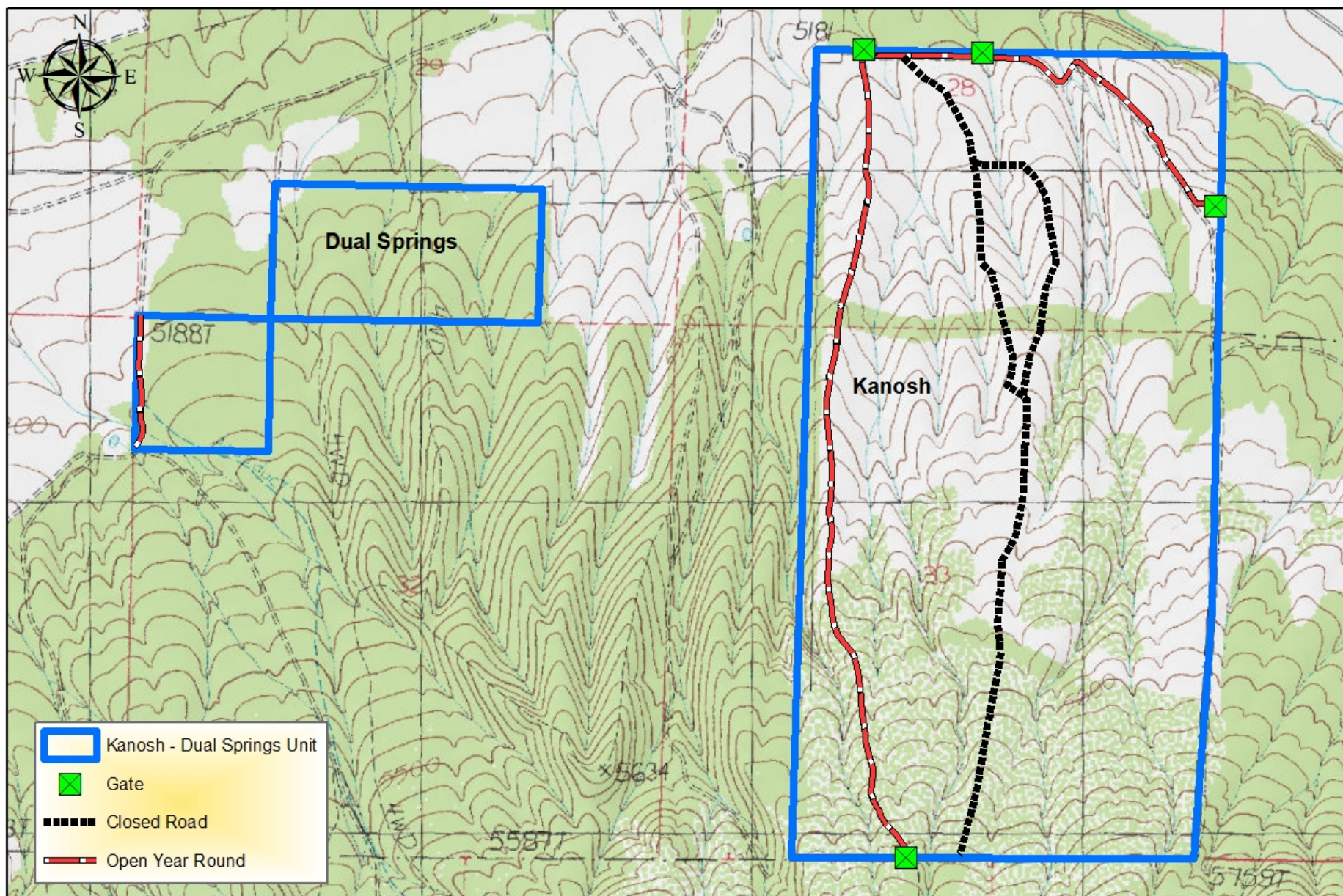
0 0.5 1 2 3 4 Miles

Halfway Hill Unit

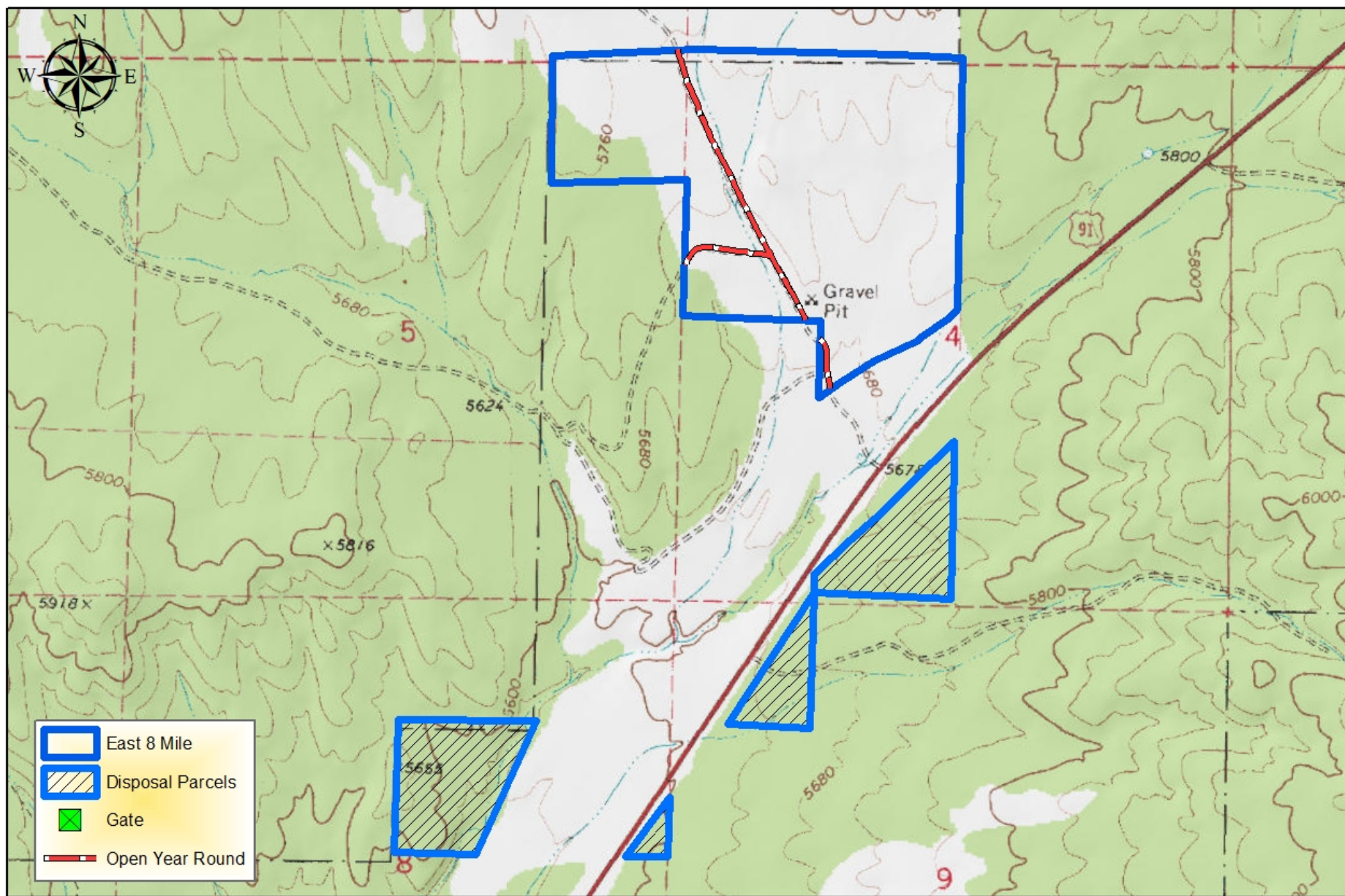


0 0.325 0.65 1.3 1.95 2.6 Miles

Mortensen Unit



Kanosh - Dual Springs Unit



0 0.25 0.5 1 1.5 2 Miles

East 8 Mile Unit

