2023 Utah Wild Turkey Management Plan

Utah Division of Wildlife Resources

Utah Department of Natural Resources

Requesting Approval by the Utah Wildlife Board
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Contents

UTAH TURKEY PLAN COMMITTEE

Chuck Carpenter.....Utah National Wild Turkey Federation Biologist
Scott Dalebout ..... Southern Region Sportsman
Al Eiden ..... Pheasants Forever West Region Director
Merlin Esplin .....Southern Region Landowner
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Wade Garrett .....Utah Farm Bureau
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Waylon Pritchett.....Sportsmen for Fish and Wildlife
Clint Wirick..... United States Fish and Wildlife Services Partners Program
Angie Wonnacott.....Northern Region Sportsman
Lynn Worwood .....Utah National Wild Turkey Federation President

Division of Wildlife Resources Committee Members:

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Nicole Nielson ..... Facilitator
Jason Robinson ..... Content Expert; Voting Member
Danny Summers .....Content Expert; Habitat
Heather Talley.....Upland Game Coordinator; Chair
Lindy Varney ..... Content Expert; Licensing

EXECUTIVE SUMMARY

The purpose of this Utah Wild Turkey Management Plan (hereinafter; the Plan) is to maintain relevant and achievable goals, objectives, and strategies to direct the implementation of management practices to create, maintain, or improve wild turkey habitat and populations. Furthermore, the Plan provides transparency regarding wild turkey management, and explicates the efforts made to offer recreational hunting opportunities to coincide with Utah hunters' preferences as much as possible, while maintaining biological integrity, mitigating depredation and nuisance issues, and adapting to new circumstances.

Utah Code §23-14-1 grants the Utah Division of Wildlife Resources (DWR) management authority for wildlife within the state under the authority of the Wildlife Board to serve as the trustee and custodian of protected wildlife to protect, propagate, manage, conserve and distribute protected wildlife throughout the state. The implementation of the Plan will direct the management actions that the DWR will execute to enhance, maintain or establish wild turkey populations and habitat, as well as maintain recreational hunting opportunities.

This Plan will serve as the action plan for wild turkey management in Utah. Key issues that impact wild turkeys in Utah are identified, and will comprehensively guide the direction for upland game management during the next six years (2023-2029). If no major revisions are necessary at the end of the Plan's duration, the Plan may be extended in three-year increments, as approved by the Wildlife Board. This Plan incorporates management direction to the DWR via goals, objectives, strategies and tactics. The Plan will direct DWR's program prioritization and annual work plan development, and provide guidance in the creation of regulatory recommendations and allocation of resources. The Plan indicates five goals for the Plan to address:

- Maintain and Improve Wild Turkey Populations to Habitat or Social Carrying Capacity
- Minimize Human-Wild Turkey Conflicts
- Improve Wild Turkey Hunting Opportunities
- Enhance the Appreciation of Wild Turkeys in Utah
- Enhance Interagency Cooperation

INTRODUCTION

The wild turkey (*Meleagris gallopavo)* is the largest of Utah's game birds and is considered by many as a pinnacle species of upland game. Its appearance is very similar to the domestic dark or bronze turkey, but it has longer legs and a more slender, streamlined body. Tips of the tail feathers are white to light tan. Upper tail coverts may be tipped in white or tan. Breast feathers of the male are tipped with black while those of the female are tipped with white or buff (Dickson 1992).

Adult male turkeys are called toms or gobblers and adult female turkeys are called hens. One-year-old male turkeys are called jakes and one-year-old female turkeys are called jennies. Chicks up to four weeks of age are referred as poults, turkeys between four weeks of age and one year are considered juveniles.

Courtship activities begin in early spring, usually in March. Initiation of breeding behavior is regulated primarily by day length; but year-to-year variation in spring conditions can delay or advance breeding activities. The gobbling of the tom serves as a challenge to other males and attracts females to his territory. There are typically two peaks in courtship behavior — the first peak in gobbling occurs at the start of the breeding season, and the second happens a few weeks later, after most hens have begun incubation. Turkeys are polygamous; a mature tom will mate with as many hens as he can attract. Toms do not take part in nesting or parental activities (Dickson 1992).

Turkeys are ground nesters, with the nest made up of a shallow depression formed by simple scratching and the hen's presence on the nest. Nests are typically located next to cover such as a tree, large rock or fallen log and encompassing dense lateral cover for concealment. Hens lay an average of 10 to 11 eggs over the course of two weeks. Continuous incubation begins after the last egg is laid and lasts for an average of 28 days. Chicks hatch synchronously and are ready to leave the nest within 24 hours. In many studies, greater than 90% of hens attempted to nest each year. Adults are more likely to renest than juveniles, and the length of time spent incubating a failed nest influences the likelihood of renesting. Hens that spend more time on a nest that fails are less likely to renest (Dickson 1992).

After hatching, poults quickly increase body mass and size. Their growth requires a protein-rich diet consisting primarily of insects and forbs (flowering plants). In their first week of life, a poult's diet is roughly 80 percent insects with the required proportion declining as they age. Therefore, the availability of insects is imperative for survival of poults. Poults are dependent upon the hen for protection, and roost on the ground for the first two weeks of life. After the second week of life, poults develop the ability to fly and begin roosting in trees (Dickson 1992).

Jakes seldom breed unless there is an absence of mature toms in the flock. A portion of the yearling hens will mate and nest their first year.

Mast-producing plants such as pine nuts and acorns are important food sources. A variety of grasses, weed seeds, and green, leafy vegetation are also eaten by turkeys. Sedges are important year-round food items where available. Large quantities of insects, particularly grasshoppers, are consumed during the summer.

UTAH WILD TURKEY SUBSPECIES

Merriam's Turkey (*Meleagris gallopavo merriami*)

Males reach a length of 48 inches and females 36 inches. The average weight of an adult male averages 18 pounds and females average 10.5 pounds.

The Merriam's turkey is typically a mountain bird found in mature stands of ponderosa pine mixed with aspen, grassy meadows, and Gambel's oak grading into pinyon pine and juniper. Typical summer habitat consists of large stands of ponderosa pine beginning at about 7,000 feet in elevation up to the spruce/fir zone as high as 11,000 feet. Winter habitat consisting of ponderosa pine flats and individual ponderosa trees which extend down into the pinyon/juniper forests, is usually below 7,000 feet. Merriam's turkeys can travel up to 40 miles between summer and winter ranges.

Important turkey areas such as winter roosts, breeding territories, and brooding areas are usually associated with mature ponderosa pine trees and wet meadows. Large pines are critical for roosting and as escape cover from predators such as coyotes and eagles.

Rio Grande Turkey (*Meleagris gallopavo* intermedia)

The Rio Grande turkey is similar in size and appearance to the other subspecies of wild turkey. Adult males average 17 to 21 pounds, while adult females average eight to 11 pounds. Rios can be distinguished from the other subspecies by the coloration of the tips of the tail feathers, coloration of the upper tail coverts (feathers of the lower back, covering the base of the tail feathers), and the barring in the primary wing feathers. In the Rio Grande turkey, these feather tips are buff or tan, in contrast with the white tips of the Merriam's subspecies.

The Rio Grande turkey (Rio) is found in cottonwood river bottoms often associated with Gambel's oak and green leafy plants. The Rio exhibits seasonal movements between winter roosting areas and nesting areas of up to 10 miles; Rio's seasonal movements are considerably shorter than Merriam's. The Rio Grande and the Merriam's turkey are similar in appearance; however differences in habitat requirements are important for proper management and successful translocations.

Intermediate Subspecies

Since 2008, wild turkey in Utah have been managed at the species, rather than the subspecies level. Subspecies are still recognized for habitat and transplantation purposes; however, Merriam's and Rio Grande subspecies have interbred and adapted to local conditions. These intermediate subspecies are not easily categorized as Merriam's or Rio Grande due to overlapping morphological and behavioral characteristics. They are sometimes referred to as Merrios. They are found in a range of otherwise unoccupied habitat intermediate between the higher elevation Merriam's conifer habitats and lower elevation river bottom Rio habitats.

Dr. Nicki Frey, professor at Utah State University, conducted a study on Rio Grande turkeys in the Escalante area of southeastern Utah. Upon the conclusion of the study, some of the discoveries include: Rio Grande turkeys behave differently and utilize higher elevation habitat in

Utah compared to other states, they have large home ranges (27 square kilometers), utilize mountains for nesting habitat, and the males and females use different areas in the winter and summer months. This study was published in 2020; see the full results here: https://escholarship.org/uc/item/5mq4673m

UTAH WILD TURKEY HISTORY

Wild turkeys are not known to have existed in Utah during early European settlement. However, historical and archeological (pictographs, petroglyphs, turkey feather blankets, turkey bones) evidence clearly indicates that wild turkeys, probably the Merriam's subspecies, co-existed with Native Americans in Utah (Newbold et al. 2012).

Since the 1920s, three subspecies of wild turkey have been introduced into Utah with varying degrees of success: eastern, Merriam's and Rio Grande. The earliest translocations were done by interested sportsmen and landowners with the help of the State Fish and Game Department. The first birds stocked were the eastern wild turkey obtained from farm-raised stock. These translocations were unsuccessful.

In the 1950s, what was then the Utah Department of Fish and Game stocked Merriam's wild turkeys obtained from Colorado and Arizona. These translocations established turkeys in Grand, Garfield, Kane, Iron and Washington counties. Subsequently, turkeys from these populations have been trapped and relocated within the state. Additional turkeys obtained from Arizona, Colorado and South Dakota have also been used to supplement and establish Utah turkey populations.

Rio Grande turkeys were obtained from Texas beginning in 1984 and were released near the Pine Valley Mountains in Washington County. These birds did not establish well initially. Additional translocations were planned for 1985, but Rio Grande turkeys being trapped in Texas were diagnosed with Mycoplasma (a well-known avian disease). Consequently, transplanting was postponed until 1989 when the disease issue was rectified.

Beginning in 1989, the UDWR began an aggressive wild turkey trapping and transplanting program using mostly Rio Grande turkeys and occasionally Merriam's turkeys from Arizona, Colorado, Kansas, Oklahoma, South Dakota, Texas and Wyoming.

MANAGEMENT

Past Management

Past management of the wild turkey in Utah has focused on identifying suitable release sites for the varied subspecies and releasing birds into those areas in an effort to establish self-sustaining populations. The DWR released small numbers of turkeys sporadically from 1925 through 1982, typically less than 30 birds per year and often less than 10 birds annually. In 1984, the DWR increased transplant efforts moving over 200 turkeys that year. Turkey translocations remained relatively stable until the early 2000s when over 1,000 turkeys were transplanted each year. Since 2005, turkey transplant numbers have fluctuated around 500

turkeys each year, and has increased to over one thousand birds translocated annually within the state in recent years.

The first spring turkey hunts took place in 1967. The season was closed for a year in 1970, then resumed in 1971 and continues to present. There was a fall hunt as early as 1963 that continued until 1972, discontinued for two years, then resumed from 1974 to 1984. Fall harvest management seasons began again in 2013 on a limited basis to reduce nuisance populations.

From 2001 to 2006, the DWR conducted various combinations of turkey brood and winter flock surveys. These population surveys were discontinued as they did not provide adequate data that could be been used to manage the wild turkey.

As turkey populations have increased throughout Utah there has been more opportunity for turkeys to come into contact with residents and agricultural operations, generating nuisance and depredations complaints. The majority of human-turkey conflicts were first reported in the southern part of the state where turkey populations initially increased significantly. Managers in the Southern and Southeastern regions responded to complaints by moving and hazing turkeys away from problem areas. Subsequent population increases in the Northern and Central regions led to an increase in nuisance reports as turkeys began to heavily use a few populated areas during winter months. In 2013, House Bill 342 was passed directing the DWR to respond to and begin mitigation of turkey-caused material damage within 72 hours of notification, as well as directing the Wildlife Board to reestablish a fall hunt to reduce and disperse nuisance populations.

Current Management

Translocations and Introductions

Utah biologists have learned a great deal about wild turkey management since the first wild turkey release in 1925. Today, biologists are able to translocate different subspecies of wild turkey into the appropriate corresponding habitat. The DWR has transplanted the Merriam's turkey into mountain habitat of southern Utah, and the Rio Grande turkey into bottomland habitats throughout the rest of the state. The DWR also aggressively pursues trapping and relocating wild turkey from existing Utah populations to supplement and establish new populations throughout the state. The DWR supplements existing populations as necessary to maintain genetic diversity and to perpetuate populations.

The DWR works cooperatively with the U.S. Forest Service, U.S. Bureau of Land Management, National Wild Turkey Federation, Sportsmen for Fish and Wildlife, other wildlife agencies and sportsmen's organizations, county and city governments and private landowners to transplant wild turkeys, protect and enhance turkey habitat, and to promote the unique aspects of turkey hunting and viewing opportunities.

Translocations fall into two broad categories of translocations: 1) Translocations targeted at nuisance or depredating populations intended to remove the problem birds and relocate them to an area where they will not be involved in human-wildlife conflict. 2) Translocations intended to introduce a new population or augment an established population. The two categories are not completely separate; nuisance populations can be used to establish new populations. However, the primary driver for the action will have influence on the rigor needed in evaluating recipient habitat and monitoring recipient populations. The DWR adheres to the following guidelines while conducting translocations:

In-state translocation release sites should be evaluated before being added to the release site list for:

1. Basic habitat suitability
    a. Roost trees present
    b. Proximity to nesting habitat
    c. Winter food availability
2. Proximity to commercial poultry and gamebird production facilities
3. Proximity to other agricultural operations
4. Proximity to residential areas
5. Public access to translocated birds, especially during spring hunting seasons.

If wild turkeys are being captured specifically for establish new populations, or if wild turkey are being brought in from out of state a more rigorous evaluation of habitat, and more detailed monitoring plans are needed following Appendix II in the 2022 Utah Upland Game Management Plan.

Current Hunt Structure

As of 2023, there are two primary seasons in Utah, a limited entry season and a general season. In addition a relatively small number of tags are distributed during the fall in areas with high levels of nuisance and/or depredation complaints. Utah's limited entry season begins mid-April and extends roughly two weeks into late April. In 2022, 1,699 limited-entry permits were distributed throughout Utah based on population levels in each region. Limited- entry turkey permits offer higher success rates and a limited number of hunters, and are valid only in the region specified on the permit. Fifteen percent of limited-entry permits are reserved for hunters 17 years of age or younger, the youth limited-entry season dates are the same as the limited-entry season.

The general (over the counter) hunt takes place from late April to the end of May, with an unlimited number of turkey permits available. General season permits are valid statewide. A three-day youth-only general hunt takes place after the limited entry and immediately before the opening of the general season. There is also an additional opportunity for hunters with disabilities. There were 7,632 general-season permits purchased in 2022. The total harvest for limited-entry and general seasons was 2,668. Each hunter may purchase either one limited-entry or one general-season permit per year. Limited-entry and general-season permits allow for the harvest of one bearded turkey, regardless of subspecies, as Utah stopped managing at the subspecies level in 2008

There were an additional 41 conservation permits available for partner organization fundraising. Another 10 permits were available for Cooperative Wildlife Management Unit (CWMU) hunts in 2023, and seven expo permits were offered in 2023. Wild turkey poaching reported reward permits are available in addition to limited-entry permits. The number of poaching reported reward permits is capped at 5 percent of limited-entry permits issued the previous year. Up to an additional 20 percent of the allocated limited-entry permits are available for landowners; permits not allocated to landowners are added to the pool of limited-entry permits and issued through the limited-entry drawing.

In 2024, there will be spring limited-entry, youth-only, and general-season permits offered, as well as fall general-season management harvest permits. Each year, hunt structures will be detailed in the DWRs Upland Game and Turkey Guidebook to reflect current regulations.

Supplemental Feeding

Regular supplemental feeding is not part of DWR's routine management for turkey. It is important to manage populations under natural conditions and by natural forage. Ongoing winter feeding is discouraged because it can allow populations to increase to levels above the habitat's carrying capacity, concentrates birds in areas surrounding feeding sites which increases risks of disease transmission, and can be prohibitively expensive. However, during periods of critical stress, feeding may be warranted to relieve stress during short-term emergencies. A feeding policy has been developed in 2023, and has already been utilized. The guidance provided by this policy includes a description of triggers that warrant feeding, the duration of feeding, the circumstances in which feeding should be avoided, and more details that document each feeding event.

HABITAT

Requirements

General

Suitable habitat includes three key ingredients: trees, forbs and grass. Regardless of the type of environment, this combination must exist for turkeys to thrive. Trees provide food, daytime loafing and escape cover, and- —most importantly — nighttime roost sites. Grasses and forbs provide food for adults and are especially important to poults as an environment in which they can efficiently forage for insects.

The annual home range of wild turkeys varies from 370 to 1,360 acres and contains a mixture of cover types.

Nesting

The characteristic most common to habitat immediately surrounding the nest of the wild turkey is lateral cover. Lateral cover obscures horizontal vision. Ideal nesting cover types are those with well-developed herbaceous or woody vegetation at zero to three feet above the ground. Overhead cover at the nest site from between 50 to 90 percent at a height of 0.5 to 3.4 yards seems preferred as well.

When establishing a nest, wild turkey hens prefer sites that are mesic (having moderate soil moisture). Whether the mesic site condition provides an important microclimate for the hen and eggs, or is simply correlated with greater development of lateral vegetation, is unclear.

Close proximity to adequate brood rearing cover is an important criterion in the hen turkey's selection of the nest site.

Brood Rearing

During the first eight weeks after hatching, there are three essential components of brood rearing habitat. First, poults need an environment that produces an abundance of insects.

Second, poults need habitat in which they can frequently and efficiently forage throughout the day. Third, poults need an area that provides enough cover to hide, but allows the adult hen unobstructed vision for protection from predators.

Therefore, the fundamental component of brood rearing habitat is herbaceous vegetation interspersed with trees. Herbaceous vegetation is key because it provides an ideal foraging environment for poults. Insect abundance is usually greater in open fields than in forest habitats — particularly when the fields are not mowed or grazed.

Moreover, the height of vegetation is another essential feature. Herbaceous vegetation that is 12 to 28 inches in height allows adult hens to see predators at long distances while providing an avenue for the hen and poults to hide.

Turkey broods are seldom found far from trees. Trees may be vital resources for two reasons. First, microclimate is critical to heat regulation in young poults. Cold and wet conditions are significant factors to poult death. Trees provide shelter from rain and shade from heat. Trees also provide escape cover for poults that can fly at the age of 10 to 12 days. The pattern for brood rearing habitat is that of a park-like environment. Complete ground cover of forbs and grasses with average heights of 20 inches, and 10 to 50 percent overhead or nearby tree cover is necessary. Weekly home ranges for wild turkey poults average less than 75 acres, and total summer home ranges are about 250 acres.

Fall and Winter

Wild turkeys seek two imperative habitat ingredients in the fall and winter —food and roosting cover. Vegetation that turkeys utilize during the fall and winter is highly varied. Turkeys increase their use of forested cover during the fall and winter and decrease their use of open areas. Mast (pine nuts, acorns, berries) is the primary food source during fall and winter. Habitat value increases with higher proportions of mast-producing species in the forest and their degree of maturity.

In mountainous environments, spring seeps are an important source of fall and winter food. Seeps provide invertebrates, mast and green vegetation. Because such water does not freeze, it provides a microclimate that allows foraging throughout the winter.

Where agriculture is prominent, a mix of cropland and forest cover provides good turkey habitat. Turkeys make extensive use of grain crops where they are available. Corn, compared with acorns, is higher in protein, lower in fats, and similar in carbohydrates.

The second characteristic paramount to winter habitat is roosting cover. The essential feature of roost cover is a horizontal spreading structure 30 to 100 feet above the ground. In areas where winter temperatures are frequently below freezing, winter roosts tend to be in locations where they are protected from prevailing winds. Roost trees on northeast-facing slopes and that allow turkeys to roost above cold-air drainages are integral to turkey survival in regions of cold winter weather.

Optimal winter conditions are found on south-facing slopes with less than 20 percent gradient and where seeps are spread out; each covering more than 18 square yards. In areas where snow cover of six inches or more persists for two to 16 weeks, the wild turkey may need additional habitat resources.

Habitat Distribution Model

The DWR strives to develop a predictive habitat distribution model; by utilizing known locations of turkeys and habitat characteristics to highlight areas similar to what turkeys are already using. Field observations will improve this model — knowing where turkeys are not located is just as important as knowing where they are. To create this model, three main components are necessary: occurrence points (such as GPS locations or sightings from other locality data), accurate and species-relevant predictors (such as slope, elevation, vegetation types, etc.), and a clear research goal so the model will function for the intended purpose. This model will benefit turkey management in several ways; to be able to better determine placement and method of habitat treatments, predict distribution, to predict critical seasonal habitats for turkeys, etc. On example of how this could benefit turkey management is if critical habitats are identified, a process could be developed to mitigate environmental changes to those areas. The data provided by this model will help guide a plethora of decisions to improve future turkey management.

POPULATION

Historic Trends

No detailed habitat inventories have been conducted to assess historic trends in turkey habitat throughout Utah. However, harvest statistics providing an index of population levels — these are available in Utah's Upland Game Annual Reports available on the UDWR website at: https://wildlife.utah.gov/upland-reports.html . Utah's harvest statistics provide information on overall harvest, effort, hunters afield, hunter success, satisfaction, and perceived crowding to inform management decisions.

Current Status

Currently in Utah, there are 14 million acres of occupied wild turkey habitat (Figure 2). The 2023 occupied habitat map was developed by DWR biologists based on observed wild turkeys, with input from various sources including state and federal biologists, private landowners, hunters, and others.

Future Projections

Aggressive logging of ponderosa pine forests in southern Utah and continued loss of riparian habitats throughout Utah could potentially impact turkey habitat. However, funding is available for wild turkey projects to maintain and enhance habitat. See Table 1 for project information.

Limiting Factors

Annual weather conditions have the greatest impact on Utah's wild turkey populations. Periods of sustained cold temperatures and substantial snow depths can lead to starvation by increasing caloric demand while reducing food availability. Persistent, cold, wet spring weather decrease poult survival and recruitment into the population. Diseases can also impact wild turkey populations, but there has never been a documented population level disease problem in Utah's wild turkey. However, highly pathogenic avian influenza (HPAI) has caused mortality in wildlife in Utah early in 2022. While there are no confirmed cases of HPAI in wild turkeys in Utah, the DWR is scrupulously monitoring outbreaks and updates are available on the DWR website: https://wildlife.utah.gov/avian-influenza. Additionally, the DWR website provides guidance for

domestic poultry or gamebird facilities in the event that wild turkeys are in or near those facilities.

Predation

Predators in localized areas could potentially affect population size, but impacts of predators on wild turkey have not been studied in Utah. However, increased predation on other upland game bird nests, chicks, or adults is typically caused by insufficient habitat, or habitat fragmentation. Fragmentation can also result in elevated predation rates if predators have increased access to native habitats, or game birds are forced to move through unfamiliar or exposed habitats (Schroeder and Baydack 2001, Vander Haegen et al. 2002).

Predator bounty programs are often suggested as a way to improve upland game populations, however they have been shown to be ineffective and costly having little influence on predator population trends since at least the mid 1900's (Bennitt 1948, Douglas and Stebler 1946). Predator control programs may be effective in small areas where high level of control can be maintained to protect imperiled populations, improve translocation success or on select wildlife management areas (Côté and Sutherland 1997, Frey et al. 2003, Dinkins et al. 2016, Conover and Roberts 2017). Expanding, manipulating, or otherwise managing habitats will generally be the most efficient practice to manage the influence of predators on upland game populations.

However, the DWR is supportive of many existing programs that mitigate predator abundance. Landowner Associations, independent landowners, counties, and others offer bounties to kill predators such as coyotes, raccoons and foxes, which keep sportsmen interested in predator hunting and trapping. The DWR does currently operate a coyote bounty program for mule deer, and implements bobcat harvest seasons, and cougars can be taken with just a hunting or combination license year-round, with no bag limit230. The DWR also has a contract with Wildlife Services to remove mammalian predators and ravens for sage-grouse, which likely benefits turkeys as well. Moreover, predators such as striped skunks, raccoons, red foxes, and coyotes are not controlled wildlife — they can be taken year-round without a license.

Estimated Population

Currently, the DWR does not conduct population inventories of wild turkeys, but does receive data that can be used to assess population levels from annual harvest surveys, along with biologist observations from the field, and input from landowners and sportsmen. Formal population surveys in the form of late summer brood counts and winter flock counts were attempted from 2001 to 2006, but did not prove to be cost effective or improve the quality of management. Based on the assumption that 10 percent of Utah's wild turkey population is harvested each spring, the current Utah population is roughly estimated at 20,000 - 30,000 wild turkeys statewide. Populations have proven successful in many regions of the state and will likely continue producing excess individuals that can be transplanted throughout the state to increase population distribution and abundance. Nuisance and depredation will be mitigated through a combination of translocations, hunts, winter habitat improvement, and outreach efforts.

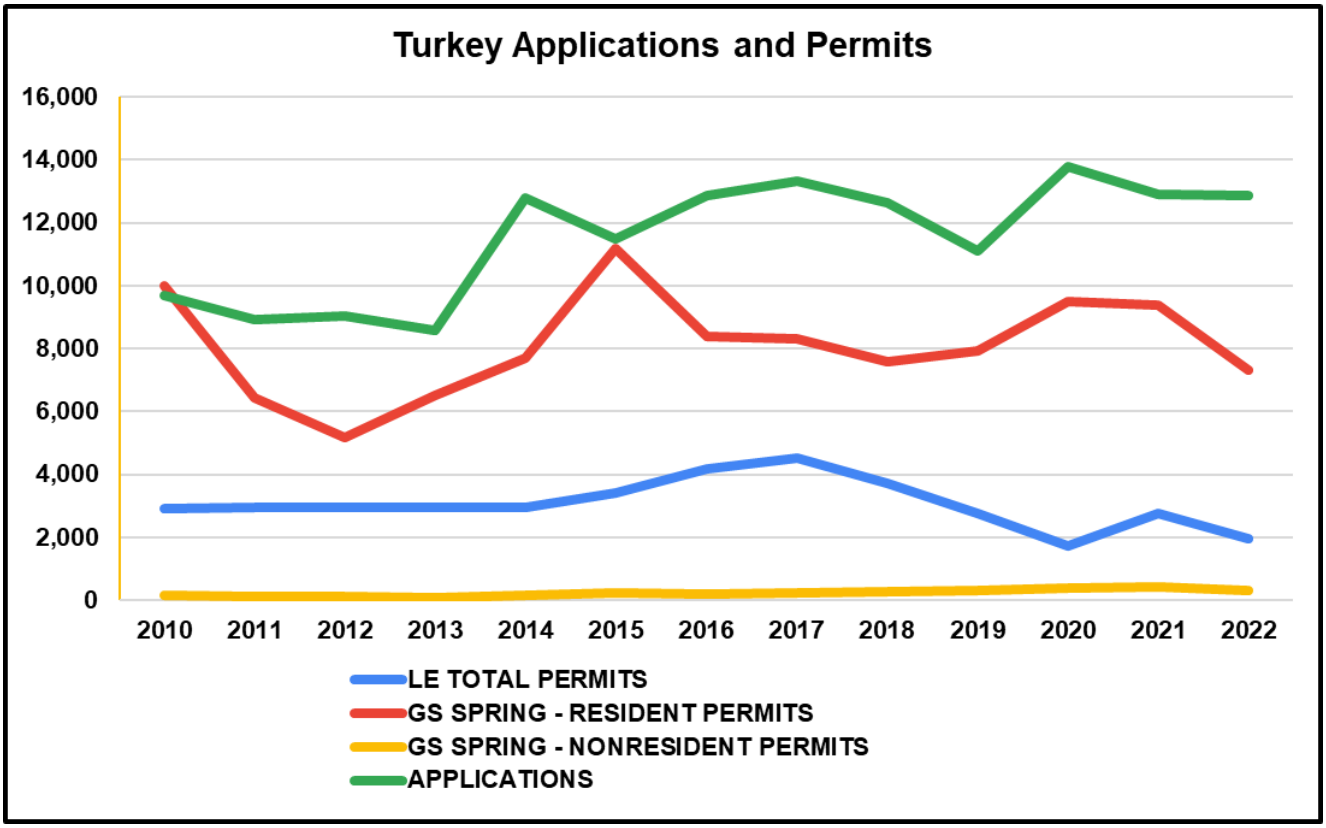
Use and Demand

Harvest

Spring Harvest

The traditional Utah turkey harvest takes place in the spring during April and May — exact season dates are available in the current year's Upland Game and Turkey Guidebook. An annual harvest survey is used to assess three triggers utilized in the spring hunt management: hunter success, satisfaction, and perceived crowding. The DWR aims to keep hunter success above 20 percent, hunter satisfaction above a subjective rating of two out of five, and perceived crowding equal to or below a subjective rating of four out of five. Permit numbers are adjusted to depending on the value of these triggers. If a trigger is met, a committee meeting will be initiated to discuss next steps. Though these metrics are also calculated during the fall management harvest to obtain a long-term data set, they are not considered triggers since those metrics do not determine whether the fall management harvest is necessary and would not initiate a meeting or discussion. Whenever possible, the DWR prioritizes translocations over fall harvest. Each year the DWR compiles an Upland Game Annual Report that includes information on wild turkey hunting, harvest, and yearly regulations. These annual reports can be found on the UDWR website at: https://wildlife.utah.gov/upland-reports.html.

Figure 1. Total Utah wild turkey permit sales and applications 2010 to 2022. Unlimited over the counter permits were available starting in 2010. Three fall permits per hunter were available starting in 2018.



Fall Harvest

A fall management harvest season was offered for the Merriam's subspecies from 1964 to1985. No fall hunting season occurred in Utah from 1985 to 2012. In 2013, a limited fall depredation hunt was offered in the Northern Region to help alleviate wild turkey nuisance situations in Box Elder and Cache counties; 43 wild turkeys were harvested. Since then, the fall management harvest boundaries and permit numbers have fluctuated over time. A fall permit calculator is utilized with input from regional biologists to recommend permit numbers each year for the fall season. See Figures 5, 6, 7, and 8 for fall turkey permit numbers and harvest per region. Note that the Northeastern Region does not implement fall harvest management seasons. A graph depicting the number of turkey complaints per region per year will be added as an appendix.

Wildlife Watching

The wild turkey's distribution throughout Utah provides opportunity for wildlife enthusiasts to view, study, and photograph this distinctive bird. No data has been collected to assess interest in wild turkey viewing.

ECONOMICS

Turkey Related Economic Activity

A 2003 study prepared by Southwick Associates for the National Wild Turkey Federation found that over 2.2 million U.S. hunters spent $1.8 billion on turkey hunting related expenses during the 2003 season. On average each hunter spent $784 on expenses relating to turkey harvest including $207 for travel-related goods, $80 for vehicles, $76 for firearms, and donated $105 for habitat improvement through conservation organizations or other channels.

In 2011, Utah had 193,000 hunters spending an estimated $499 million on hunting related expenses averaging $2,334 per hunter. Out of the total hunters in Utah, 63,000 hunted small game, spending an average of $557 specifically on small game hunting on an annual basis. Average expenditures for wildlife viewing in Utah averaged $727 per person, with 410,000 people participating annually for a total of $585 million in expenditures (US Dept. of Interior 2011).

Utah turkey permit sales peaked in 2009, with 13,947 permits issued. Demand outstripped supply with 20,371 applications for the 10,600 limited entry permits issued in 2009. In 2010, unlimited over the counter permit sales were implemented, and permit numbers were relatively stable compared to 2009, with 13,241 permits sold. In recent years, the total number of limited-entry permits have slightly decreased to accommodate drought conditions. The general season permits have remained relatively constant — an increase was noted during the pandemic in 2020 as over 1,500 permits purchased during the general season, but this is still within the usual fluctuation of general-season permit sales. In 2022, 10,127 hunters hunted wild turkey in the spring, and 3,517 hunters hunted wild turkey in the fall 2021-2022 season. Since there are no updated estimates from Southwick Associates, multiplying the aforementioned average that each hunter spends on turkey hunting by the spring turkey hunters is $12,679,004, which does not account for inflation.

Since the introduction of over-the-counter permit sales in 2010, applications for limited-entry permits have decreased by almost 50 percent; from 20,371 applications for the 2009 limited-

entry season to 12,904 applications for the 2022 limited entry season. However, demand for limited entry permits is still greater than available opportunity. In 2022, there were 12,904 applications for 1,952 permits (see Figure 1 for more detail on demand relative to opportunity).

Management Funding

Funding for wild turkey habitat projects is available from a number of sources. The Federal Aide in Wildlife Restoration Act (Pittman-Robertson Act) of 1937 generates funds from excise taxes on firearms, ammunition and archery equipment. These funds are available to use with state matching funds. Federal Pittman-Robertson funds may provide funding for turkey management and habitat projects.

The Wildlife Habitat Account is a restricted account within the Utah General Fund directed by Utah Code 23-19-43. The habitat account is funded by the sale of licenses, permits, stamps, and certificates of registration. Each year up to $230,000 or 10 percent (whichever is greater) of the Wildlife Habitat Account is allocated to upland game projects for habitat acquisition and improvement, predator control, increasing public access to private land and other upland game related purposes. Habitat funds are made available through the director of the Division of Wildlife. The Habitat Council reviews and recommends proposed projects to the director, and the projects are tracked through the Utah's Watershed Restoration Initiative administrative framework.

Funding for acquiring pen-raised birds for transplanting and releasing in Utah is provided by Utah Code 23-19-24. The code dictates that up to 50 cents of each hunting license fee may be directed to the upland game program to acquire pen-raised birds and to capture and transplant upland game species. These funds are separate and distinct from the funds in the Wildlife Habitat Account. In addition, wild turkey conservation permits, obtained and sold by 501(c)(3) conservation organizations, generate funds that can be used on turkey management and habitat projects.

ISSUES AND CONCERNS

High Priority: Urgent and Important	
Issue	**Concern**
Human-wild turkey conflicts in urban and agricultural settings	High number of complaints of turkey nuisance and depredation in urban and agricultural settings
	Lack of formal guidance with prioritized options and identified resources
Insufficient winter habitat	Starvation during severe weather
	Winter overutilization of urban and agricultural areas
Response to sudden population declines/crashes	Population declines will lead to extirpation of populations without intervention
	Intervention will not be effective without implementation of a population crash response plan prepared in advance of adverse events to guide division actions and identify needed resources
Maintain interagency management cooperation	Emergency feeding will be limited to state and private lands unless otherwise authorized by the land management agency
	Population expansion efforts will be less effective on federal lands without interagency cooperation
Lack of sufficient funding to implement strategies identified in this plan	Nuisance and depredation will receive disproportionate resources
Maintain DWR wild turkey management flexibility	New methods of mitigating human-wild turkey conflicts will be developed and used with sufficient plan flexibility
	DWR staff will be able to implement management practices based on the best available science
Disease transmission from within and from outside Utah, including to and from commercial turkeys. (Note: Disease is a low priority because there is no Utah record of disease transmission between wild and commercial turkeys.)	Economic impacts to commercial turkey producers
	Disease related decline of wild turkey populations

Medium Priority: Less Urgent and Important	
Issue	**Concern**
Insufficient access to hunting and viewing opportunities	Lack of opportunity limits interest, hunter recruitment, and hunter retention
Insufficient outreach and education	Lack of knowledge on where and how to hunt can limit recruitment and retention
	Lack of value given to wild turkey by the public
	Increased nuisance and depredation complaints resulting from lack of knowledge of factors leading to undesirable concentrations of wild turkey and methods to mitigate nuisance
	Lack of knowledge of potential benefits of wild turkey to agriculture
Lack of western population research	Lack of regional information on wild turkey ecology may be impeding the best possible management
Low quality and quantity of breeding and summer habitat	Population growth will be limited
	Hunting and viewing opportunity will be limited

Low Priority: Not Urgent but Important	
Issue	**Concern**
Excessive corvid (crow, raven, magpie) predation	Limited population growth, or population decline
Lack of population monitoring to detect and respond to population declines	Local populations will decline or be extirpated before the population crash response plan can be implemented

CONCLUSIONS

Archeological evidence indicates that the wild turkey is native to Utah. Two distinct subspecies of wild turkey are found in Utah — Merriam's and Rio Grande, with intermediate subspecies filling ecological niches between distinct subspecies. Ponderosa pine habitats are most important for the Merriam's subspecies while cottonwood riparian habitats are most important for Rio Grande subspecies of wild turkeys.

Throughout Utah, there is still habitat capable of supporting wild turkey that is currently unoccupied, providing ample opportunity for populations to be expanded both in numbers and distribution. This will offer additional hunting and viewing opportunity.

Wild turkey range has been successfully expanded in Utah. Subsequently, available spring hunting permits have risen substantially from 1,016 in 2000, when the last management plan was published — see Figure 1 for permit numbers versus applications submitted. There are a limited number of locally overabundant populations resulting in nuisance and limited depredation issues, which are alleviated by the depredation program and the fall management harvest.

Turkey hunting is becoming one of the most popular hunting sports in the United States. This is the result of the multiple states' efforts to establish new wild turkey populations and increase

existing ones. The efforts made in this plan will help ensure healthy turkey populations for future generations to enjoy.

WILD TURKEY MANAGEMENT DIRECTION

Management Goal: Maintain and Improve Wild Turkey Populations to Habitat or Social Carrying Capacity.	
Objectives	**Strategies**
Stabilize populations that are declining outside of natural population fluctuations; especially through catastrophic events (i.e. following fires, severe winters, etc.).	Utilize Population Crash Response Plan
	Supplement declining populations with additional wild turkeys when adequate habitat is available
	Conduct habitat projects to address limiting factors
	Utilize a wild turkey feeding policy for UDWR
	Identify and secure funding sources
	Control predator populations in targeted areas when warranted.
Enhance wild turkey habitat — quality and quantity — by 100,000 acres statewide by 2029.	Map priority treatment areas/critical wild turkey habitats
	Identify population limiting habitats (e.g. winter habitat)
	Identify and secure funding sources.
	Conduct habitat improvement projects in limiting habitat(s) and maximize the benefits to turkeys within all WRI projects that incorporate turkey habitat
	Increase outreach to our agency and non-agency partners, regional habitat biologists and wildlife biologists to increase number of and quality of WRI projects, as well as comments on those projects.
Continue to establish and maintain wild turkey populations in suitable unoccupied and suitable occupied habitat and monitor success.	Utilize translocation guidelines and add as an appendix to the plan
	Deploy as many GPS transmitters as possible to gather translocation data. Incorporate into Migration Initiative
	Prioritize intrastate translocations over interstate efforts
	Conduct more research on Merriam's specifically via GPS transmitters
	Prioritize translocations within Utah over interstate translocations
	Focus interstate translocations into Utah on Merriam's subspecies, with secondary focus on Rio Grande subspecies
	Translocate birds from areas where populations are in excess of social or biological carrying capacity following the Wildlife Board approved wild turkey transplant list

	Identify and secure funding sources

Management Goal: Minimize Human-Turkey Conflicts	
Objectives	**Strategies**
Respond to and mitigate material damage complaints	Develop a baseline of complaint numbers based on complaints per region per 100 estimated wild turkeys (population estimated assuming a 10% harvest)
	Improve outreach and education
	Increase involvement and personal contact between landowners and NGOs to reach mutually beneficial conservation solutions • Publicize NGO contact information in outreach efforts as appropriate
	Develop DWR wild turkey management pamphlet • Respond to complaints as required by law • Develop guidelines and framework for dealing with wild turkeys causing material damage • Outreach section should partner with USU Extension and Farm Bureau to create this document • Should outline: benefits of turkeys, available tools/contact information, advertise Farm Bill and NRCS programs, reason for fall management harvest • Working with external partners on a unified message to increase credibility
	Work to enact local wild turkey feeding ordinances in chronic complaint areas where appropriate • Encourage NGOs to work with county commissioners; Division encourages municipalities to adopt feeding bans
	Improve habitat to draw wild turkey populations away from conflict areas.
	Translocate complaint wild turkeys as per the approved transplant map
	Continue a targeted fall wild turkey harvest management season
	Formalized assistance agreements with National Wild Turkey Federation and/or Sportsmen for Fish and Wildlife and other NGOs • Identify and secure funding sources
Respond to and educate complainants of chronic nuisance issues	Develop a baseline of complaint numbers based on complaints per region per 100 estimated wild turkeys (based on 10% harvest population estimate)
	Improve outreach and education

	• Create and utilize a landowner satisfaction survey for those who participate in the depredation program
	• Outreach section will create a targeted email for fall turkey permit holders to educate them about fall harvest
	  ○ Explain how habitat projects are funded
	  ○ Advertise the success of turkeys in Utah to Utah hunters and the general public
	  ○ Explore more mentoring programs with multiple NGOs
	  ○ Educate the public regarding youth hunting opportunities and that fall harvest is a management tool, not designed for opportunity
	  ○ Explain why hen harvest is integral to the success of the fall management harvest
	• Other outreach education regarding the plan will include:
	  ○ Podcast
	  ○ Blog post
	  ○ News release explaining fall vs. spring hunting structure
	  ○ Create an infographic
	  ○ Include locavore movement information

	Work to enact local wild turkey feeding ordinances in chronic complaint areas where appropriate Encourage NGOs to work with county commissioners; Division will be supportive if municipalities recommend feeding bans • Improve habitat to draw wild turkey populations away from conflict areas.
	Translocate complaint turkeys as per the approved transplant map
	Continue a targeted fall wild turkey harvest management season
	Identify and secure funding sources

Management Goal: Improve Wild Turkey Hunting Opportunities	
Objectives	**Strategies**
Maintain and ncrease the amount of accessible hunting areas throughout the state	Identify areas with wild turkey habitat that are not currently accessible for public hunting
	Identify and secure funding sources
	Secure public access (Walk-In Access (WIA), Easements, etc.) though agreements with landowners or management agencies
Increase the number of turkey hunters by 10 percent in the state by 2029	Provide optimized season timing and length: need research to determine peak breeding and nesting dates for turkeys in Utah to better inform season dates
	Continue to utilize outreach efforts to maximize hunter interest
	Need survey methodology for a population estimate
Educate hunters (manage expectations, how to view the fall management harvest, how to hunt effectively, etc.)	Continue to offer turkey hunting workshops, seminars and other Wildlife Recreation Program events in person and online • Work with conservation groups, and other partners to host these events
	Work with NGOs to develop a mentoring program
	Continue the regional hunting forecasts
	Increase turkey distribution and numbers throughout the state
	Continue implementing a system for regional permit allocation for the LE and fall seasons
	Continue to provide and educate the public about existing youth opportunities
	Continue to produce content (and partner with NGOs as appropriate) on Instagram, Facebook, Twitter, YouTube, DWR blog, podcasts, informational quizzes and videos, news releases, newsletters, newspaper, radio, state fair presence, television interviews, public meetings, expos, and orientation courses

Management Goal: Enhance the Appreciation of Wild Turkeys in Utah	
Objectives	**Strategies**
Increase targeted distribution of educational materials and presentations on the benefits of wild turkeys	Develop or otherwise make available presentations to offer to agricultural communities and other groups on the benefits of wild turkeys
Increase the number of participants at wild turkey events by 10% by 2029	Develop a baseline of events and participant numbers
	Increase support and partnerships with conservation organizations

	Increase availability of turkey educational resources from UDWR and conservation organizations, and improve ease of use of the UDWR wild turkey web pages.
	Establish more viewing events and educational opportunities (around Thanksgiving, translocations involving schools, local governments, spring strut, etc.) • Involve Future Farmers of America (FFA), Scouts, 4H and other youth groups • Involve local government leaders
Enhance Interagency Cooperation	Increase communication with other agencies regarding turkey updates at regional interagency meetings
	Coordinate between UDWR regional and Salt Lake Office staff prior to interagency meetings
	Complete MOU with federal agencies and NGOs at the state level and update as needed
	Work cooperatively to provide access to federal lands (e.g. open gates, easements, roads, etc.)

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FIGURES

Figure 2. Occupied Wild Turkey Habitat Map, Utah 2023. Shaded area (blue) represents occupied turkey habitat.

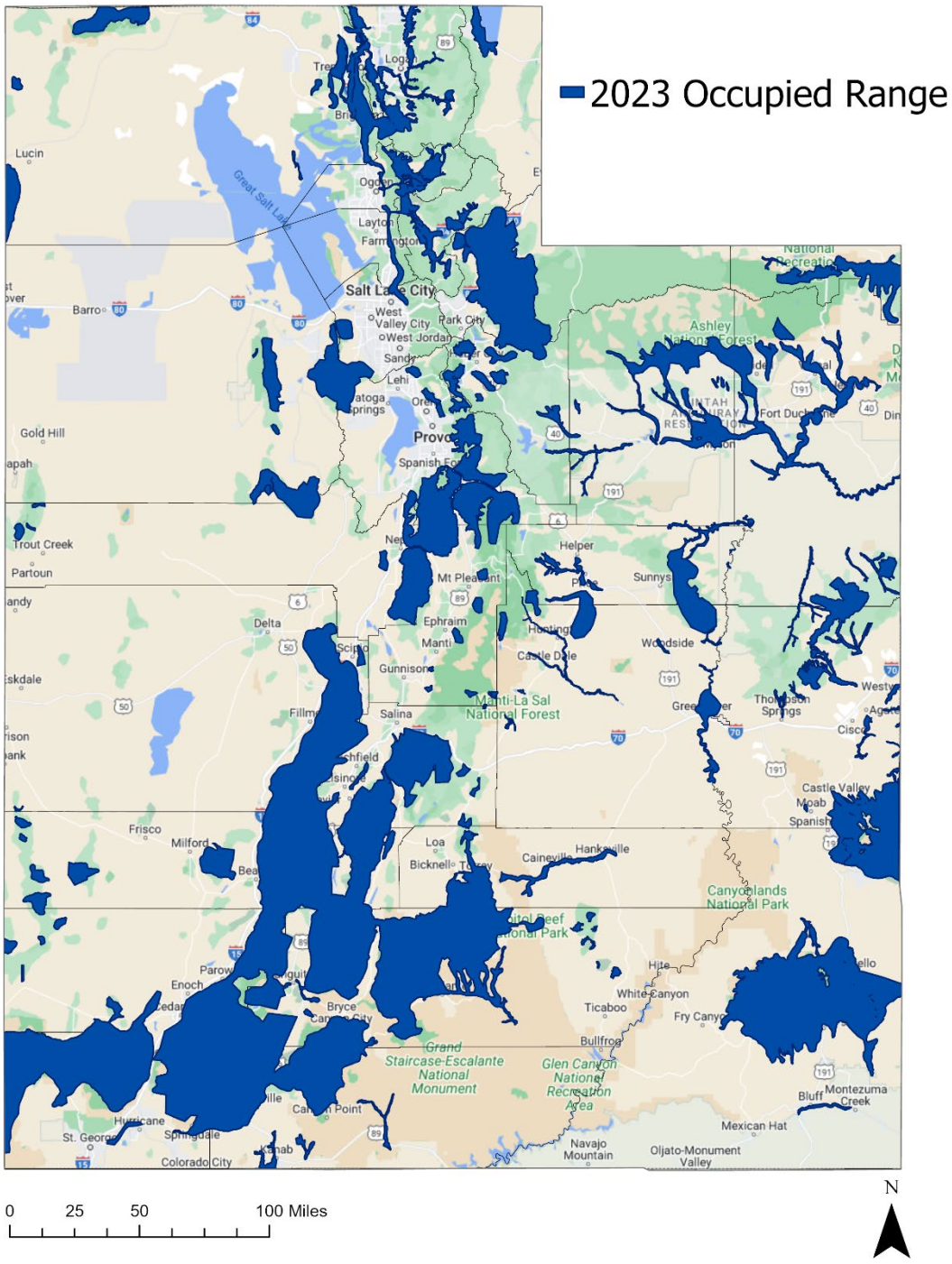

Figure 3. Occupied Wild Turkey Range: 1995-2023

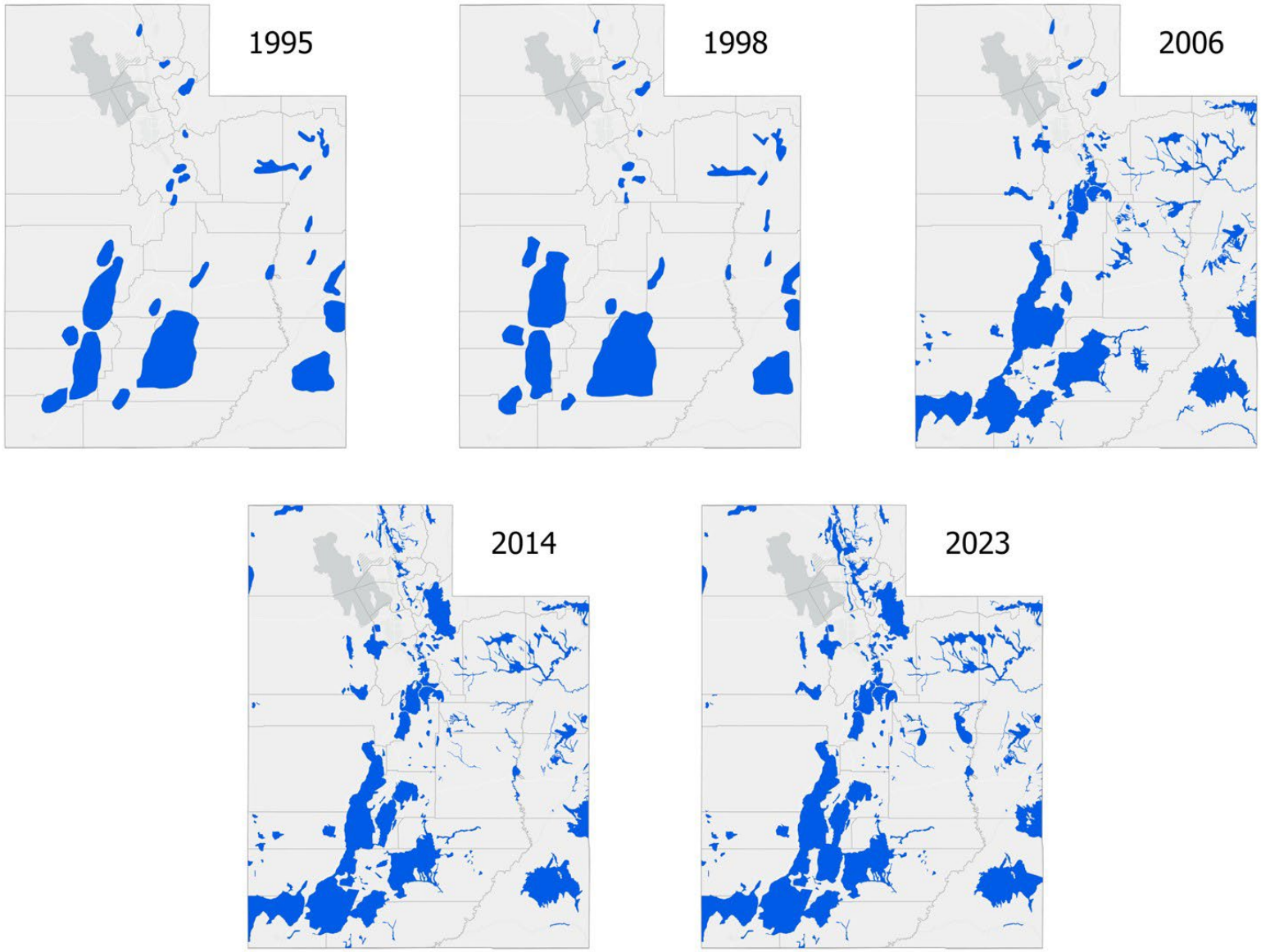

Figure 4. New and Existing Release Sites (2023-2028)

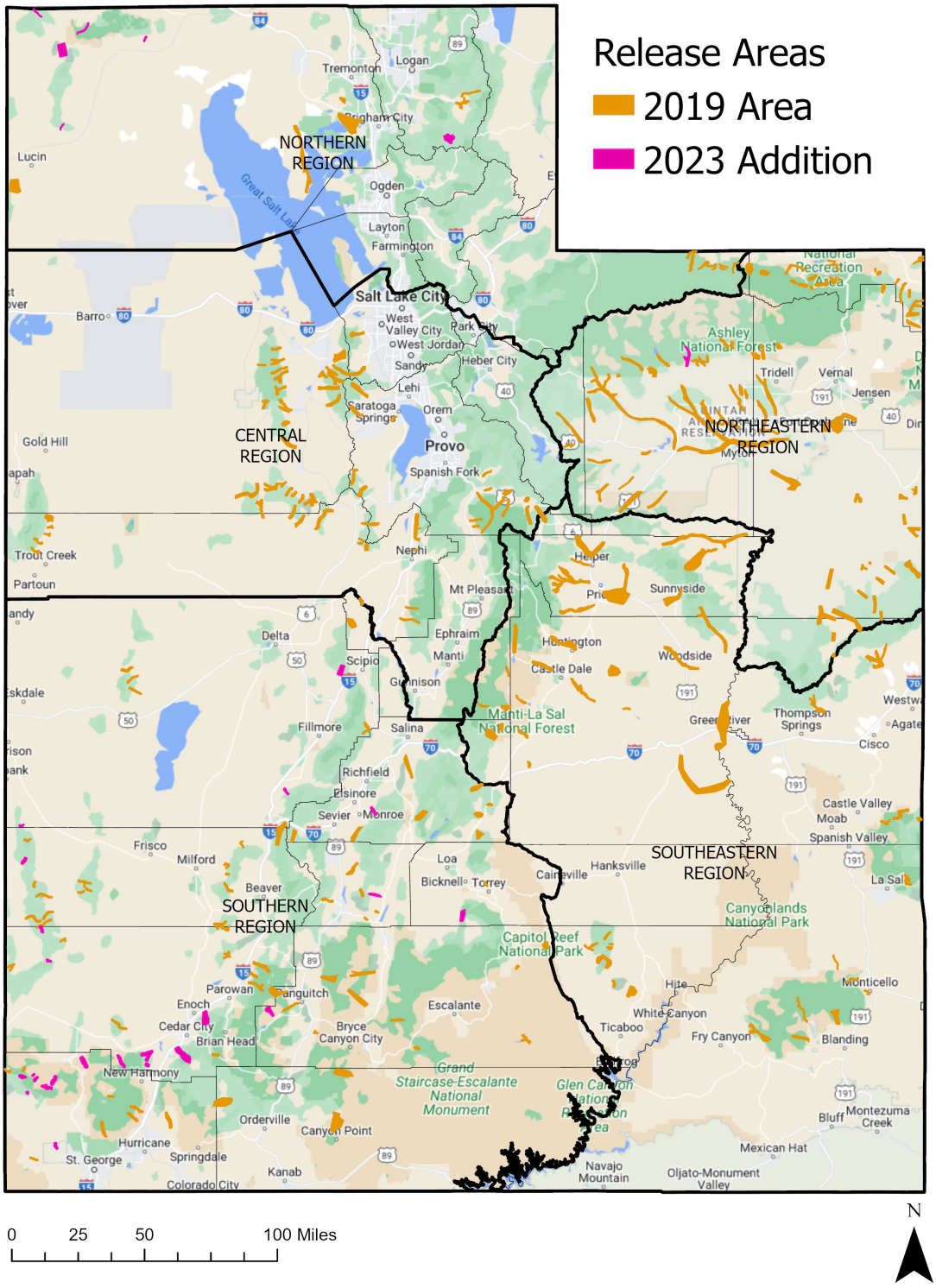

Figure 5. Northern Region Fall Turkey Permits and Harvest

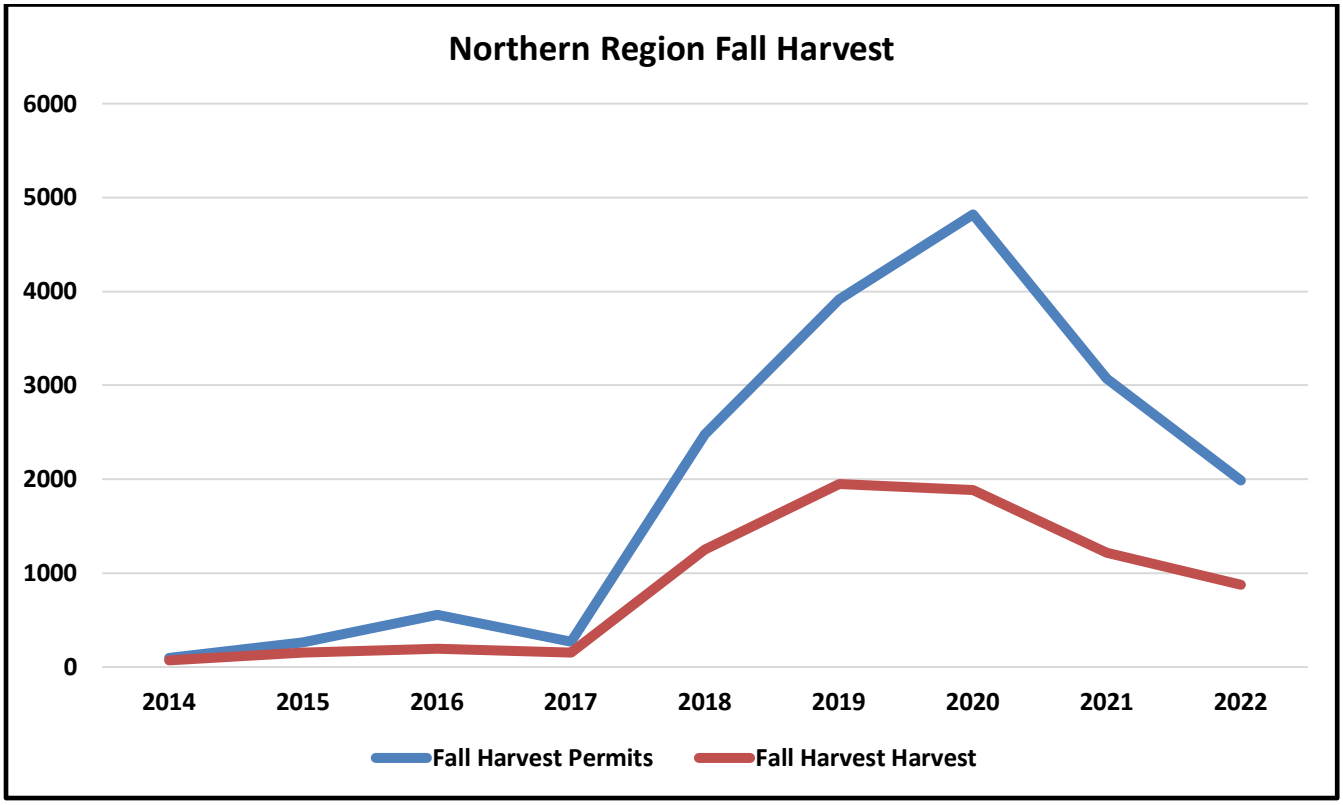

Figure 6. Central Region Fall Turkey Permits and Harvest

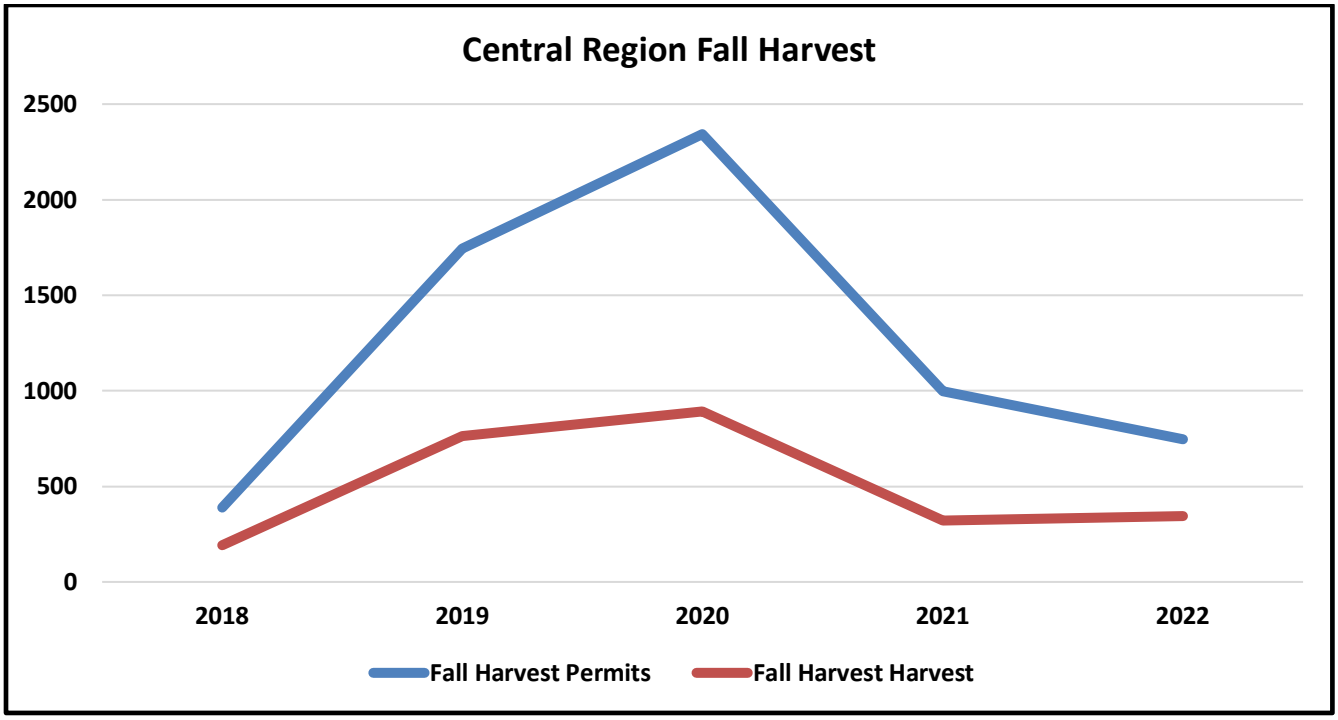

Figure 7. Southern Region Fall Turkey Permits and Harvest

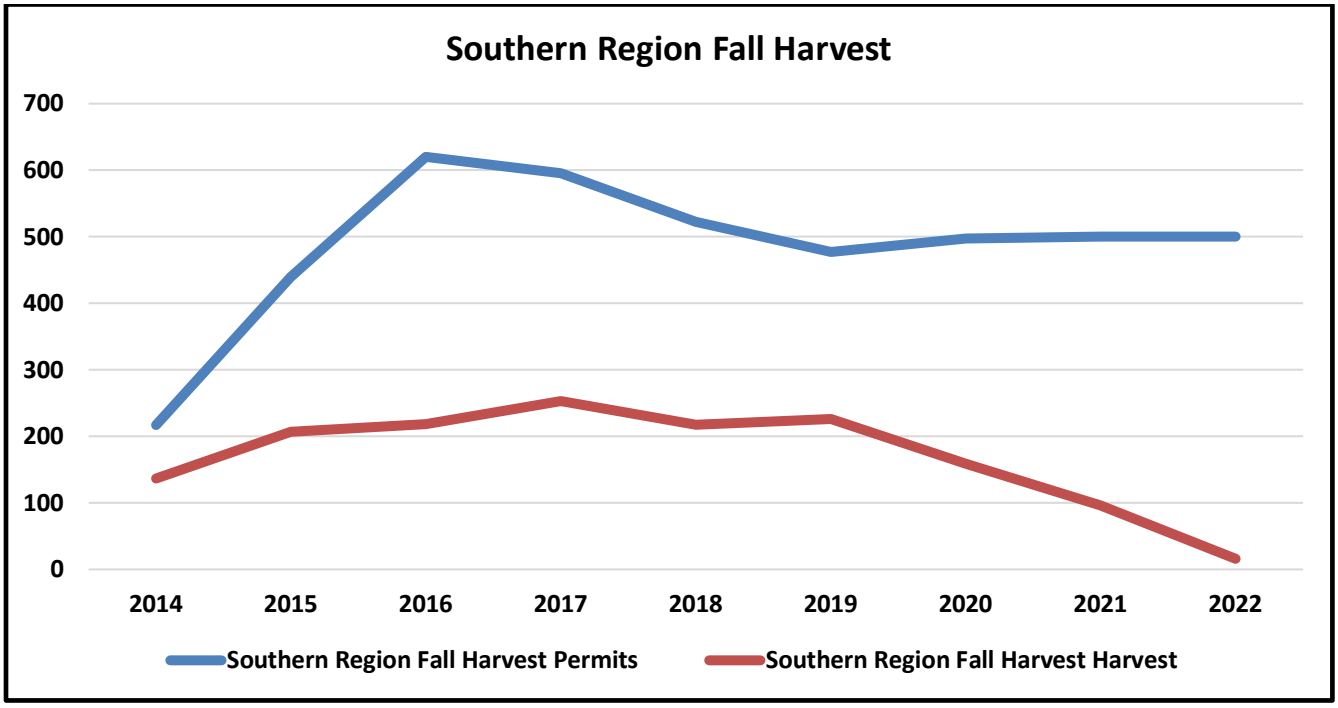

Figure 8. Southeastern Region Fall Turkey Permits and Harvest

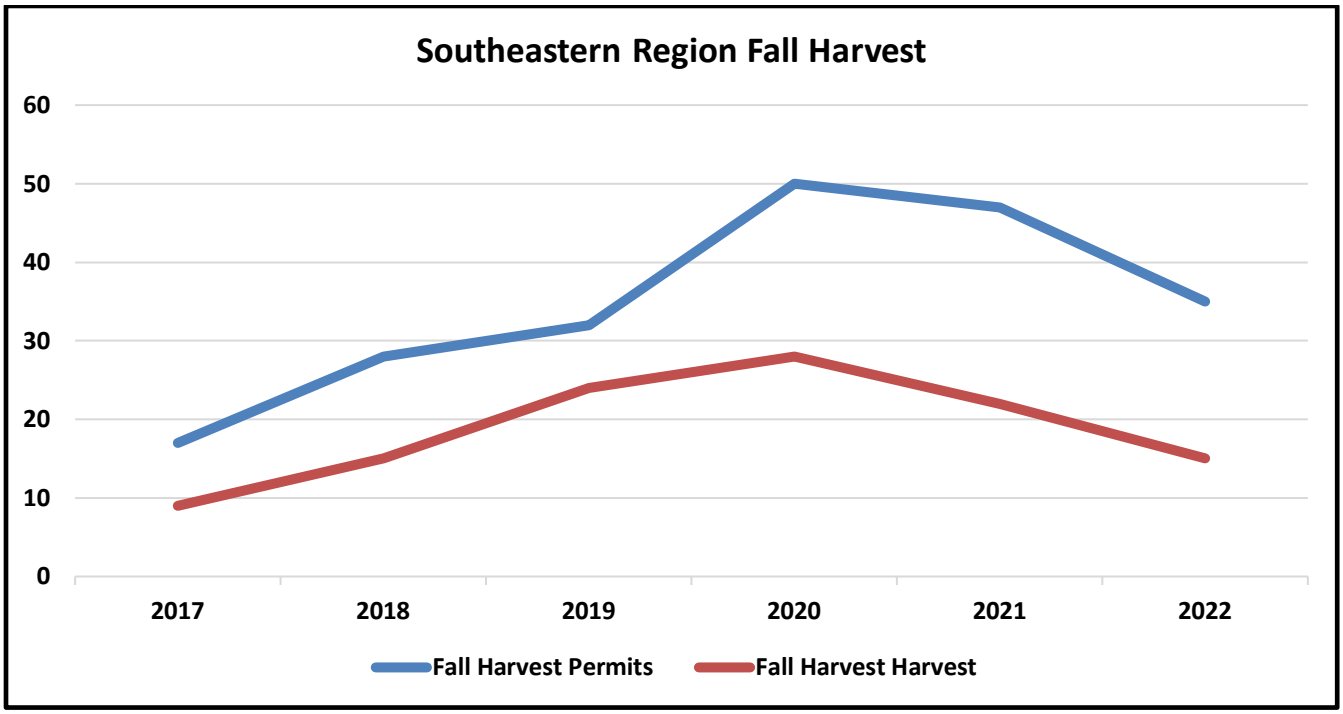

Figure 9. Fall Management Harvest Success with Multiple Permits

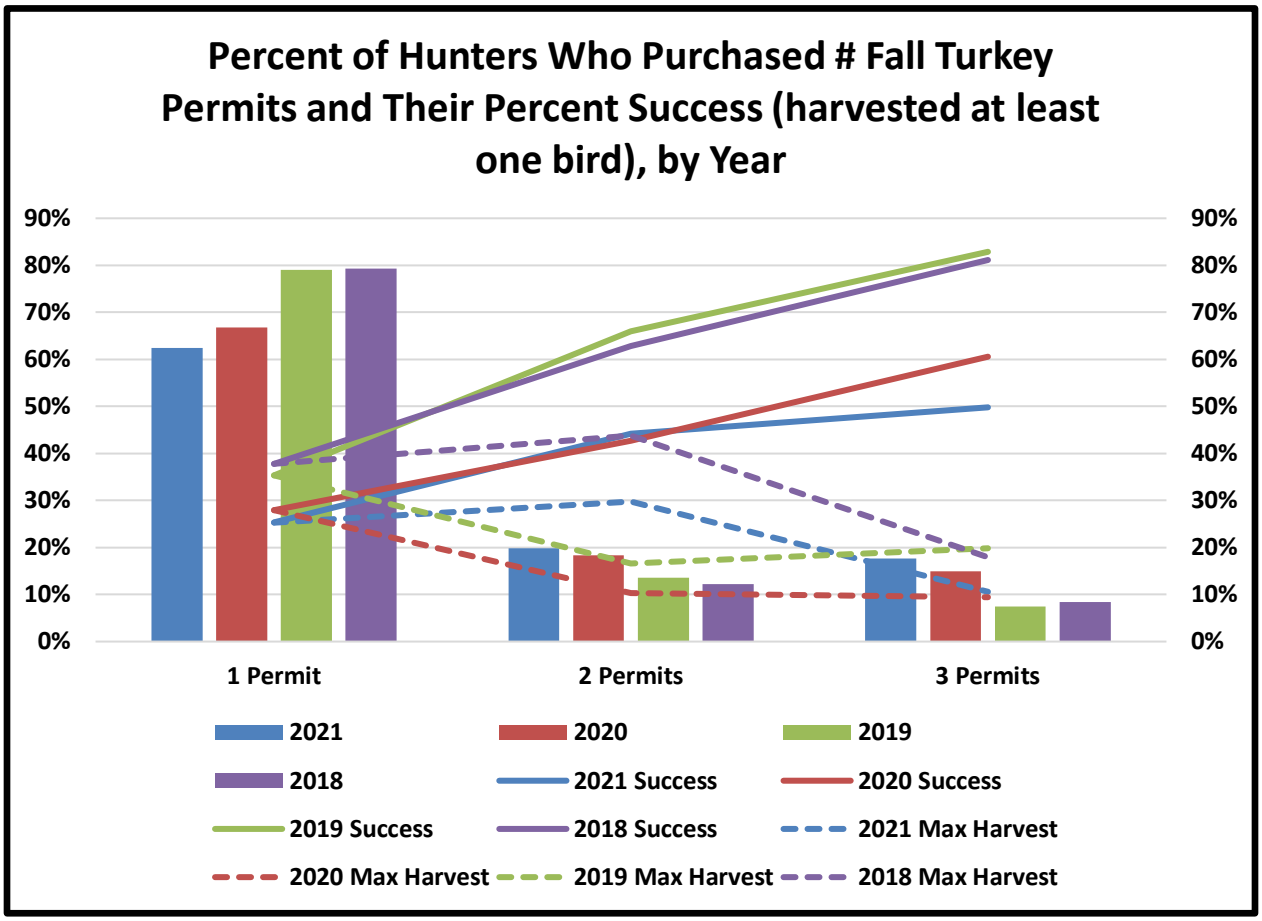

Table 1. Watershed Restoration Initiative (WRI) Projects that Benefit Turkeys

FY Implimented	Projects Listing Turkey as a Benefiting Species	Total from UWRI Account	Total of In-Kind	Total of Partner Contribution	Total Bugeted	Total Terrestrial Acres	Total Aquatic/Riparian Acres	Total Stream Miles	Total Easement Acquisition Acres
2005	1	$ 100,000.00	$ -	$ -	$ 100,000.00	487.8	0.0	1.0	0.0
2006	25	$ 779,097.25	$ 75,960.00	$ 367,000.00	$ 1,222,057.25	8944.5	28.1	25.4	0.0
2007	19	$ 624,759.69	$ 123,141.48	$ 840,498.50	$ 1,588,399.67	5115.3	0.0	17.7	0.0
2008	32	$ 1,098,219.86	$ 403,436.00	$ 562,680.00	$ 2,064,335.86	16280.0	0.0	78.9	0.0
2009	36	$ 2,230,160.71	$ 70,710.00	$ 1,270,019.04	$ 3,570,889.75	12935.8	210.4	52.2	1000.6
2010	31	$ 2,336,879.29	$ 5,100.00	$ 211,750.00	$ 2,553,729.29	9495.0	0.0	36.9	364.6
2011	22	$ 1,859,476.90	$ 173,503.00	$ 371,282.56	$ 2,404,262.46	52918.5	5.7	172.5	1000.6
2012	26	$ 1,575,455.00	$ 305,580.00	$ 439,007.00	$ 2,320,042.00	6668.3	452.8	30.3	683.5
2013	33	$ 4,633,610.70	$ 459,142.73	$ 1,903,124.42	$ 6,995,877.85	34978.8	452.0	172.3	0.0
2014	29	$ 2,664,011.96	$ 681,766.90	$ 450,650.00	$ 3,796,428.86	16492.0	119.0	47.1	0.0
2015	24	$ 1,608,785.06	$ 1,245,271.82	$ 376,429.86	$ 3,230,486.74	10124.4	924.2	66.4	0.0
2016	42	$ 3,765,279.36	$ 1,706,623.32	$ 1,711,487.46	$ 7,183,390.14	20752.2	1774.9	113.2	0.0
2017	40	$ 4,818,449.79	$ 2,074,524.91	$ 2,950,938.35	$ 9,843,913.05	24098.9	2298.7	85.5	0.0
2018	44	$ 6,147,885.85	$ 2,255,156.19	$ 2,039,338.67	$ 10,442,380.71	18025.8	3263.3	98.3	0.0
2019	50	$ 13,420,241.56	$ 1,773,411.71	$ 5,415,515.38	$ 20,609,168.65	41182.0	2717.6	181.6	0.0
2020	58	$ 17,899,696.12	$ 2,757,006.43	$ 2,643,287.46	$ 23,299,990.01	93747.3	4495.5	332.5	0.0
2021	56	$ 22,105,377.97	$ 2,617,949.50	$ 5,793,312.50	$ 30,516,639.97	224308.0	4066.9	493.3	0.0
2022	62	$ 24,027,134.73	$ 3,849,511.27	$ 1,513,011.49	$ 29,389,657.49	122898.7	3076.4	144.3	0.0
TOTAL	630				$ 161,131,649.75	719,453.4	23,885.6	2149.3	3049.3

APPENDIX 1: Utah Wild Turkey Population Crash Response

Although wild turkey populations throughout Utah have been trending upwards over the long term, populations are dynamic and may decrease suddenly or slowly as well. In the event that a population has declined, and there is a desire to re-establish or recover the population this plan lays out basic guidelines for establishing that there is a significant population decline ("crash") and responses to that population decline.

Utah does not have regular population surveys to document population levels, therefore there is not a quantitative definition of decline that can be established. However, data from biologist observations, hunter observations, observations from the general public, citizen science resources, and hunter survey data can be used to describe a significant decline in populations relative to what was previously present in an area.

1) Identify a lead biologist for the Crash Response. Generally this is the DWR regional biologist for the area.
2) Identify the "crashed" population.
    i) Estimated number of flocks and size of flocks prior to the crash and at present.
        (1) Note that upland bird populations can vary significantly, and a decline due to annual weather conditions may result in variation that will rebound without intervention.
    ii) Define the time period of decline (i.e. single event or long term decline).
    iii) Define the geographic extent of the impacted population.
3) Identify and document the reason for the population decline.
    i) Disease outbreak
    ii) Habitat loss
    iii) Weather
        (1) Emergency feeding may be appropriate to stop further loss. See the Wild Turkey Feeding Policy.
    iv) Over harvest
    v) Trapping
    vi) Altered distribution
    vii) Other
4) Mitigate factors leading to decline.
    i) When factors leading to the population decline have been addressed, translocations may be appropriate to reestablish or augment populations. This may simply be waiting for spring after a hard winter, or could be many years of work improving habitat.
    ii) If there are sufficient remaining turkeys in the population the population may recover on its own, and further action may not be needed.
    iii) If it is not possible to reverse the cause of the population decline, it is not appropriate to translocate more turkeys into the area.
5) Translocate wild turkeys to reestablish or augment populations.
    i) Identify a source population.
        (1) Turkeys trapped to mitigate nuisance and depredation issues within Utah should be used if available.
        (2) If not available, identify a source population within Utah that is:
            (a) Sufficiently large that only a small portion (<10%) of the present flocks will removed.

(b) From similar habitat to the introduction area.

ii) If not available, a source population from out of state may be sought.

iii) Pen-reared turkeys of any type should not be released into the wild.

6) Plan and implement translocations following the translocation section of the 2023 Utah Wild Turkey Management Plan.

7) Final plan is approved by the DWR Regional Wildlife Manager, Regional Supervisor, Upland Game Coordinator, Wildlife Section Chief and Director.