

ELK HERD UNIT MANAGEMENT PLAN
Elk Herd Unit # 10
BOOK CLIFFS
December 2023

BOUNDARY DESCRIPTION

Grand and Uintah counties—Boundary begins at Exit 164 on I-70 near the town of Green River; east on I-70 to the Utah-Colorado state line; north on this state line to the White River; west along this river to the Green River; south along this river to Swasey's Boat Ramp and the Hastings Road; south on this road to SR-19; south and east on SR-19 to Exit 164 on I-70 near the town of Green River.

This unit is managed with four subunits. See **Appendix A** for subunit boundary descriptions.

LAND OWNERSHIP

Ownership	Yearlong range		Summer Range		Winter Range	
	Area (acres)	%	Area (acres)	%	Area (acres)	%
Forest Service	0	0	0	0	0	0
Bureau of Land Management	266,492	86.6	112,927	33.7	543,873	49.9
Utah State Institutional Trust Lands	35,353	11.5	114,778	34.2	85,524	7.9
Native American Trust Lands	1,525	0.5	96,678	28.8	386,145	35.4
Private	4,126	1.3	3,912	1.2	58,783	5.4
Department of Defense	0	0	0	0	0	0
USFWS Refuge	0	0	0	0	0	0
National Parks	0	0	0	0	0	0
Utah State Parks	0	0	0	0	0	0
Utah Division of Wildlife Resources	86	0.1	7,157	2.1	15,286	1.4
TOTAL	307,582	100	335,452	100	1,089,611	100

UNIT MANAGEMENT GOALS

- Manage for a population of healthy animals capable of providing a broad range of recreational opportunities including hunting and viewing.
- Balance elk herd impacts on human needs, such as private property rights, agricultural crops and local economies.

- Maintain the population at a level that is within the long-term carrying capability of the available habitat.

UNIT MANAGEMENT OBJECTIVES

Population

Target Winter Herd Size: Manage toward a wintering elk population of **7,500**

Harvested Bull Age Objectives: As directed in the Utah Statewide Elk Management Plan, manage for a harvested bull elk 3-year average age of 6.0 – 6.5 years for the Book Cliffs, Bitter Creek/East hunt unit and 6.5 – 7.0 years on the Little Creek subunit. The Floy Canyon subunit will be managed as a General Season Any Bull elk unit.

Antlerless Harvest: Despite being below population objective, some antlerless elk harvest is desirable to address specific range and depredation issues. The Division may continue to issue limited cow elk permits to address drought-related range issues, to reduce competition with mule deer for crucial ranges, to minimize damage to agricultural crops and to address issues caused by low elevation resident elk. Other antlerless elk permits may be recommended if justified based on range conditions, competition with mule deer, and/or conflicts with agriculture.

Habitat

- Promote sustainable livestock grazing practices that minimize negative impacts to plant health and diversity, especially on summer ranges and on SITLA and DWR lands where DWR holds the grazing permit or controls livestock grazing
- Develop new and protect/improve existing water sources for wildlife and livestock to improve distribution, and minimize overutilization in proximity to water sources
- Remove conifer encroachment into winter range, sagebrush parks, and summer range aspen forest and mountain browse communities
- Open the closed canopy pinion–juniper forest lands at mid elevation zones throughout the Book Cliffs to enhance perennial understory vegetative maintenance
- Enhance riparian system and canyon bottom vegetative communities through continued agricultural practices, prescriptive grazing and mechanical or chemical treatments
- Continue emphasis on reducing greasewood and improving canyon bottoms and riparian communities
- Manage to minimize stray horse herds and their impacts

CURRENT STATUS OF ELK MANAGEMENT

Habitat

Habitat Conditions: Summer range is limited. Drought impacts have reduced forage production throughout lower elevation ranges. Perennial grasses persist, but annual grass and weed growth have responded to moisture timing and availability. There are 33 permanent range trend study sites on the Book Cliffs (9 sites on the South Book Cliffs subunit and 24 on the Bitter Creek and Little Creek subunits). While these study sites monitor mule deer range conditions and principally target wintering areas, they reflect the impact of drought conditions on the vegetative communities.

Few elk winter in areas sampled by the South Book Cliffs range trend studies. In 2020, study sites indicated that soil and browse trends appeared stable. However, species composition of the

herbaceous understory is declining in quality, as composition is primarily annual grasses. Species such as cheatgrass (*Bromus tectorum*) are increasing in frequency and cover.

The North Book Cliffs subunit study sites showed stable and improving soils. Herbaceous plant understories are generally in poor to very poor condition with unsatisfactory species composition. This is due primarily to cheatgrass and annual forb dominance. Browse plant condition and frequency trends are generally improving with problems of declining 4-wing saltbush evident.

Distribution of all ungulate herbivory (including elk) on the limited summer range is becoming a more pressing issue. Competition for forage and especially water between elk, cattle, deer, bison, and estray horses is increasing and cause for concern among the DWR, BLM, SITLA, and livestock permittees.

When looking at elk population objectives, the Division has taken into account barriers which include: 1) depredation issues, 2) winter range that is beyond division control, 3) social and political factors, 4) current range improvements, 5) future range improvements, 6) overall range health, 7) increasing estray horse and feral cattle populations and 8) limited summer range. As these factors change, the Division will adjust the population objective as needed.

Several factors impact the ability of this unit to support larger elk populations. Drought related vegetative impacts of the past decade have interfered with elk numbers. Antlerless elk harvest was initiated to stop, and then slow, elk herd growth and provide relief to vegetative communities. Mineral extraction and associated activities fragment elk habitat and elk security. Pinion and juniper invasion is reducing more beneficial forage production and threatening open and mosaic habitat values. Canopy cover is closing in mid elevation mature pinion and juniper communities. This limits and slowly removes valuable perennial understory species. Agricultural depredations are generally minimal but do occur.

Habitat improvement projects: Numerous habitat improvement projects have been completed in the Book Cliffs. The Division of Wildlife and partners have made aggressive efforts to preserve, improve and develop wildlife habitat. The Book Cliffs Working Group has been facilitating cooperation on habitat projects and concerns. These efforts include taking advantage of naturally caused wild fires through reseeding and other more labor-intensive accomplishments

Population

The following table provides a summary of Book Cliffs elk population information. Sightability varies due to snow conditions on trend count flights resulting in divergence in the model and trend counts.

Winter Trend Counts and Modeled Population Estimates		
Year	Trend Count	Population Model
2015-2016	3,224	5,600
2016-2017	-	5,700
2017-2018	-	5,700
2018-2019	2,957	5,900
2019-2020	-	6,000
2020-2021	-	5,500
2021-2022	-	5,000
2022-2023	1,664*	4,300

*very poor sightability, low confidence in trend count

BARRIERS TO ACHIEVING UNIT MANAGEMENT OBJECTIVES

Habitat

- Drought impacts to rangeland forage condition and abundance
- Limited summer range on the unit
- Habitat fragmentation, loss and disturbance from mineral developments, road extensions and human impacts
- Pinion and juniper invasion into sagebrush, mountain browse and aspen communities
- The maturation of conifer forests resulting in closed canopies, which reduces perennial understory vegetation, and limits forage availability and diversity
- Canyon bottom vegetation communities dominated by greasewood and tamarisk with the associated loss of water table and native cottonwood, willow and related riparian species
- Estray/feral horse and cattle impacts on forage potential

Population

- Calf-to-cow ratios have been lower than normal in recent years. With calving grounds concentrated in such a narrow band of summer habitat, it is possible that predators such as cougar and especially black bears have become more effective at killing elk calves and could be impacting recruitment.
- The research done in 2020-2022, shows low pregnancy rates in adult cows. The average age of the harvested cows is 10 years old. High age and low pregnancy rates may be contributed the population decrease.
- Elk calf survival appears limited by predation from black bears and mountain lions.

Other barriers

- Crop depredations on privately owned agricultural lands is limited but can be significant depending upon crops, timing and elk distribution.

STRATEGIES FOR REMOVING BARRIERS AND REACHING UNIT MANAGEMENT OBJECTIVES

Habitat

Monitoring

- Continue to monitor long-term rangeland conditions and health through the permanent range trend sites
- Annually inspect rangeland vegetative community impacts and health through habitat assessment surveys that may include field assessments and range rides

Actions to Remove Habitat Barriers

- Cooperate with land management agencies to establish natural fire intervals
- Cooperate with land management agencies to effectively reseed and/or rehabilitate wildfires to benefit elk and other wildlife.
- Continue with the aggressive juniper, pinion and other conifer treatment projects that target areas of invasion into sagebrush, mountain browse and aspen communities
- Develop projects to improve vegetative diversity and perennial understory health in closed canopy pinion and juniper forests
- Continue to treat greasewood and tamarisk communities and reestablish native woody vegetative species in riparian habitat types and explore ways to bring water tables closer to the ground surface
- Work with mineral development interests to attempt to mitigate for habitat fragmentation and losses
- Seek to expand summer range values by extending and improving canyon-type habitats down drainage systems
- Work with landowners and associated agencies to limit the impacts and control populations of wild cows and stray horses within the Book Cliffs

Population

Monitoring

Population Size: Aerial helicopter surveys are normally conducted every three years. These flights are cooperatively timed with the Ute Indian Tribe and data shared to better understand elk population distribution and numbers. These flights and population models are utilized to track and evaluate the elk herd distribution and annual winter population estimates. Annual herd classification may be conducted to estimate herd productivity.

Bull Age Structure: Harvested bull ages will be monitored annually through cementum annuli lab analysis of hunter-submitted central incisor teeth

Harvest: The primary means of monitoring harvest will be through the statewide mandatory harvest survey. Population size will be achieved through utilizing a variety of harvest methods and seasons. Elk distribution across the herd unit may also be addressed through selective public antlerless harvest.

Management Actions to Remove Population Barriers

Depredation: Antlerless hunts will continue to be the principle means of limiting cropland depredation. Mitigation permits and vouchers may be used where needed.

Interagency Cooperation: The increasing demands for all natural resource use within the Book Cliffs mandate close cooperation between all resource management agencies. While good cooperation and communication is established, this effort will be a priority and will include Private Landowners, BLM, SITLA, Ute Indian Tribe, the public and developers.

Predation: The DWR has increased harvest permits for black bears and made mountain lion hunting over the counter.

DURATION OF THIS MANAGEMENT PLAN

This Unit Management Plan was revised in 2023 following the revision of the Statewide Elk Management Plan. This Unit Management Plan will be revised after the next Statewide Elk Management Plan revision to ensure all current management tools are being used. Revision of this plan may also take place as needed to address future issues or incorporate new management strategies. Unit elk plan goals, objectives, recommendations and strategies are constrained within the sideboards set in the Statewide Elk Plan, which supersedes unit plans. It is possible that changes to the Statewide Elk Plan may affect unit plans. Additionally, changes to Utah State Code and/or Administrative Rule may also affect elk plans.

APPENDIX A SUBUNIT BOUNDARY DESCRIPTIONS

Unit 10a Book Cliffs, Bitter Creek Subunit

Grand and Uintah counties—Boundary begins at the Utah-Colorado state line and the White River; south along this state line to the Book Cliffs summit (north-south drainage divide); west along this summit and drainage divide to Ten Mile Knoll and the Steer Ridge road; north and west along the Steer Ridge road (atop the drainage divide) to the Uintah and Ouray Indian Reservation Boundary (NW 1/4 Sec 7, T17 S R 21 E); north along this boundary to the Uintah-Grand county line; west along this county line to the Green River; north along this river to the White River; east along this river to the Utah-Colorado state line.

Unit 10b Book Cliffs, South Subunit

Grand County—Boundary begins at the Utah-Colorado state line and the summit and drainage divide of the Book Cliffs; west along this summit and drainage divide to Diamond Ridge; southwest along Diamond Ridge and the Book Cliffs summit (north-south drainage divide) to the Uintah and Ouray Indian Reservation boundary (Hells Hole/head of Segó Canyon); west along this boundary to the Segó Canyon Road; south on this road to the Thompson Canyon Road; south along this road to Interstate 70 near the town of Thompson; east along I-70 to the Utah-Colorado state line; north along this state line to the summit and drainage divide of the Book Cliffs.

Unit 10c Book Cliffs, Little Creek (Roadless) Subunit

Grand County--Boundary begins at the Steer Ridge road at Ten Mile Knoll and the Book Cliffs summit (north-south drainage divide); southwest along the Book Cliffs summit on Diamond Ridge to the Uintah and Ouray Indian Reservation boundary (Hells Hole/head of Segó Canyon); north on this boundary (west side of West Willow Creek) to the DWR Wildlife Management Area/Ute Tribe Fence at the confluence of East and West Willow Creek; northeast from this confluence cross-country to the Steer Ridge road (NW 1/4 Sec 7, T17 S R 21 E); south and east on the Steer Ridge road (atop the drainage divide) to Ten Mile Knoll and the Book Cliffs summit.

Book Cliffs Floy Canyon Subunit

Grand County - Boundary begins at Exit 164 on I-70 near the town of Green River; east on I-70 to the Thompson Canyon road at Thompson; north on this road to the Segó Canyon road; north on this road to the Ute Indian Reservation boundary; west along this boundary to the Green River; south along this river to Swasey's Boat Ramp and the Hastings Road; south on this road to SR-19; south and east on SR-19 to Exit 164 on I-70 near the town of Green River. EXCLUDES ALL NATIVE AMERICAN TRUST LAND WITHIN THE BOUNDARY. USGS 1:100,000 Maps: Huntington, Westwater. Boundary questions? Call the Price office, 435-613-3700