RAC AGENDA – May 2022

1. Welcome, RAC Introductions and RAC Procedure
   - RAC Chair

2. Approval of Agenda and Minutes **ACTION**
   - RAC Chair

3. Wildlife Board Meeting Update **INFORMATIONAL**
   - RAC Chair

4. Regional Update **INFORMATIONAL**
   - DWR Regional Supervisor

5. Conflict of Interest **INFORMATIONAL**
   - Kyle Maynard, Assistant Attorney General

6. Upland Game Management Plan, Fall Turkey Permits and Air Rifle Recommendations **ACTION**
   - Heather Talley, Upland Game Coordinator

7. Landowner Rule Amendments – R657-43 **ACTION**
   - Chad Wilson, Private Lands/Public Wildlife Coordinator

Regional Presentations Only

SER	Gordon Creek WMA HMP Kade Lazenby, Impact Analysis Biologist	**INFORMATIONAL**
SR	Bicknell Bottoms WMA HMP Gary Bezzant, SR Habitat Manager	**INFORMATIONAL**

CR RAC – May 10th, 6:00 PM
Wildlife Resources Conference Room
1115 N. Main Street, Springville
https://youtu.be/XrDBfBsgIaI

NR RAC – May 11th, 6:00 PM
Weber County Commission Chambers
2380 Washington Blvd. Suite #240, Ogden
https://youtu.be/FskS4bQSw5I

SR RAC – May 17th, 6:00 PM
DNR Richfield City Complex
2031 Industrial Park Rd., Richfield
https://youtu.be/7AfQbrR4QvI

SER RAC – May 18th, 6:30 PM
John Wesley Powell Museum
1765 E. Main St., Green River
https://youtu.be/gkJeCPVkUQo

NER RAC – May 19th, 6:30 PM
Wildlife Resources NER Office
318 North Vernal Ave., Vernal
https://youtu.be/cqblpkCW3Q4

Board Meeting – June 2nd, 9:00 AM
Eccles Wildlife Education Center, Farmington
https://youtu.be/8HW1PKRZ7p4

State of Utah

SPENCER J. COX
Governor

DEIDRE M. HENDERSON
Lieutenant Governor

Department of Natural Resources

BRIAN C. STEED
Executive Director

Division of Wildlife Resources

J. SHIRLEY
Division Director

May 5, 2022

TO: Utah Wildlife Board / Regional Advisory Council Members

FROM: Heather Talley

SUBJECT: 2022 Upland Game and Wild Turkey Recommendations

Summary of Recommended Changes:

Upland game management plan (see attached for complete plan)

Fall Wild Turkey Recommendation

- Currently, an individual can purchase three either sex permits available for turkeys in the fall. The fall hunt was implemented in 2014 as another tool to address nuisance and depredation. Since the goal of these hunts is to decrease populations in urban and depredation areas, we hoped to harvest more mostly females. However, we have noticed that a higher proportion of male turkeys are taken during the fall than was anticipated, and we would rather leave toms for the spring hunt.
- Therefore, we are recommending to issue two beardless permits and one Hunter's Choice or either sex permit in the fall. We realize that there will be some take of jakes or juvenile males in the harvest of beardless birds, but omitting toms or bearded birds from the harvest to a greater extent will result in a higher harvest of females, which is the goal. And this will leave more adult males for the spring hunt.

Air Rifle Recommendation

- During the 2022 legislative session, the Utah Wildlife Board was directed to designate species that may be hunted with air guns, recommendations are being made to allow for this new weapon type for fall turkey hunting, rabbits and hares.

Utah Upland Game Management Plan

Utah Division of Wildlife Resources

Utah Department of Natural Resources

Table of Contents

Contents

Title Page 1
Utah Upland Game Plan Committee: 5
EXECUTIVE SUMMARY 6
INTRODUCTION 7
Population and Harvest Monitoring 8
Habitat Improvement and Management 9
Maintaining and Increasing Hunter Opportunities 10
MANAGEMENT ISSUES 10
HARVEST MANAGEMENT 11
HARVEST SURVEYS 13
ROADSIDE SURVEYS 14
PREDATION 15
HABITAT IMPROVEMENT AND MANAGEMENT 16
ARTIFICIAL WATER SOURCES 20
HUNTER OPPORTUNITY 21
HUNTER OPINION SURVEY 21
Upland Game Species Accounts 23
FOREST GROUSE 23
Ruffed Grouse 23
Dusky Grouse 24
Population Status/Monitoring 25
Harvest 25
Threats 26
WHITE-TAILED PTARMIGAN 29
Population Status/Monitoring 29
Harvest 30
Threats 31
QUAIL 33
CALIFORNIA QUAIL 33

Population Status/Monitoring 34
Harvest 34
Threats 36
GAMBEL'S QUAIL 38
Population Status/Monitoring 38
Harvest 39
Threats 39
SCALED QUAIL 41
Population Status/Monitoring 41
Harvest 41
Threats 42
CHUKAR PARTRIDGE 42
Population Status/Monitoring 43
Harvest 43
Threats 44
Translocations 44
Water Developments 44
GREY (HUNGARIAN) PARTRIDGE 46
Population Status/Monitoring 46
Harvest 47
Threats 47
RING-NECKED PHEASANT 49
Population Status/Monitoring 49
Stocking Program 50
Harvest 50
Threats 51
RABBITS AND HARES 53
Harvest 58
Population Status/Monitoring 59
UPLAND GAME MANAGEMENT DIRECTION 60
REGIONAL SPECIES PRIORITIES 65
NORTHERN REGION 65
CENTRAL REGION 66

NORTHEASTERN REGION 67
SOUTHEASTERN REGION 67
SOUTHERN REGION 68
APPENDICES 69
Appendix 1: Species Specific Management Plans 69
Appendix 2: Upland Game Translocations 70
Appendix 3: Upland Game Water Developments 71
Appendix 4: Upland Opinion and Harvest Survey Methodology 71
Appendix 5: Upland Opinion Survey Summary 72
METHODS 72
KEY FINDINGS 72
Research Priorities 74

Utah Upland Game Plan Committee:

Dave Cook……..Bureau of Land Management

Dave Dahlgren……..Utah State University

Wade Garrett……Utah Farm Bureau

Stan Gurley…….National Resource Conservation Service

Natasha Hadden……..United States Forest Service

Charlie Holtz……..….Pheasants Forever

Randy Hutchison……...Northern Regional Advisory Committee

Randy Larsen…….Brigham Young University

Travis Proctor……..Utah Wild Chukar Foundation

Paula Richmond…….Sportsmen for Fish and Wildlife

Bryce Thurgood……..Utah Wildlife Board

Bret Wonnacott…….National Shoot and Retrieve Association

Lynn Worwood……..National Wild Turkey Federation

Division of Wildlife Resources Committee Members

James Christensen…….……..Northern Region Wildlife Manager

Avery Cook……...Upland Project Leader

Heather Talley…….Upland Game Coordinator

EXECUTIVE SUMMARY

The purpose of this Upland Game Management Plan is to create a more strategic approach to upland game management, and to implement measurable objectives and strategies for managing upland game species in Utah. While some upland species have management plans in Utah, most upland species do not. Greater sage-grouse (*Centrocercus urophasianus*), Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*), and wild turkey (*Meleagris gallopavo*) have individual plans (Appendix 1) and will not be incorporated into this document. This upland game management plan (hereinafter; the Plan) will provide guidance to the Utah Division of Wildlife Resources (DWR) for dusky grouse (*Dendragapus obscurus*), ruffed grouse (*Bonasa umbellus*), white-tailed ptarmigan (*Lagopus leucurus*), California quail (*Callipepla californica*), Gambel's quail (*Callipepla gambelii*), chukar partridge (*Alectoris chukar*), grey (Hungarian) partridge (*Perdix perdix*), ring-necked pheasant (*Phasianus colchicus*), mountain cottontail (*S. nuttallii*), desert cottontail (*S. audubonii*), and snowshoe hare (*Lepus americanus*). The Plan will direct the implementation of management practices to create, maintain or improve upland game habitat and populations, increase transparency by explicating objectives/goals, and offer recreational hunting opportunities that coincide with Utah hunters' preferences as much as possible, while maintaining biological integrity and adapting to new circumstances. The DWR conducted an opinion survey in January 2022 to gather the opinions of upland game hunters in Utah and ensure relevant topics were discussed during committee meetings for this plan (Appendix 5).

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 upland game populations and habitat, as well as maintain recreational hunting opportunities.

This Plan will serve as the action plan for upland game management in Utah. Key issues that impact upland game species are identified, and will comprehensively guide the direction for upland game management during the next ten years (2022-2032). 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. The Plan indicates three goals for the Plan to address:

- Population Maintenance and Harvest Monitoring
- Habitat Improvement and Management
- Maintain and Increase Hunting Opportunity

INTRODUCTION

Utah hunters have a numerous upland game hunting opportunities available within the state. The variety of ecosystems in Utah provide habitat for 18 hunted upland game species, including three lagomorphs (rabbits and hares), 10 resident upland game birds, and five migratory upland game birds. Additionally there are turkey hunting opportunities throughout the state, and potential to add scaled quail as a huntable species in the future if their range continues to expand northward. Cottontail rabbits are ubiquitous throughout the state, and snowshoe hare are found in many higher elevation areas of Utah. Two species of forest grouse – dusky and ruffed – and two species of prairie grouse – Columbian sharp-tailed and greater sage-grouse, as well as Gambel's quail – are native to the state. Hunting of introduced species includes chukar, grey partridge, California quail and pheasants. Though in the past Utah had more abundant introduced ring-necked pheasant (hereinafter pheasant) populations, these populations have declined due to land-use changes, including urbanization and farming practices, which reduced the majority of available habitat in the state. The upland game hunting resources available in Utah are exceptional — especially considering the availability of public land, diversity of species, and variety of habitats available to hunters. Season dates and bag limits allow for ample hunter opportunity for these species.

A variety of upland game exists in Utah due to the diversity of habitats available, ranging from deserts to forests to wetlands. Typically, upland game have been managed with the following assumptions:

- Hunter harvest generally accounts for 10% or less of annual mortality in the population
- Populations cycle largely independently of hunter harvest mortality
- Harvest mortality is generally compensatory to overwinter survival

Though these principles are broadly applicable, species vary considerably their life histories necessitating the consideration of management specific to species and distinct populations. A recent review of upland game bird harvest management (Dahlgren et. al 2021) suggests the need for reassessment of long-held assumptions (see above) used for harvest strategies. Given our rapidly changing environments and habitat loss, combined with the results of more recent scientific literature concerning the effects of harvest on upland game, there is a need for more scientifically-based harvest strategies and/or assessment and justification for current management approaches. To accomplish this, more baseline data is necessary, such as monitoring population changes, productivity, hunter characteristics, etc. Furthermore, for many upland game species in Utah, there is a paucity of information on how populations respond to habitat management and other conservation efforts.

To capture the opinions of the upland game hunting community in Utah, a committee was formed to assist with the creation of the Plan. Members of the committee represented the stakeholders of the following parties: Brigham Young University, the Bureau of Land Management, the National Resource Conservation Service, National Shoot and Retrieve

Association, National Wild Turkey Federation, Pheasants Forever, DWR Regional Advisory Councils, Sportsmen for Fish and Wildlife, United States Forest Service, the Utah Farm Bureau, Utah State University, Utah Wild Chukar Foundation, and the Utah Wildlife Board. The individuals representing these agencies and organizations provided input during the committee meetings for this plan. Opinions and feedback were discussed during these meetings to ultimately guide the direction of the plan and address the concerns of different sectors of the hunting public. The upland game planning committee concluded that the three overarching goals of population and harvest monitoring, maintaining habitat through management projects, and maintaining and increasing hunter opportunities should be focal points of the Plan. One of the tools the committee used was the results of the upland game public opinion survey (Appendix 5). This survey reinforced the desire for baseline biological data to guide management, including habitat improvements and increased access for upland game hunters in Utah. The upland game public survey provided key insights on attitudes, perceptions and behaviors of hunters. This information, combined with the wide range of expertise of the committee members, helped the upland game planning committee determined that these overarching goals are paramount to achieve more precise management of upland game and to maintain or increase hunter opportunity.

Currently, long seasons for most species provide abundant opportunities for upland game hunters. Abundant youth hunts and mentoring opportunities, are important for R3, which stands for Recruitment, Retention, and Reactivation. Recruitment is the acquisition of new hunters into the sport, retention is keeping current hunters actively participating in the sport, and reactivation refers to individuals who hunted at one time, stopped, then started again and are currently members of the hunting public. The R3 effort is being implemented nationwide, as wildlife agencies strive to address the decline of hunters and anglers throughout the United States.

One of the first steps to implementing the R3 effort is identifying reasons why individuals are not currently participating in hunting — either actual or perceived. However, the barriers to participation are generally accepted to be less for upland game than for big game. Retention, or keeping hunters involved and active, is addressed as we consider the input of the public to better address the needs of current hunters as well as beginners. Reactivation oftentimes includes the older generation or any individual who may have stopped hunting, but their enthusiasm could be reignited by the appropriate opportunities (i.e. put-and-take pheasant hunting). Reactivation for some hunter segments usually involves hunts that don’t require rigorous physical activity, and can be done with grandchildren or other young family members. Other hunter segments may be reactivated through broadening knowledge of available hunting opportunities.

Population and Harvest Monitoring

For most upland game species in Utah annual changes in population size and productivity has not been monitored to date, although post-season hunter harvest information has been regularly collected for several decades, with published reports available from 1971. Accordingly, most upland species adaptive harvest management (AHM) strategies are precluded due to a lack of

data. Future management will strive to incorporate additional monitoring of annual population and productivity, although these efforts will be instituted strategically according to DWR priorities and available resources. Efficient and reliable monitoring techniques will be developed based on the best available science. The four primary sources of data for monitoring upland game trends that have been used to date include: 1) harvest data, 2) roadside or other opportunistic surveys, and 3) guzzler surveys.

The DWR does not have an upland-specific license or stamp for all species that allows upland hunters to be directly targeted for harvest survey participation. However, the DWR is able to contact a significant portion of hunting license holders each year to collect data on participation in upland game hunts and harvest. A large sample size and follow-up phone survey to account for non-response bias produces consistent year to year results and reliable trend estimates.

During fall hunts, DWR biologists collect hunter-harvested wings for sage-grouse at access points to sage-grouse hunting areas to identify age and sex of harvested sage-grouse, as well as an index of production (the proportion of juveniles to adults in the harvest sample), and hatch timing. Current wing collection is a small proportion of total harvest, usually limited to greater sage-grouse, and often comes from only a few locations. The DWR has created an objective in this plan to standardize and expand wing collection to other upland species to obtain a more extensive index of annual upland game bird productivity.

The DWR conducts standardized roadside surveys to track trends of lagomorphs (rabbits and hares), specifically, cottontail rabbit and jackrabbit populations, and participates in interagency pellet transects. Lagomorph roadside survey route methods have changed over the years in response to development. As a result, some portions of data collected via roadside surveys may now be of limited value. However, tracking and understanding trends in rabbit and hare populations may aid understanding of population dynamics of many other species. As the surveys continue, trends will be captured more accurately.

Guzzler camera surveys have already been adopted to assess chukar population trends and variations in production, with continued Gambel’s quail long period waterhole counts. The DWR will continue exploring new methods to survey populations and improve annual monitoring (i.e., modeling efforts that consider weather and vegetative indices in relation to annual harvest).

Habitat Improvement and Management

Healthy, functioning habitat is critical for survival and reproduction of upland species — these populations cannot be sustained if suitable habitat is unavailable. Long-term population trends of upland game species are determined by the quality and quantity (i.e. usable space) of available habitat. Annual (short-term) population levels oscillate primarily in response to annual weather patterns and the resulting habitat conditions with changes in survival and reproduction that manifest during the nesting, brood-rearing and/or winter seasons. Long term changes in populations tend to be associated with natural (e.g., wildfire) and human disturbances,

ecological succession, long-term climatic conditions, as well as management that maintains and expands habitat.

Species such as ring-necked pheasant that are associated with agriculture have been affected by the alteration of agricultural practices and urban development, reducing and/or fragmenting the amount of available habitat. Consequently, the longevity of upland game species associated with agriculture may be strongly influenced by private land management, such as farming practices that are conducive to upland game (i.e. leaving nesting cover, water sources, etc.). Additionally, private landowners choosing to participate in federal Farm Bill programs can positively impact upland species by altering grazing regimes, leaving lands undisturbed, and creating water improvements. In Utah, there are over 11.4 million acres of private land (21.1% of the state), much of which is in agricultural production, including livestock grazing on rangelands. Habitat for species that primarily occupy public lands will continue to be enhanced by the DWR through the Watersheds Restoration Initiative, and by working with partner agencies to develop habitat treatments that protect and improve upland game habitat (e.g., nesting and brood-rearing cover, riparian habitat areas, etc.).

The above actions are in line with opinion survey results that suggest pheasant, chukar, forest grouse and turkey are among the species upland game hunters enjoy hunting most. However, forest grouse, jackrabbit, turkey, chukar and cottontail rabbit have been identified by respondents as species easiest to find and access to provide additional hunting opportunities. The hunter opinion survey overwhelmingly showed that ring-necked pheasant was the upland game species that should be given highest management priority, despite limited opportunity, reduced habitat distribution and declining populations.

Maintaining and Increasing Hunter Opportunities

Utah offers a variety of upland game species and has vast amounts of accessible public land. Private land access is less critical to maintaining upland game hunting opportunities relative to many states. However, there are a few species that primarily occur on private lands, notably sharp-tailed grouse, grey partridge, and pheasant. Access programs should be focused on species with limited opportunity on public lands. Consequently, the DWR will prioritize public access to private land geared toward the private land-associated species (above). This includes seeking land acquisitions and conservation easements.

MANAGEMENT ISSUES

The DWR has identified multiple issues that affect upland game populations and management in Utah. These issues can be categorized into the three sections that define the DWR's priorities for this upland game plan:

- Population Maintenance and Harvest Monitoring
- Habitat Improvement and Management
- Maintain and Increase Hunting Opportunity

HARVEST MANAGEMENT

Through the mid-20th century, research on upland game harvest reported results that indicated compensatory harvest mortality for nearly all upland game species. The data supporting these conclusions showed winter bottlenecks or in other words that limited resources could only support a portion of the fall population through the winter. Additionally, high productivity and low annual survival rates in upland game and high juvenile-to-adult ratios in fall populations seemed to support the idea of a “doomed surplus” of individuals within populations that were available for harvest with no negative impact (i.e., additive harvest mortality) to breeding populations.

In the decades following this research and as wildlife professionals were educated with these harvest principles, a general liberalization of bag limits and season lengths occurred for upland game across the U.S. However, as research continued to develop wildlife scientists began to point out problems with some of the past research. In some earlier studies emigration and immigration within the harvested population were not accounted for, and conclusions of compensatory harvest mortality may have been misinterpreted because immigration into the harvested population during the breeding season could have mitigated the loss of animals harvested during the previous hunting season. Additionally, many upland game populations do not experience a winter bottleneck in most years and therefore the underlying mechanism for compensatory harvest mortality was not occurring within those populations. More recent research has shown that harvest impacts on upland game populations can be highly variable, even within the same population or between years. (Connelly et al. 2012). The DWR has been a leader in responding to these issues by implementing some of the first AHM strategies for upland game. In Utah, greater sage-grouse and sharp-tailed grouse harvest is managed with AHM. These more defensible strategies that base harvest on annual changes in population numbers were established to help conserve declining populations while maintaining important harvest opportunities.

Modern research has shown that upland game harvest impacts are variable and likely land somewhere on a gradient between compensatory to additive, rather than strictly one or the other (Dahlgren 2021). Long-term population trends, however, seem to be tightly correlated to the amount of available habitat, while short-term annual variations in populations are likely due to annual climatic conditions. At times, disease outbreaks may also contribute to population fluctuations. Due to data gaps concerning long-term trends in populations and habitat conditions for our upland game species, current harvest regulations for species within the scope of this plan remain similar to those recommended in the 2021-2022 Upland Game and Turkey Guidebook. Some level of population monitoring data is needed for AHM strategies to be implemented. As needs, opportunities, and resources emerge the DWR will begin to assess current harvest strategies and consider where AHM may be appropriate or not within Utah’s upland harvest management.

Currently, the DWR offers relatively liberal seasons and bag limits for chukar, grey partridge, quail, cottontail rabbit, and snowshoe hare. These species generally have relatively high adult mortality and productivity potential, and thus are less vulnerable to overharvest compared to

other upland game species. Forest grouse and ptarmigan have relatively liberal bag limits with shorter seasons to reflect lower annual production, although ruffed grouse can have high productivity (Table 1). Pheasant harvest regulations are less liberal than other species — reflecting declines in wild pheasant populations, high hunting pressure, and their reliance on private land habitat quality and federal farm bill programs, as well as the finite number of pen-reared pheasants that are offered to hunters each year. As mentioned above, greater sage-grouse and Columbian sharp-tailed grouse regulations are further restricted based on their AHM strategy and require a hunter to draw a permit.

Table 1. Current Utah upland game species, season dates and bag limits (2021-2022).

Species	Opening Date	Closing Date	Daily Bag Limit	Possession Limit	Notes
Forest grouse	September 1	December 31	4	12	Single species or in aggregate
White-tailed ptarmigan	September 1	October 31	4	12	Must obtain free permit
Partridge Youth	Saturday prior to partridge general season	Monday prior to partridge general season	5	15	Limits for each species independently
Partridge General	Last Saturday in September	February 15	5	15	Limits for each species independently
Quail Youth*	Last Saturday in October	Following Monday	5	15	Single species or in aggregate
Quail General*	First Saturday in November	December 31	5	15	Single species or in aggregate
Pheasant Youth	Last Saturday in October	First Thursday in November	2	6	
Pheasant General	First Saturday in November	First Sunday in December	2	6	
Cottontail rabbit	September 1	February 28	10	30	Mountain and desert in aggregate
Snowshoe hare	September 1	March 15	5	15	

*The season is closed to hunting scaled quail.

MONITORING

Increasing population monitoring is a high priority to expand Utah's understanding and management of its upland game resources. However, it is recognized that to meet this objective resources need to be prioritized and managed strategically over time. Goals, objectives and strategies are described in the tables of this plan to assuage this issue via research priorities, updated monitoring efforts, and other avenues for increasing baseline knowledge of all upland species in Utah.

Chukar surveys are an example of population monitoring in Utah. From 1996 through 2018, helicopter surveys were utilized as a tool to keep track of relative densities and long-term population trends of chukar in Tooele and Box Elder counties. In 2018, it was determined that the helicopter surveys were a safety hazard and more expensive than alternative survey methods. In 2019, new survey methods began via motion cameras at water sources, including guzzlers. Due to this new method, the metrics that index populations also changed. Rather than coveys flushed, chukars per square mile and total chukars collected by helicopter surveys, the camera survey method measures chicks per adult ratios, average number of adult visits per day and average chick visits per day. Other current surveys include Gambel's quail camera-based water source counts, sage-grouse and sharp-tailed lek counts, and rabbit routes (described above).

Dependable and effective monitoring techniques still need to be developed for most upland game species in Utah. It is difficult to estimate population size or even index population change for most upland game species due to their furtive nature and vast distribution throughout a variety of habitat types. Unlike some big game species that congregate on winter range (i.e., mule deer and elk), most upland game species do not concentrate in areas where they can easily be counted or classified— therefore, research should be done to develop new monitoring techniques and avenues to monitor populations. As these developments have not yet occurred, the DWR has relied on two primary sources of data for monitoring upland game trends: counts/classifications at water sources or lekking/dancing grounds, and data gathered on roadside surveys. The DWR also utilizes harvest data as a source of information (postseason mail and telephone surveys, and age ratios from hunter-harvested wings).

HARVEST SURVEYS

The DWR conducts a postseason upland game harvest survey every year. The survey methods utilized to estimate statewide harvest and hunter participation for upland game have changed over the years — therefore it is difficult to make precise inferences about trends in upland game harvest over time. For a more thorough description of harvest survey methodology, (see Appendix 5). The upland game harvest survey is designed to monitor statewide harvest trends from year to year. The more extensively a species is hunted, the more accurately the survey is able to measure the trend data. To improve the accuracy of the indices for species that receive very little hunting pressure, have low densities, and/or a limited distribution, a unique survey is used. Each species of that type must be hunted using a special permit so that information can

be obtained for survey purposes directly from hunters who successfully received permits. The only species covered by this plan that requires an additional (free) permit is white-tailed ptarmigan.

To estimate harvest data for all active upland game hunters, survey respondent answers are extrapolated based on the portion of license holders invited to take part in the survey and response rates. A random sampling protocol is followed to conduct this survey (accomplished by identifying groups of people who hunt upland game using previous surveys — this can be referenced in the annual reports), and a large enough sample size is compiled (400 or more survey responses meet this criteria) to ensure the results are precise. These methods result in estimated metrics such as total harvest, hunter numbers, and hunter effort. By following the same harvest survey protocol each year trends can be established over time.

WING BARRELS

In recent years wing barrel collection has been used in Utah, albeit somewhat inconsistently by species and area. Only the northeastern region administers wing barrels for forest grouse (the northern, northeastern and southern regions utilize wing barrels for sage-grouse, as sage-grouse hunts are limited to those regions). A DWR biologist places barrels at strategic access points in popular hunting areas to collect hunter-harvested wings each fall. Information can be determined for dusky grouse such as age, sex, hatch date, and peak harvest (weekly barrel checks can determine peak harvest). The age can be determined from ruffed grouse wings, but rump feathers would be necessary to determine sex. The ratio of juveniles to adults in the harvest provides an index to annual productivity. Currently the number of wings collected annually is low and geographically limited precluding representative statewide estimates. To improve the ability to monitor populations, this plan has the objective to expand the wing collection program to obtain more comprehensive indices of forest grouse productivity. If this effort is successful, the sample size of wings will increase and the collection will expand in spatial representation.

ROADSIDE SURVEYS

Standardized roadside surveys have been utilized to obtain indices to lagomorph trends. As DWR biologists conduct field-based work, especially during the breeding and brooding seasons, they opportunistically record upland game sightings to get an idea of whether numbers seem higher or lower from the previous year, whether broods are observed, etc. Although this provides biologists with some information to share with hunters, the data is anecdotal, not standardized, and cannot be used to reliably monitor population trends. The DWR will investigate and implement new methods to monitor populations to improve annual monitoring as needs arise and funding becomes available (i.e., research studies involving telemetry, band recovery, etc.).

STOCKING

Pheasants and other non-endemic birds (i.e. chukar, grey partridge and California quail) were first introduced into Utah during the late 1800s and early 1900s, when farming practices were able to support more habitat and populations and other environmental factors were very different. For example, during that time climatic precipitation regimes were more favorable, habitat was less fragmented with less disturbances, and predator densities (e.g., corvids and raptors) were likely lower. Some have suggested releasing pen-reared birds to bolster populations, however, these birds have extremely low survival rates when released compared to wild birds, and the very small percentage that do survive to breeding season do not readily reproduce. Although pen-reared birds were released in the past, the available evidence suggests that it was the wild-trapped and translocated birds, along with emigration from already established populations, which were responsible for the expansion of these exotic game bird populations. Stocking has proven to be ineffective at maintaining or increasing established breeding populations. Alternatively, the amount of quality habitat tends to influence abundance the most and established wild populations will be maintained, increased, or lowered depending on the amount of suitable habitat available. The most effective use of stocking programs is to provide additional hunting opportunities via put and take programs, such as Utah's chukar and pheasant releases just prior to the hunting seasons. The DWR currently stocks pen-reared pheasants on 60 public areas including Wildlife Management Areas, Waterfowl Management Areas, Walk-In Access properties and other public lands. Utah's pheasant stocking program is intended solely as a "put and take" opportunity, and does not include an objective to maintain or restore wild pheasant populations.

PREDATION

Predation can impact upland game populations, especially when habitat is degraded in quality and/or quantity. However, upland species have evolved with predation and are generally adapted to regular predation pressure. Reproductive rates tend to be high and can offset predation including large clutch or litter sizes, potential for litters per year, and breeding/nesting again if a clutch or litter fails to survive. Increased predation on upland game bird nests, chicks, or adults is typically caused by insufficient habitat. For example, habitat lacking sufficient vegetative cover can result in elevated predation on nests and adults. Habitats modified for human purposes can allow for distribution and abundance of predators to expand by creating artificial sources of food, water, or nesting and denning areas (Bui et al. 2010, Newsome et al. 2014, Coates et al. 2016). Habitat 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). More recent research shows that bounty programs did not increase hunter participation or reduce

coyote populations (Bartel and Brunson 2003). 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. For example, if nesting cover is subpar, habitat restoration or a change in habitat management may be needed for improvement. Moreover, the modification of human-caused food or removal of perching sources (i.e. landfills, feed stores, artificial nesting structures like transmission lines, etc.) that predators utilize can be an effective long-term strategy. Habitat fragmentation and human-created impacts increase across the landscape, predator communities within these altered landscapes will likely respond, and thus have potential to influence upland game populations.

ECONOMIC IMPACT

Surveys have not been conducted to decipher the economic benefit of upland game hunting in Utah in recent years. However, Southwick Associates (2018) reported that the economic impact from upland game birds at a national level is significant. In 2018, an estimated 97,831 hunters spent over six million dollars on expenses relating to upland game bird and small game hunting. Additionally, the 2016 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation gathered data for United States residents that were 16 years-old and older. The survey depicts that 11.5 million hunters spent 26.2 billion dollars in the U.S. in 2016 (USFWS, 2018). Though this data is not broken down by state, hunters clearly have a positive impact on the economy.

HABITAT IMPROVEMENT AND MANAGEMENT

Habitat management is the most crucial aspect of preserving and bolstering upland game populations. Furthermore, respondents to the upland game opinion survey rated habitat loss due to land development as the most important factor affecting upland game populations. Upland game species' populations are impacted long-term by the quality and quantity of available habitat. Short-term population densities vary in response to weather conditions during the nesting, brood-rearing and/or winter periods, while population abundance will remain relatively stable unless suitable habitats are modified.

Utah is a geographically diverse state; therefore, fluctuations in weather conditions at relatively small scales can result in fluctuating production rates. Most of Utah's upland game species thrive in diverse, natural habitats, ranging from coniferous forests and aspen stands to shrub-steppe rangelands, and rocky outcroppings. These habitats are subject to natural disturbances (wildfire), and human disturbances (recreation, timber harvest, etc.). The balance of disturbances and habitat succession creates a mosaic variation of habitat suitability for each species.

Past agricultural practices have benefited ring-necked pheasant, grey partridge, California quail, and cottontail rabbits by supplying food sources such as waste grain and an amalgamate of habitat types conducive to game birds. Small grain or hay fields surrounded by weeds, pasturelands, fence lines, irrigation ditch banks, rocky outcroppings, and crop stubble provided the necessary mixture of food and cover for breeding, brood rearing, and wintering upland game. As agricultural practices shifted and individual agriculture operations moved towards monocultures, the diversity of habitat types that benefited upland game birds (especially pheasants) has reduced over time (Joselyn and Warnock 1964, Dahlgren 1988, Warner 1988, Hiller et al. 2009).

Moreover, previously unused areas and road ditches have been cultivated; fence rows and farmstead windbreaks were discarded; and more grasslands were grazed. Ditch banks and edges of fields that were seasonally flooded disappeared due to conversion to pivot irrigation rather than flood irrigation. The spraying of herbicide to control noxious weeds, the burning of crop stubble and ditch banks, and general removal of vegetation (outside of farmed areas) further reduced habitat quality for brood-rearing and wintering (Rodgers 1999). Upland game populations experienced a coinciding rapid decline in those areas of Utah where modernized, industrial agriculture is most prevalent. In addition to revised agricultural practices, urbanization, population growth, and the subsequent loss and fragmentation of habitats have also negatively affected upland game populations.

As available habitat has deteriorated, upland game habitat management has concentrated on restoring the curtailing land cover types beneficial to upland game species (Taylor et al. 2018). Therefore, the future of some upland game species, especially those associated with agriculture, will depend on private land management and federal Farm Bill programs. In Utah, there are 11,456,608 acres of private land out of 54,315,461 total land acres (21.1% private), most of which is rangeland or in agricultural production.

Conservation efforts by ranchers, farmers and landowners have been supported by a sequence of federal laws collectively established as the Farm Bill. Implemented by Congress in 1985, the Farm Bill is a landowner-friendly tool that has been integral in successful conservation of habitat on private lands. Farm Bill conservation programs fund easements to safeguard agricultural lands, execute efforts to protect vulnerable species on working lands, and provide technical advisors to consult with landowners about enhancing the efficacy of their operations while conserving natural resources.

While individual programs and amounts funded have varied, Congress continues to champion conservation on private lands. The Farm Bill Agricultural Act of 2014, dedicated about 28 billion dollars through 2018, for conservation in four main areas: the Conservation Reserve Program, partnerships, conservation easements, and working lands programs. Currently, the Agriculture Improvement Act of 2018 is in place and will continue through 2023.

Table 2. Current Farm Bill programs benefiting upland game species in Utah. Here is a summary of current Farm Bill programs in Utah:

Name	Description	Acres Enrolled (3-year average)
EQIP - Environmental Quality Incentives Program	Provides financial and technical assistance to agricultural producers to address natural resource concerns	320,000
CRP - Conservation Reserve Program	Helps voluntary farmers and ranchers improve water quality, prevent soil erosion and reduce the loss of wildlife habitat on private lands.	137,021.99
CSP - Conservation Stewardship Program	Helps agricultural producers maintain and improve their existing conservation systems and adopt additional conservation activities to address priority resources concerns.	620,000
AMA - Agricultural Management Assistance Program	Helps agricultural producers manage financial risk through diversification, marketing or natural resource conservation practices.	300
ACEP - Agricultural Conservation Easement Program	Helps landowners, land trusts, and other entities protect, restore, and enhance wetlands, grasslands, and working farms and ranches through conservation easements.	1,723.52
RCPP - Regional Conservation Partnership Program	Promotes coordination between NRCS and its partners to deliver conservation assistance to producers and landowners.	12,000

(M. Phillippi, personal communication, April 6, 2022)

In 1992, in response to dwindling pheasant populations, the DWR initiated an additional fee for upland hunters, known as the “upland game habitat stamp” — this facilitated funding for upland game habitat. Funding for the program was derived from the sale of an upland game stamp (five dollars per hunter), which was authorized by the Utah legislature. This stamp was required of all pheasant, partridge, quail sage-grouse, dusky grouse, ruffed grouse, mourning dove, cottontail rabbit, and snowshoe hare hunters. From 1992 to 1995, it was required for hunters 16 years old and older, but in 1996, the stamp was required for hunters 14 years old and older. The name of the stamp also changed in 1996 to the “wildlife habitat authorization.” In 1997, the cost of the authorization increased to $5.25. In 2001, the stamp requirement was removed and was funded through a direct budget line item from the sale of hunting licenses.

During the 1995 general session, the Utah Legislature created the Wildlife Habitat Account. This account provides dedicated funds from hunting and fishing license sales that must be used to enhance, preserve, manage, acquire and protect fish and wildlife habitat. The funds may also be used to improve public access to fishing and hunting areas. The Wildlife Habitat Account generates about $2.8 million each year for habitat projects. The Habitat Council makes recommendations on how to distribute the funds in the Wildlife Habitat Account. Council members include four individuals from the DWR and four citizens who represent big game, waterfowl, upland game and sport fishing interests. Any organization or individual can submit habitat project proposals, which are reviewed and prioritized by regional teams. Then, the Habitat Council completes a final review and makes its recommendations. According to Utah Code, each year up to $230,000 or 12% of the annual deposits to the account, whichever amount is greater, shall be allocated to upland game projects. The DWR director authorizes projects and the funds to implement them. In 2021, the Habitat Council provided $555,125 in funds towards upland game.

Over time the DWR has developed a program for additional funding for habitat-related projects through Utah's Watershed Restoration Initiative (WRI). WRI is a partnership based program designed to improve high priority watersheds throughout the state. WRI is sponsored by the Utah Partners for Conservation and Development and is in its 15th year. The Watershed Program focuses on improving 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. Five regional teams elect their own leaders, establish focus areas, review, score and rank project proposals using a comprehensive project prioritization score sheet, and assist their members in implementing projects. These projects have the ability to benefit upland game, even if another species is the primary objective of the project. For example, a project for increasing bitterbrush, sagebrush, and forbs on a wildlife management area benefits mule deer and elk, but also positively impacts pheasant and quail.

Table 3. Utah Watershed Restoration Initiative projects benefiting upland game species listed by number of acres by year. Multiple species may be benefitting species for a single project, resulting in yearly totals for all projects being lower than if all individual species were totaled for each year.

	Black-tailed Jack-rabbit	CA Quail	Chukar	Desert Cotton-tail	Dusky Grouse	Gambel's quail	Grey Partridge	Mt. Cotton-tail	Ring-necked Pheasant	Ruffed Grouse	Scaled Quail	Snowshoe Hare	White-tailed Jack-rabbit	Total
2005	0	0	0	0		0	0	0	0	0	0	0	0	1,592
2006	0	10	249	269	0	0	0	0	0	0	0	0	0	44,552
2007	0	88	0	267	0	0	0	0	265	0	0	0	0	54,001
2008	7,663	23	8,810	7,345	737	0	0	0	8,638	737	0	0	0	262,884
2009	2,238	3	1,494	575	540	540	0	0	454	0	0	0	0	64,105
2010	5,409	6	2,698	2,360	0	332	0	0	2,676	489	0	501	0	46,872
2011	0	69	0	0	134	2,801	0	0	343	134	0	0	0	75,865
2012	0	50	50	0	6,125	1,025	0	0	767	9,918	0	1,079	0	51,947
2013	2	313	287	2	21	195	0	2	1,651	590	0	0	2	94,150
2014	721	318	1,092	0	2,808	0	0	721	806	2,808	0	283	721	63,077
2015	150	50	2,257	0	31	0	1	150	1,171	31	0	740	0	59,249
2016	4,503	158	281	4,833	86	200	0	0	900	86	0	0	0	80,124
2017	1,892	315	6,227	2,023	3,303	0	3,587	1,202	606	3,950	0	1,202	0	100,831
2018	3,360	128	3,857	436	27,307	0	344	6,226	753	4,322	0	2,987	0	152,891
2019	9,337	1,848	1,656	2,659	468	3,711	86	5,420	6,411	0	0	0	4,875	126,989
2020	2,114	3,090	19,449	2,232	129	1,503	532	1,940	750	235	0	0	0	173,584
2021	0	3,840	5,606	4,524	149	2,019	422	0	1,542	149	0	29	0	57,782
2022	0	0	0	1,508	0	0	0	0	0	0	0	0	0	7,689

ARTIFICIAL WATER SOURCES

Water developments, also known as guzzlers, have been installed throughout Utah and other western states to expand the range and density of upland game birds, with most efforts targeted at chukar partridge. Utah has 1,226 guzzlers in the DWR database, 511 guzzlers installed with upland game as the target species, with an additional 669 big game guzzlers that in many cases are also used by upland species. Chukar partridge is the primary target species for the vast majority of upland game guzzlers with 435 listed with chukar as a primary species, and an additional 67 with chukar listed as a secondary species. Gambel's quail is listed on 77 guzzlers as a primarily benefiting species. There are 11 guzzlers listed as primarily benefiting turkey. There are an additional 14 listed as benefiting sage-grouse, however free water needs of sage-grouse is minimal, and may be of primary benefit by generating mesic areas. For additional detail on guzzlers for chukar partridge see page 42.

Associated with a better understanding of wildlife water developments, an additional management plan for upland game water developments will be developed and attached to this plan as Appendix 3 to address:

1. Needed density of water developments for chukar partridge
2. Areas where water development is complete
3. Areas in which additional water developments are needed
4. Potential unintended consequences of water developments including predator subsidies
5. Effectiveness and need for water developments targeted at species other than chukar partridge

HUNTER OPPORTUNITY

The upland game opinion survey conducted in 2022 demonstrated that 77.1% of upland game hunters spend more time hunting on public lands, 17% spend more time hunting on private lands, and six percent spend their time hunting on both private and public lands. The survey further indicated that 28% of Utah hunters were dissatisfied with the availability of public land access, and 55% were dissatisfied with the availability of private land access. An indirect effect of limited access is crowding. Crowding was the most important factor to limiting the enjoyment of a hunt. For hunters that indicated dissatisfaction with their hunt, access and crowding were often mentioned. To address this demand, the DWR will continue to explore avenues in which access to and through private lands and landlocked public lands can be expanded. To offer more public access and hunting opportunity, Utah provides the following resources:

- The Walk-In Access program; designed to secure access to private land or through landlocked public land. As of 2022, approximately 65,880 acres of land have been enrolled in the WIA program statewide.
- Bureau of Land Management (BLM) and Forest Service (USFS) properties are multiple use lands. Their missions are to sustain the health, diversity and productivity of public lands to meet the needs of present and future generations.
- The SITLA Access Payment between DWR and the State of Utah School and Institutional Trust Lands Administration (SITLA) keeps 3.4 million acres of trust lands open to hunters and anglers and those interested in viewing wildlife and runs through 2032.
- The DWR purchases Wildlife Management Areas and Waterfowl Management Areas through land acquisitions, and actively seeks opportunities to attain conservation easements, which benefit wildlife through the preservation of habitat. These properties also provide hunting, trapping and angling opportunities to the public.

HUNTER OPINION SURVEY

To gain perspective of upland game hunters in Utah and guide management decisions for the Plan, the DWR conducted an opinion survey of licensed hunters in 2022. Though previous surveys were conducted in 1991 and 2006, the DWR found value in gathering up-to-date information from upland hunters.

Previous surveys were conducted as mail surveys, however the 2022 survey was conducted digitally. The sampling frame consisted of two sample populations: a convenience sample on social media and a random sample of individuals that indicated they hunt upland game on a previously administered hunter harvest survey.

The convenience sample used a ‘boosted’ social media advertisement. Using key words we targeted upland game hunters in Utah. This boosted post reached 17,040 people and had 533 clicks which resulted in 838 survey responses. Because there were more survey responses than clicks on the survey link we suspect people shared the link. In addition to the social media post, the survey was directly shared with upland game groups which added 65 more responses

to this group. The random sample portion was obtained by emailing 1,386 people. For this portion we sent the survey directly to their email, and only one response was possible per email. The emails generated 573 responses.

In total, 1,477 people completed the survey – 97% were Utah residents and 3% were non-residents – and 91% of respondents reported hunting upland game in Utah in the last three years. Results from this survey have provided guidance in development of this upland game management plan. The average age of the respondents was 44.4 years old. Ninety-four percent of respondents were male and 83% indicated they hunted or applied to hunt deer or elk in the last three years.

To better understand the perspectives of upland game hunters, a subset of respondents were identified as “upland game enthusiasts” if they spent 10 or more days hunting upland game in the past year. There were 931 (63%) hunters in this category. In addition to the enthusiast classification, we also identified hunters that were new (hunted 0-3 years), seasoned (hunted for 4-25 years, or veteran hunters (hunted for over 25 years). We received responses from 56 (4%) new hunters, 437 (35%) seasoned hunters and 773 (61%) veteran hunters.

There were 118 people who took this upland game hunting survey that indicated they did not hunt upland game in the last three years. When asked what would make them more likely to participate in the future, over 52% said knowledge of where to hunt followed next by having closer hunting opportunities (32%).

Even though pheasant numbers have declined in Utah since peak harvest, wild pheasants were the most commonly listed when asked what species you prefer to hunt (63% of hunters picked pheasants as one of the most enjoyable species to hunt). Pheasants were followed by chukar partridge (46%) and ruffed grouse (38%). When combined, 44% of hunters selected forest grouse – dusky and ruffed – as a most enjoyable upland game hunting opportunity. American crow, band-tailed pigeon, white-winged dove and white-tailed ptarmigan were least often picked as an enjoyable species (less than 3% of hunters). When hunters were asked to rate the overall quality of their hunting experience over the last three years, 28% of them reported a good or extremely good experience hunting for upland game.

When seeking just the new hunters’ experience, 41% reported having a good or extremely good experience. For any experience rated as poor (44% of all responses), hunters were asked to identify what factors contributed to this rating. The top three factors identified were lack of game animals (71% of responses), access issues (22% of responses) and too many other hunters (20% of responses). Many of the responses specifically mentioned pheasants. This is not surprising, given 53% of pheasant hunters rated the quality of their hunting experience as poor.

Over 77% of hunters identified public land as the property type they hunt the most in Utah. Only 28% of hunters reported being dissatisfied with the public access. When asked about factors affecting game populations, the most important was ‘loss of upland game habitat due to land development’ with 90% saying it was important to extremely important. Of the factors asked

about, excessive harvest levels was the least important with only 50% saying it was important to extremely important. Respondents were asked how important various factors were to their enjoyment of upland game hunting. The most important factors were to be outdoors and enjoying nature while hunting and not losing wounded birds. The least important factor was to harvest at least one game animal on most of your trips. When asked about what is limiting the enjoyment of the hunt, crowding and low numbers of game were rated highest and finding time for hunting was rated lowest.

There was a series of questions asked about management priorities. While all strategies were rated high, maintaining and enhancing habitats was rated higher than monitoring game population trends.

Upland Game Species Accounts

In Utah, upland game species data is collected each year through harvest surveys (see Appendix 4). This information is available on the DWR website (https://wildlife.utah.gov/upland-reports.html). Harvest trends, success rates, weather conditions, license sales, and other data are summarized in these reports. The harvest information, history of each species in Utah, their physical description, habitat requirements, and behavior are summarized in the following species-specific sections.

FOREST GROUSE

The term “forest grouse” refers to ruffed and dusky grouse. Although they are grouped under the “forest grouse” umbrella due to occurrence in forested habitats, their life histories and habitat needs vary significantly. Ruffed grouse occur in northern and central Utah, mainly in the Cache, Wasatch and Uinta Mountains, and Utah provides the most southern distribution of the species rangewide. Dusky grouse are more widely distributed throughout the state, including distinct pockets of habitat unconnected to the Wasatch Range.

Ruffed Grouse

Ruffed grouse are endemic to the United States, including Alaska and Canada. They occur in a variety of forest habitats throughout Utah, but are generally found in areas with deciduous trees and shrubs, such as aspen, willow and berry-producing mountain shrubs (Figure 2). Ruffed grouse are frequently associated with riparian areas, or moist, brushy areas such as north-facing slopes and draws.

Ruffed grouse are medium-sized birds with feathered legs, a rounded tail, and a short crest on the top of their heads. The male’s feathers are generally a mottled, brownish-gray color to aid them in camouflage. Their tails have broad, muted bands of color; usually gray, with narrow bands of black lining the gray edges. Each side of their neck has long patches of feathers that can be flexed into a ruff, and fleshy bright orange combs around the eyes are often displayed

when the ruff is erect. Females look similar, but the dark band on the tail is usually more blotchy, and their tails, ruffs and eye combs are smaller (BNA, 2000).

Ruffed grouse emit a variety of sounds, though vocal noises are not loud due to their simplistic vocal organs. They are known for the male's unique mating drumming display during the mating season. By spreading and rotating their wings forward and backward quickly, air pressure creates a drumming sound. Drumming can occur at any time of the year, though peak drumming is displayed in April or May. Females will build nests within a week after breeding, and they will breed again if they lose their first nest. Hens will incubate the clutch for approximately 24 days, and the chicks are able to leave the nest within 24 hours of hatching. Females will stay with their brood until late August to mid-September (BNA, 2000).

Potential threats to ruffed grouse habitat in Utah include fire suppression policies that impede aspen regeneration, other forest management practices that precludes early successional habitat availability such as degradation of dense understory vegetation, and long-term drought impacts. Timber harvest, fire, and other management practices that support dense, early successional habitats are known to benefit ruffed grouse throughout their range. Practices that degrade riparian areas resulting in erosion or loss of water retention or management that promotes older sparser forests is likely detrimental.

Dusky Grouse

Dusky grouse, also known as blue grouse, are native to western North America, and present throughout forested portions of Utah (Figure 3). Dusky grouse move between habitat types throughout the year and exhibit reverse migration moving up in elevation and wintering in high elevation conifer stands. During the summer months, dusky grouse are found in areas with mixed tree cover, dense understory vegetation, and they regularly used more open shrub habitats adjacent to tree cover, especially when brooding young. As summer transitions to fall, they begin their elevational migration to conifer areas, which in Utah are most often dominated by Douglas-fir (*Pseudotsuga menziesii*). Their winter diet shifts to nearly 100% conifer needles until the spring breeding season.

Dusky grouse are stocky birds with a long tail and long, rounded wings, and feathered legs and feet. Males and females are distinct in color; males are dark shades of blue and gray, while female feathers are dark to medium brown in color, and females are smaller than males. Males also have a patch of bare skin on the neck that is exposed as part of their mating display. Additionally, dusky grouse males are the only grouse with eye combs that change color during mating season — they are yellow for most of the year, but turn bright red during courtship (BNA, 1992).

The dusky grouse breeding season occurs in late April to early May. Males sing and use "flutter-flights" to entice females during the breeding season. Their courtship display begins with spreading their feathers, then wooting and rushing if a female is present, and then head bobbing. Only the female incubates the nest, which lasts approximately 26 days. Chicks can move within the nest shortly after hatching, and can move out of the nest in short distances

within the first day of hatching. Hens leave their broods or brood breakup occurs in late summer and early fall. (BNA, 1992)

Rugged mountain habitat has helped protect the dusky grouse; however, habitat loss and degradation due to pine beetle infestation, loss of understory and fire suppression can be threats to localized populations. Although impacts of forest management practices on dusky grouse are poorly understood, removal of conifers at higher elevations could potentially have a negative impact on winter ranges.

Population Status/Monitoring

Currently, forest grouse are not monitored extensively in Utah. The Northeastern Region has facilitated some wing collection via wing barrels in 2020 and 2021. There were eight locations in 2020 and ten locations in 2021. This effort will be continued, and the compiled data will be available in the annual harvest report on the DWR website.

Harvest

Research on ruffed grouse has shown that hunting mortality can be partially additive, with immigration sustaining populations (Small et al. 1991). Research suggests the harvest of dusky grouse may only have minor influence on populations (Mussehl 1960, Zwickel 1982, Hoffman 1985), and seasonal migrations may reduce hunting effects (Zwickel 1992). Dusky grouse are relatively long-lived and have lower reproductive rates compared to many upland bird species, which makes them more vulnerable to overharvest. However, recent studies in Utah suggest that current levels of hunting pressure likely have little to zero probability of negatively impacting dusky grouse populations (Farnsworth 2020).

Both forest grouse species share season dates with aggregate bag and possession limits. From the 2010-2011 to 2020-2021 seasons, an average of 9,918 hunters spent 47,515 days to harvest 37,145 forest grouse annually. Number of birds harvested/day by hunters averaged 0.8, and hunters averaged 3.7 birds/season. The number of forest grouse hunters and birds harvested per day has remained stable with some year to year variation over the last 10 years, however the number of hunter days shows a generally increasing trend with a concomitant increase in overall harvest. In the 2020-2021 season, approximately 50% of the forest grouse harvest was made up of ruffed grouse; 47% of the harvest is dusky grouse, with 3% unknown (Figure 1).

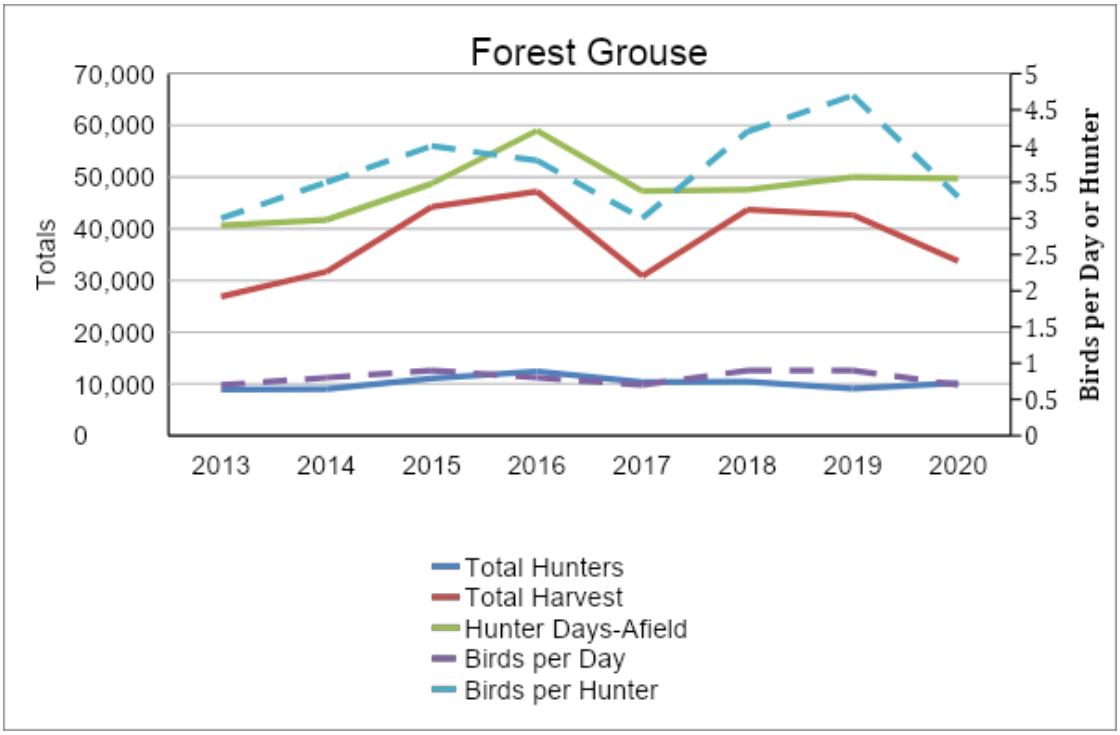

Figure 1. Forest grouse harvest and hunter participation from 2011 to 2020.

Threats

- Lack of knowledge of population changes and status, habitat needs, the effect of habitat management, seasonal movements, and vital rates.
- Declining forest health leading to large stand die offs due to beetle kill and other factors related to lack of stand diversity.
- Poor habitat quality resulting from fire suppression and other factors

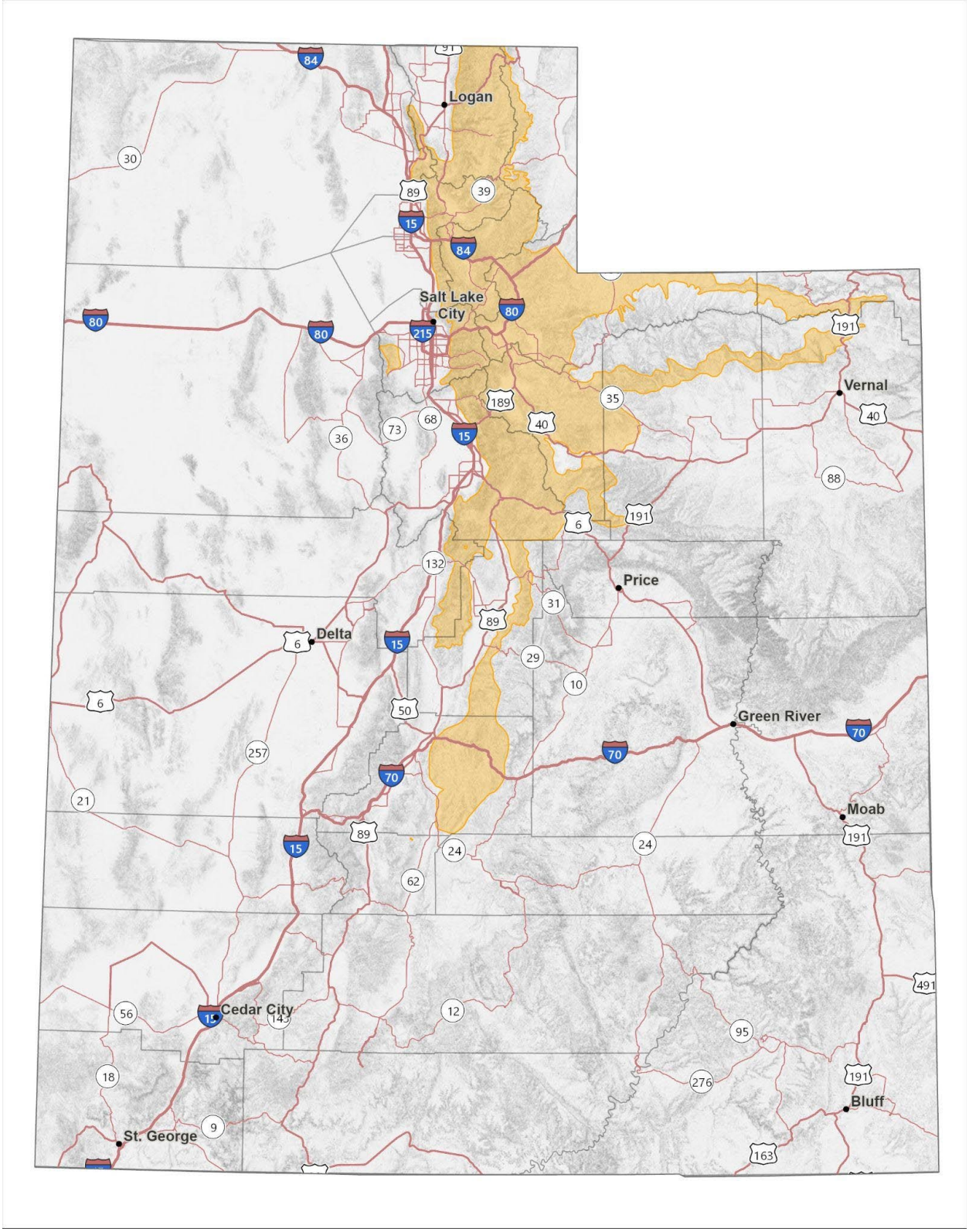

Figure 2. Occupied ruffed grouse habitat in Utah.

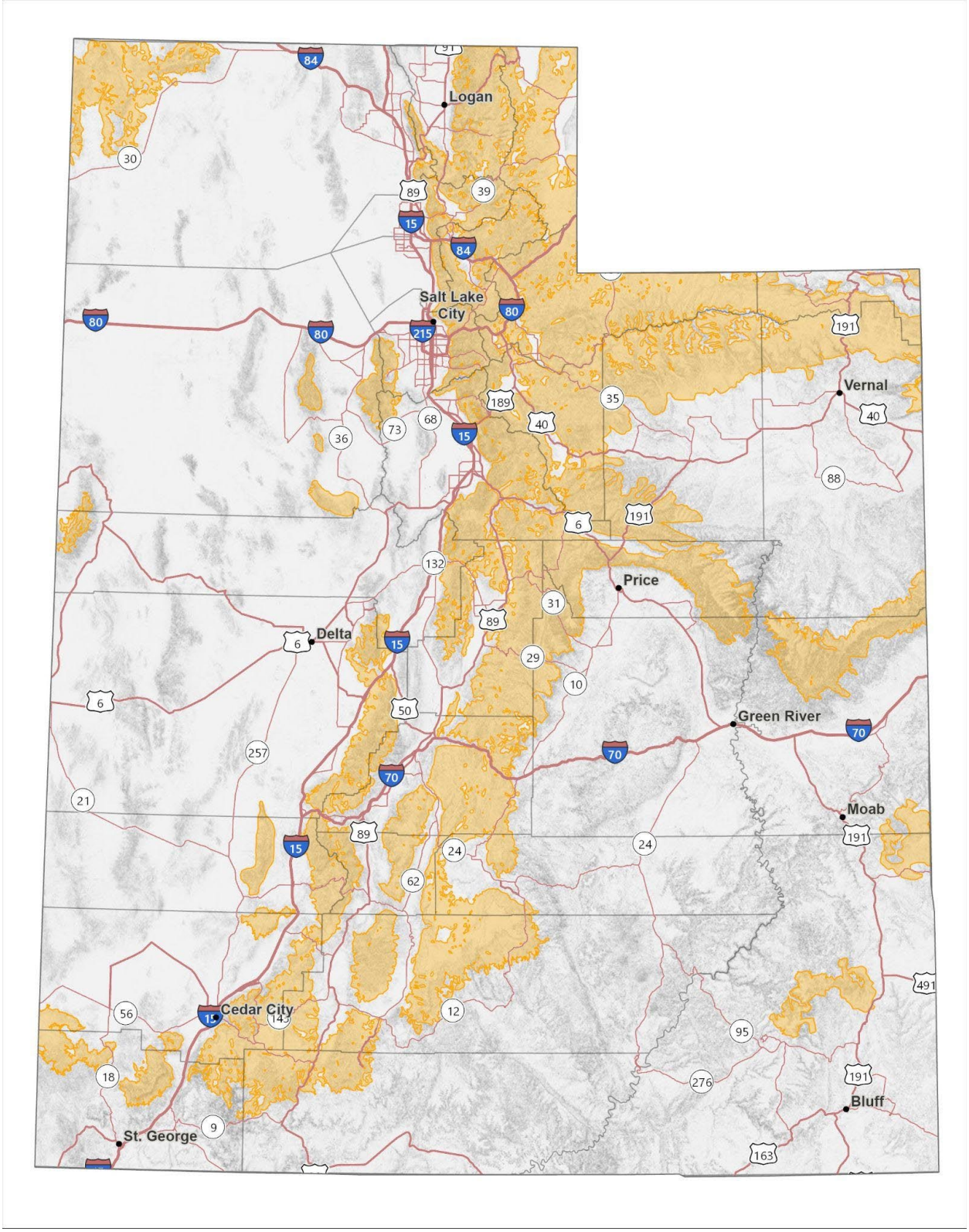

Figure 3. Occupied dusky grouse habitat in Utah.

WHITE-TAILED PTARMIGAN

The white-tailed ptarmigan (*Lagopus leucurus*) is also known as the snow quail, and is the smallest grouse (the tribe, *Tetraonini)*, weighing around one pound. This is an alpine species which permanently resides in the high mountains above timberline, and is associated with willowy drainages (Figure 6.1). They are pure white in the winter, and change in the summer to having a mottled-brown head, breast and back with white wings, abdomen and tail. Their seasonally alternating color is one of the ptarmigan's most unique adaptations, which allows for camouflage with lichens and boulders in the alpine habitats. Additionally, while all grouse have feathered tarsus, or shins, as well as feathered legs and nostrils to keep them warm in the winter months, the white-tailed ptarmigan has feathered toes. This not only assists in heat conservation, but these feathers are utilized as snowshoes for the grouse; keeping them above the surface of the snow as they walk (Robinson, 2021).

The species was introduced into the Uinta Mountains in 1976 from source populations native to Colorado. They spread from release locations and currently occupy most of the high elevation basins above timberline throughout the Uinta range. One of the most critical threats to ptarmigan is warming climate conditions and increased drought. Since ptarmigan depend on alpine habitats above tree line throughout their rangewide distribution and are not adapted for other warmer environments, some concerns include reduced winter snow cover, precipitation patterns shifting to summer rains leading to decreases in food availability, changes in plant communities, and the tree line gradually moving upward (Hoffman 2006).

Population Status/Monitoring

Currently, ptarmigan populations are not monitored. The DWR does collect information through harvest surveys sent to hunters who obtain a permit to hunt ptarmigan. However, Utah has made plans to explore other types of surveys to gain more information, such as call-back surveys to record number of ptarmigan responses to an electronic call, as well as wing collection surveys. Ptarmigan are also listed as a research priority in the Plan.

Ptarmigan are of increasing conservation concern due to the above threats — in 2010, southern white-tailed ptarmigan were petitioned for listing under the Endangered Species Act. However the USFWS determined in 2020 that the listing was not warranted, and the introduced Utah population or introduced populations were not considered in the listing decision (USFWS 2020c).

The USFWS concluded that predation, mining and related poisoning due to toxic concentrations of trace metals, hunting, recreation, livestock and native ungulate grazing did not pose a threat to extirpation of the species. The USFWS did find that changes in climate is a threat to local populations due to changes in minimum and maximum temperatures; changes in snow quantity, quality, extent, and duration; shifts in plant phenology; advancement of tree line, and expansion of willow into alpine areas; and changes in the amount and timing of seasonal precipitation. However, USFWS also concluded that range-wide there is adequate resiliency, redundancy and

representation to survive environmental changes (USFWS, 2020b). The Utah population is limited in distribution, and lacks connectivity to other populations that may be critical for maintaining genetic diversity and adaptation to variation in its environment, catastrophes, and novel biological and physical changes in its environment (USFWS, 2020b). Understanding the impacts of environmental shifts or other catastrophic events to ptarmigan in Utah is imperative for managing this species in the state.

Harvest

Hoffman (2006) describes ptarmigan as behaviorally susceptible to over-harvest as they display high site fidelity in fall habitats, despite disturbance. In recent years, Utah's ptarmigan hunting statistics have shown more than a doubling in hunter effort, while harvest per hunter day has remained below long-term averages. Early opening dates and relatively short reproductive windows may lead to increased harvest of chicks and brood hens. As a result, Utah has moved opening day to September 1st, as delaying the opener by a week may increase the probability of brood breakup before hunting begins and disperse hunting pressure amongst other upland species with similar opening dates. However, due to the remote areas that ptarmigan inhabit in Utah (Uinta Mountains), over-harvest throughout Utah's population is unlikely, but may occur in well-known or easily accessed areas. Further evaluation of season dates, bag limits, and area-specific harvest is warranted.

From 2010 to 2020, on average 102 hunters spent 303 days to harvest 66 ptarmigan annually. Hunters averaged 0.23 birds harvested/day and 0.68 birds/season, much lower harvest relative to other upland game species. Despite low harvest success, the number of ptarmigan hunters has been steadily increasing over the last three years, with an accompanying increase in hunter days. However, birds harvested per day have been trending downward overall with a slight increase in the 2020 season (Figure 6).

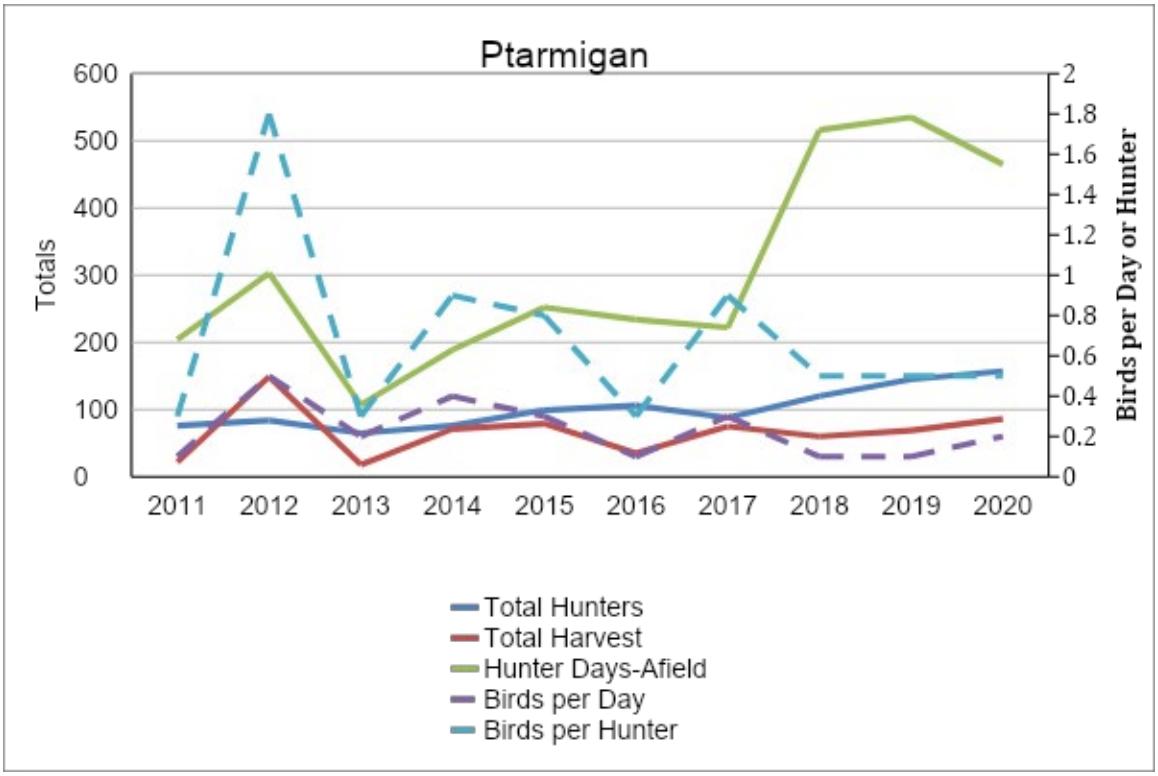

Figure 6. White-tailed ptarmigan harvest and hunter participation from 2011 to 2020.

Threats

- Decreased suitable habitat due to changes in temperature, precipitation, and other environmental factors related to a changing climate.
- Deficient fitness due to limited genetic diversity.
- Limited range and population size in Utah, possibly leading to low population resiliency.

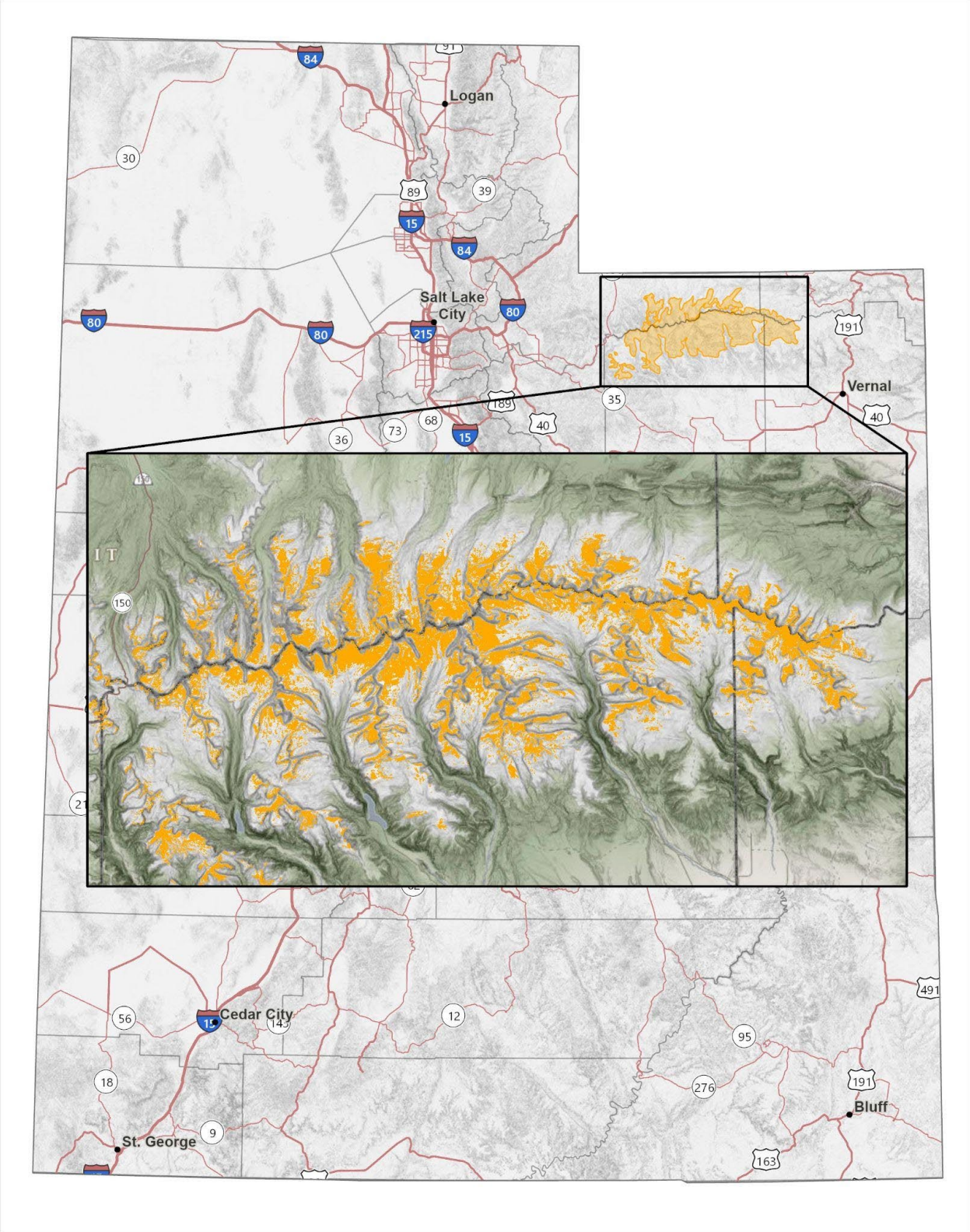

Figure 6.1. Occupied white-tailed ptarmigan habitat in Utah.

QUAIL

Three species of quail occur in Utah – California, Gambel's and scaled quail. Gambel's quail are native to Utah, and though there is debate about whether scaled quail are native to Utah, the northern range limit of scaled quail may reach extreme southern Utah. Scaled quail populations are very limited, so they are not currently hunted in Utah. California quail were translocated into Utah and have become the most abundant comprising most of the state's quail harvest. For all quail species, abundance is influenced by both habitat availability and quality, as well as timing and patterns of precipitation. Like other upland species, weather conditions (especially during the winter) can impact quail significantly, though quail are highly adapted to take advantage of periodic increases in environmental conditions. Variation in success of nesting and brood-rearing may cause wide oscillation in annual quail populations — long-term trends in abundance are generally determined by the quality of habitat and how the abundance or lack of habitat impacts survival. Multiple factors influence habitat conditions, including farming practices (e.g., removing vegetation from pivot corners and fence-lines, use of pesticides, and crop conversion from small grains), urbanization, and fire. However, winter snow conditions in Utah can result in the reduction of food sources, thereby constraining California quail distribution to lower elevations or southern regions of the state (Leopold 1977). Thick shrub vegetation is a crucial aspect of quail habitat for all seasons, including winter for thermal cover and escaping predation, and in the summer for shade to mitigate extreme heat (Leopold 1977). Quail are predominantly herbivorous — selecting green vegetation, seeds, flowers, and fruits — though insects are a staple for adult females and young chicks (Gutiérrez and Delehanty 1999, Pope et al. 2002, Zornes and Bishop 2009).

CALIFORNIA QUAIL

California quail were introduced into Utah as early as 1896 and are native to California and Oregon. They have been established in the northern portions of the state, and tend to be most abundant along the Wasatch Front, often in urban environments, and Uinta Basin but can be found in many areas throughout the state (Figure 7.1). The DWR translocates California quail from urban areas to more remote locations with suitable habitat; this is done to augment existing or to establish new populations.

California quail males have black and white faces, have black, curved feathers that protrude from their crown (which is brown), their bodies are gray in color but have intricate wavy patterns of black and white on their necks, and black scaling on the bottom portions of their bodies. Females look similar, but are more brown, have less scaling, and don't have the brown patch on their crown. Of these characteristics, the "topknot" on their crown is the most distinguishing (BNA, 1999).

Males and females exhibit mating displays; oftentimes this is presented as courtship feeding, or tidbitting, where one bird will pick up a food item, sometimes while simultaneously emitting a food-related call, and will wait for the intended receiving bird to react. This is referred to as the tidbitting display. In addition, researchers have observed a backroll, which is usually performed

by a male, though females have also displayed this behavior. The backroll is exhibited by one bird holding its back to the intended recipient, wagging its tail and shaking its feathers. Males begin mating-related vocalizations in early spring, usually peaking in May. Eggs are laid in May through early June in the Great Basin, and incubation lasts approximately 23 days. Chicks follow their parents when they are born, and are completely independent after three months (BNA, 1999).

California quail rely heavily on brushy cover for protection against predation. In some places within their range in Utah, clustered rocky formations and tall thick sagebrush also offer escape cover. They are also dependent on reliable water sources and a mosaic of open feeding areas (Zornes and Bishop 2009). Access to water and succulent vegetation is critical in the summer and fall when quail chicks are young, before the onset of winter precipitation (Leopold 1977). They feed on broad-leafed plants and seeds primarily (Leopold 1977, Zornes and Bishop 2009), though insects are also consumed depending on time of year, availability and location (Leopold 1977, Blakely et al. 1988). Quail chicks, like all gallinaceous young, are heavily dependent on invertebrates for the first few weeks of life (Leopold 1977).

Land use practices can drastically impact California quail densities. Proper land management practices, sufficient water sources, farming practices that provide cover, fire and logging management, plenty of brushy escape cover, and disking to foment the growth of preferred vegetation and to offer open habitat have been shown to bolster California quail abundance (Zornes and Bishop 2009). The range of California quail in Utah likely increased in conjunction with land-use practices such as feedlots for livestock, flood-irrigated farms, and the increase in weedy annual plants (Leopold 1977) — however, as irrigation tactics have transitioned from flood irrigation to center-pivot irrigation and farming practices have become “cleaner” with less waste and leftover fallow areas, populations of California quail have declined. California quail populations continue to thrive in urbanized areas where they are often fed during the winter.

Population Status/Monitoring

The UDWR does not currently conduct any population surveys or monitoring for California quail, other than the estimated harvest reported in the annual hunter harvest survey. In an attempt to increase occupied range and hunting opportunity, California quail are trapped and translocated in the winter months from urban areas and released in areas to initiate or augment current California quail populations. Information is documented each season and includes source sites, release sites, number of quail translocated and dates of releases. Biologists opportunistically visit release areas in an attempt to observe translocated quail. Future translocations should follow guidelines described in Appendix 2: Upland Game Translocations to better document and increase the probability of success of translocations.

Harvest

The impacts of harvest on quail populations has not been studied to a large extent, specifically species other than bobwhite quail. Fluctuations in quail numbers tend to influence harvest numbers both statewide and regionally, as laws allow liberal bag and possession limits (Guthery

et al. 2004). Therefore, minor adjustments in regulations may be biologically inconsequential (Peterson 2001, Guthery et al. 2004). One study concluded that quail harvest can be forecasted by hunters, hunter days both statewide and regionally, and quail abundance — however, some regional harvest was predicted solely by hunter effort (Tomeček et al. 2015). Since season dates and bag limits are set statewide, small or isolated populations can be at risk for overharvest (Tomeček et al. 2015).

Studies conducted on small populations that experience high harvest have found that harvest can be additive to overwinter mortality, and can significantly decrease spring breeding densities (Williams et al. 2004, Rolland et al. 2010). Harvest occurring later in the season is probably more additive than harvesting in the early part of the season (Pollock et al. 1989, Peterson 2001). In general, when quail are lower in abundance, resident hunters seem to self-regulate harvest by reducing the amount of hunter effort (Peterson and Perez 2000, Williams and Applegate 2012). However, studies have suggested that non-resident hunters do not necessarily self-regulate harvest based on quail population size (Williams and Applegate 2012). In Utah, quail harvest primarily consists of California quail, but also includes Gambel's quail. The survey results from 1971 to present are available in the Upland Game Annual Report at wildlife.utah.gov/upland-reports.

From 2010 to 2020, an average of 1,235 hunters spent 6,265 days to harvest 5,799 California quail annually. Number of birds harvested/day by hunters averaged 0.9, and hunters averaged 4.4 birds per season. The number of California quail hunters has remained fairly stable, along with harvest over the last decade.

The number of California quail hunters and harvest has generally declined since the inception of the survey in the 60's, though there have been some significant spikes in harvest of California quail in 1996 and 2006. Survey results from the 2020 season indicate a large increase in total harvest, birds per day, days afield, and birds per hunter. However, reports from hunters and biologists afield question the accuracy of this 2020 spike in harvest, which may be a result of small sample size and random variation in sampling and reporting (Figure 7).

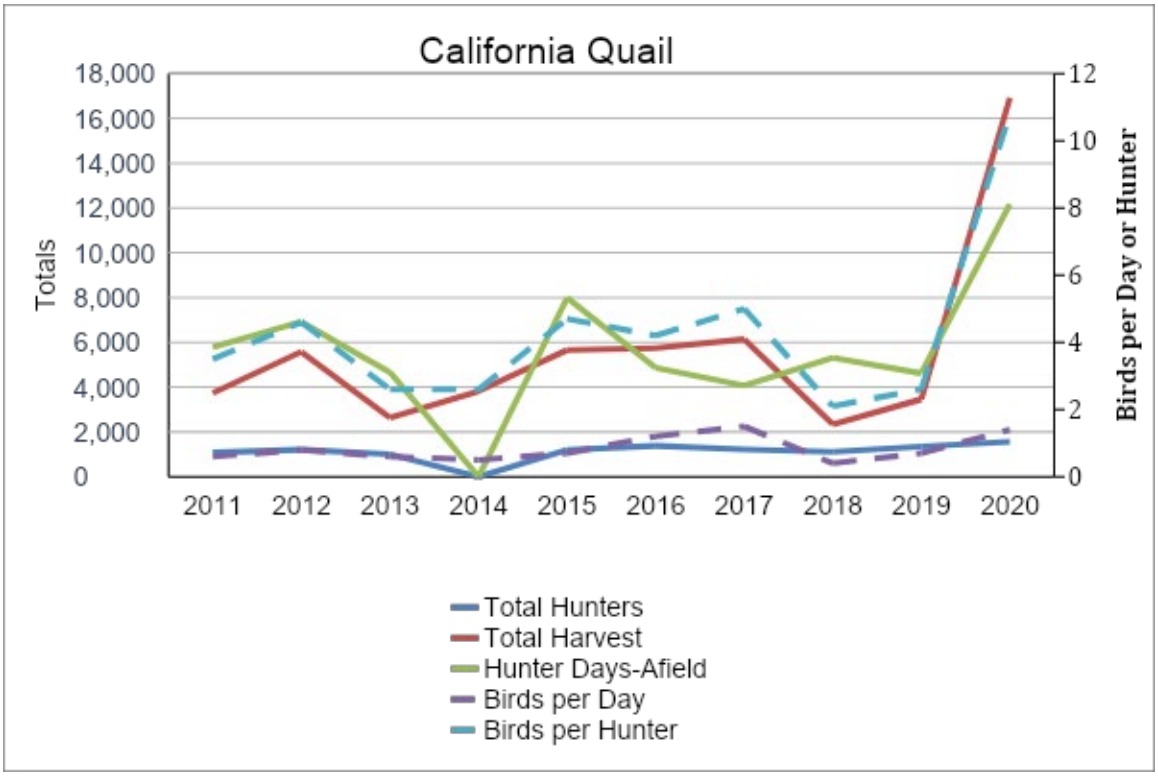

Figure 7. California quail harvest and hunter participation from 2011 to 2020.

Threats

- Loss in habitat from development, poor riparian habitat quality, and fire/invasives
- Changes in modern agricultural practices (more pivots, less ditch rows)
- Predation from avian predators and mesopredators such as raccoons, foxes, feral cats and skunks

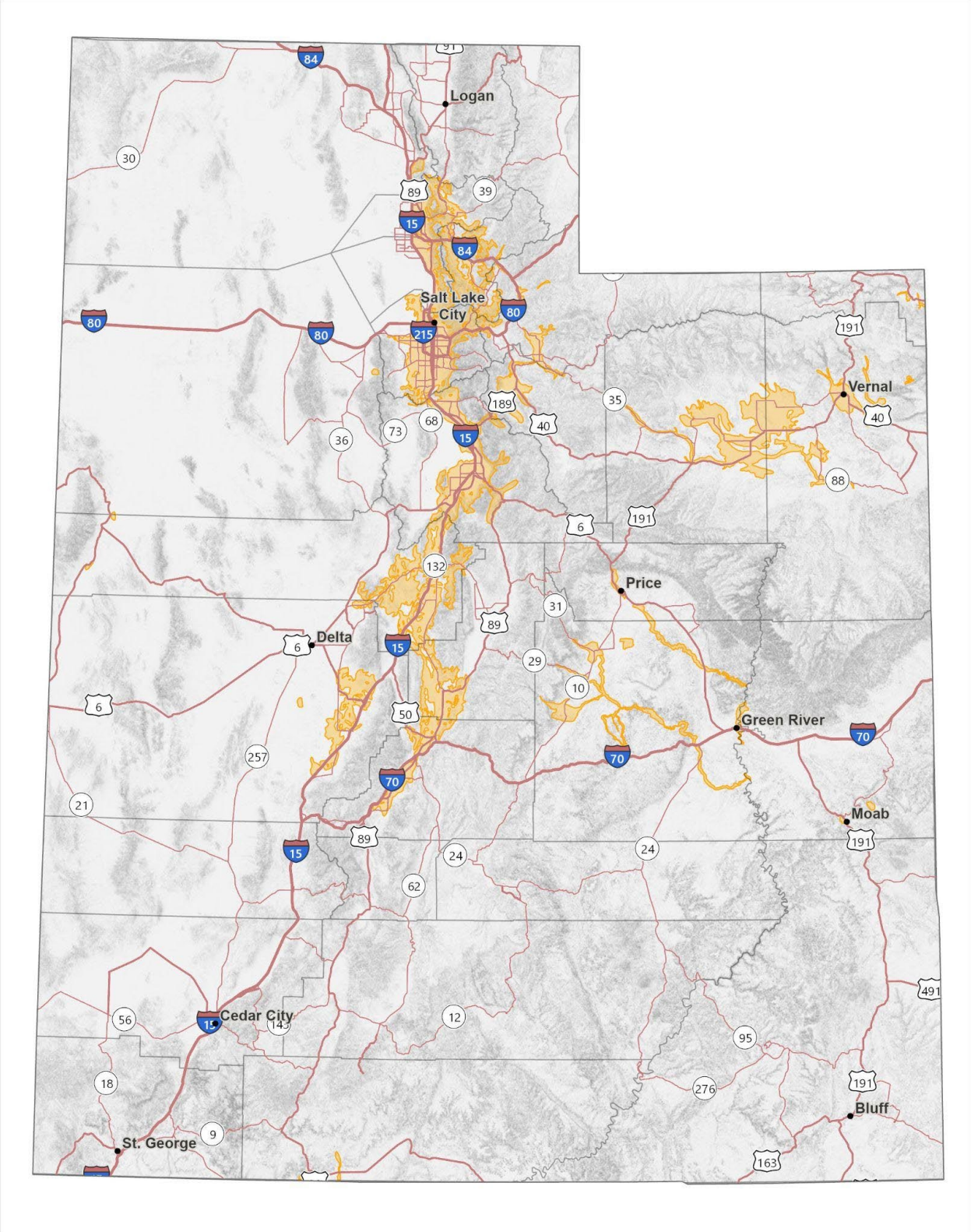

Figure 7.1. Occupied California quail habitat in Utah.

GAMBEL'S QUAIL

Gambel's quail are native to Utah — they mainly inhabit areas in southwestern Utah (Figure 8.1), and are believed to have inhabited riparian areas along the Colorado River to Moab, prior to the creation of the Glen Canyon Dam and the winter of 1949 (UT DWR 1988). Small remnant populations still occur along some of the Colorado River drainage, likely the result of translocations.

Gambel's quail resemble California quail; males have black and white faces, a cinnamon colored crown, white streaks through dark brown on the sides of their wings and legs, and the black curved plumes, or topknot protruding from the crown. Adult females resemble the males, but are more drab in color, with no distinguishing crown color, and have shorter, smaller topknots (BNA, 1998).

Gambel's quail also perform similar mating displays as California quail. Gambel's quail males will display the tidbitting behavior, offering food to a female. If the female approaches, the male will assume in a courtship stance, extending his legs, fanning his tail and lifting it, while flaring his flank feathers, with his beak near the ground. The male will also vocalize while head bobbing, causing the plume or topknot to vibrate. However, the females seem to prefer males due to tidbitting behavior, and the size of the topknot seems less important to female selection (BNA, 1998).

Gambel's quail habitat consists of brushy foothills and drainages in their native range. Gambel's quail abundance is highly correlated with nesting success, winter precipitation, and the vegetation produced during wet years (Swank and Gallizioli 1954, Zornes and Bishop 2009). Females may forgo reproduction after cold or dry winters (MacGregor and Inlay 1951). Chick survival is higher during wet years with abundant vegetation, and lower in dry years (Sowls 1960). As such, mortality and survival rates are chiefly impacted by annual variation in precipitation — Gambel's quail are less abundant during drought, and more abundant during years with higher precipitation, especially during the winter (Zornes and Bishop 2009). Gambel's quail adults, chicks, and eggs are susceptible to a myriad of predators, both mammalian and avian (Zornes and Bishop 2009). Gambel's quail regularly visit sources of open water during the spring and summer months, however, Skidmore (2016) found that excluding Gambel's quail from water sources did not impact their survival rates, but resulted in significantly larger home ranges. Impacts of free water on reproductive success are still needed.

Population Status/Monitoring

Surveys completed for Gambel's quail are found in our Upland Game Annual Report at wildlife.utah.gov/upland-reports. These waterhole trend counts are conducted annually in July, as observations of adults and young are recorded to gather brood and production data.

Harvest

From 2010 to 2020, an average of 628 hunters spent 2,064 days to harvest 2,178 Gambel's Quail annually. Number of birds harvested per day by hunters averaged 1.1 and hunters averaged 3.6 birds per season. The number of Gambel's quail hunters has remained fairly stable in the last decade, however there was a spike in hunters following a population high in 2016.

The number of Gambel's quail hunters and harvest has remained relatively stable overall since records of harvest began in the 1960's, however, annual harvest can vary significantly year to year (Figure 8).

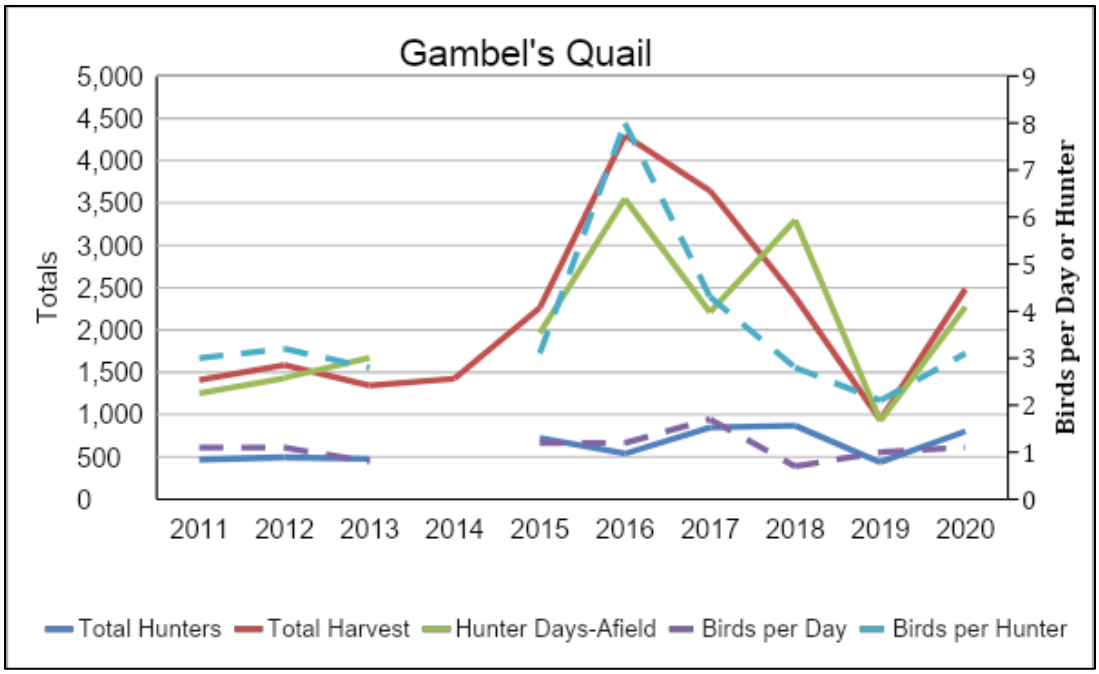

Figure 8. Gambel's quail harvest and hunter participation from 2011 to 2020.

Threats

- Habitat loss from fire and associated exotic annual grasses
- Changes in habitat caused by invasive plant species encroachment
- Overall habitat degradation impacting amount of cover, feed, and water

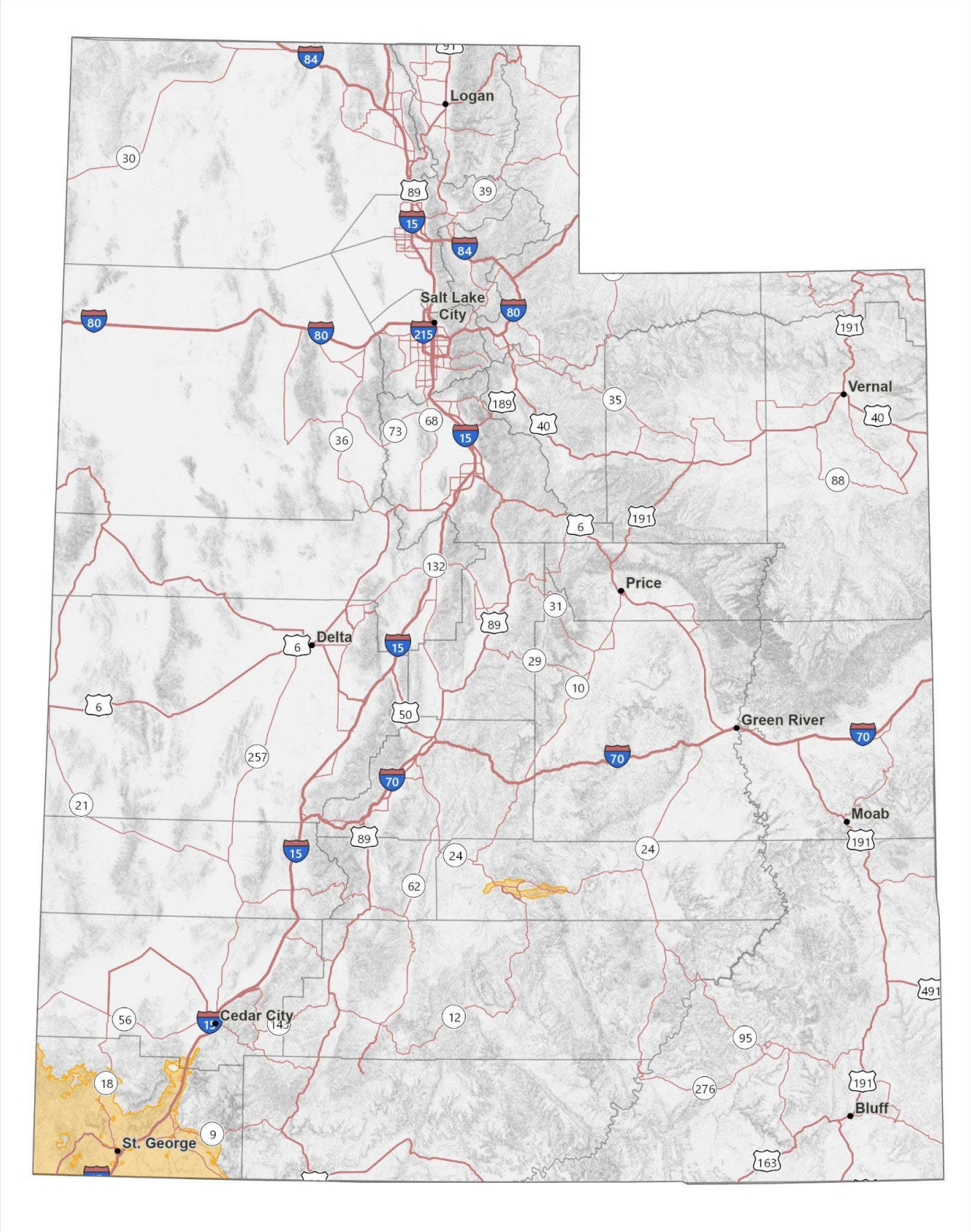

Figure 8.1. Occupied Gambel's quail habitat in Utah

SCALED QUAIL

Scaled quail, *Callipepla squamata,* are only occasionally seen in southeastern Utah, in the Four Corners area. Southern Utah is just north of this species' range. The most distinguishing feature is the scaled breast, neck and nape, and the lack of a plume on the head (as seen in other Utah quail species). The head is topped with a white-tipped crest, and there isn't a distinctive sexual dimorphism. The quail is native to the southwest desert grasslands, primarily the Chihuahuan Desert grasslands and the southern Great Plains (Schemnitz 1994).

Two areas in extreme southeastern Utah have had scaled quail sightings; Montezuma Canyon and McCracken Mesa. The likely source of these quail is New Mexico, as they experienced a high production year in 2006, which likely caused the expansion of birds in Utah, as they have been observed since 2007. Occupied range may have naturally expanded into this area of Utah due to the trending warmer temperatures, however some models do not predict suitable conditions extending into Utah (Schneider and Root 2002, Tanner et al. 2017).
In addition an effort was made from 2013 to 2015 to establish a population with 40 scaled quail released in 2013, 200 in 2014, and 205 in 2015.

Scaled quail are gregarious, inhabiting cactus and sagebrush flats, areas with shrubs (provides roosting cover, as they roost on the ground), grasslands with loafing cover such as wolfberry and mesquite. They feed primarily on forbs, shrubs and grain, while leaves and insects are consumed seasonally (Schemnitz 1994). Pairing generally begins in mid-March after males have spent time calling to attract females and defend their territories. They have a long nesting season — second broods are rare, despite commonly renesting. Like other quail species, they are short-lived, and produce a large average brood size (Schemnitz 1994).In the fall, scaled quail form coveys of 20 to 40 birds that persist through the winter . They depend on their camouflage to disguise themselves and their eggs from predation from coyotes, skunks, snakes, hawks and magpies (Project Upland, 2019).

Population Status/Monitoring

Sightings of scaled quail are opportunistically reported to the DWR. Employees report sighting to wildlife managers if they encounter scaled quail. Currently, the DWR has placed trail cameras on water sources where quail may concentrate near the McCracken Mesa. The images obtained from this exercise will better inform the DWR of scaled quail distribution and facilitate future surveys.

Harvest

While this species is not hunted in Utah currently, the DWR plans to continue translocations, improve habitat, and monitor distribution of birds to establish a viable population that may be hunted in the southeastern region. This objective is outlined in the regional priorities on page starting on page 68.

Threats

- Drought; limiting the water resources and forage production leading to degraded habitat quality

CHUKAR PARTRIDGE

Chukar partridge (*Alectoris chukar*) is a non-native, naturalized species that was initially introduced to North America in the late 1800's from their native range in east Asia, the Middle East and Southern Europe (Christensen 1970). Release efforts in Utah began in 1936 with chukar grown at the Springville Game Farm, however, introduction efforts were not successful until wild trapped chukar were translocated from Turkey in 1951 (Mitchell 2003). Current releases of pen-reared game birds are small-scale; intended for put-and-take hunting, with annual survival for pen-raised birds close to zero.

Topography plays a major role in chukar partridge habitat. These birds prefer steep, rocky slopes to provide cover and means of escape from predators. Rock and brush cover is important to chukar, as they will generally avoid water sources when the overall shrub cover is less than 11% (Larson et al. 2007). Roost sites are generally found mid-slope; associated with rock outcrops and talus that can provide cover (Knetter et al 2017).

Chukar partridge thrive in a semi-arid to arid climate, and can succeed in habitats degraded by fire and annual grasses, however, monocultures of invasive grasses can have negative effects on populations (Lindbloom et al. 2004, Knetter et al 2017). Chukar are a ground foraging species whose diet is primarily made up of green grass and forb shoots when available, and grass seeds otherwise. Insects are also an important source of protein, especially for young birds (Christensen 1996). Free water is consistently visited during hot dry periods, with water needs of juvenile birds higher with brood coveys often visiting a water source twice a day, in the morning and evening.

Chukar have been shown to consume a significant amount of lead shot — a study in Utah showed that 10.8% of harvested chukar had elevated lead levels in their liver and/or a lead pellet found in their gizzard (Walter and Reese 2003, Weiner et al. 2009, Bingham et al 2015). In a feeding trial Bingham (2011) found that a single #6 lead pellet could induce morbidity and mortality in captive chukar with the percent of population affected varying by age and diet. In the wild, even sub-lethal effects have the potential to indirectly lead to death or increase probability of predation.

Self-sustaining populations of chukar partridge currently occupy the vast majority of suitable habitat in Utah (Figure 9). However, areas remain of unoccupied suitable habitat that were newly created as a result of fire or other landscape changes, were never occupied, or no longer occupied where the population was lost. New habitat is created as the result of wildfire. However, habitat is also lost as the result of fire when healthy range loses it shrub component or becomes a monoculture of invasive annual grass (namely cheat grass and medusa head).

Population Status/Monitoring

Chukar populations vary significantly from year to year based on environmental conditions influencing survival and reproductive success. Populations generally remain at a stable baseline, with occasional and often dramatic spikes in population in response to consecutive years of high reproductive success. The population within Utah is generally stable over the long-term but can vary significantly annually.

From 1963 to 1996 the DWR conducted brood counts throughout the state. In 1996, the brood counts were replaced with a helicopter survey on the Cedar Mountains, with a second survey on the Bovine Mountains added in 2009. The DWR discontinued helicopter surveys in 2019 due to increasing cost, limited geographic scope, limited production data, and safety risks of low level flight in rough terrain. Helicopter surveys were replaced with automated game cameras placed on natural water sources or water developments to document year-to-year variation in brood production and overall population. The DWR will continue to assess this method in the future.

Harvest

The DWR conducts annual hunter harvest surveys to determine hunter participation and harvest rate. Harvest surveys act as an index of population with hunter harvest, hunter participation and harvest rate highly correlated with wild populations. From 2011 to 2020, an average of 6,590 hunters spent 34,159 days to harvest 30,478 chukars annually. Number of birds harvested/day by hunters averaged 0.9, and hunters averaged 4.6 birds/season. The number of chukar hunters fluctuates year to year, generally following the peaks and lows in chukar populations (Figure 9).

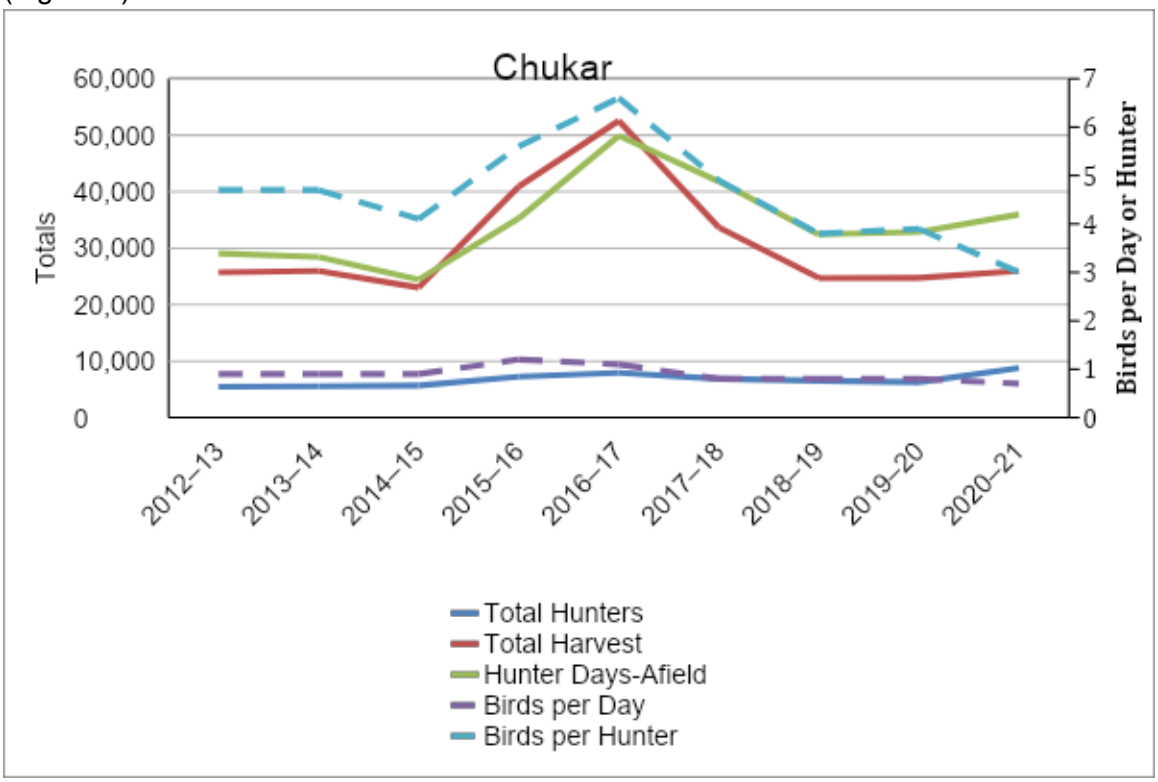

Figure 9. Chukar harvest and hunter participation from 2011 to 2020.

Threats

- Reduction in brood habitat quantity and quality
- Invasive annual grasses causing increased fire frequency and lack of habitat diversity

Translocations

Chukar have been introduced to the vast majority of suitable habitats within Utah, however, existing areas of suitable habitat remain unoccupied, or have become unoccupied due to changes in habitat conditions. When unoccupied habitat is available and has been evaluated and found suitable, the DWR may translocate wild caught chukar to the location. See Appendix 2: Translocations for detail on habitat evaluation and best practices.

Water Developments

Water developments have been a major component of chukar partridge management in Utah, with water developments being installed as early as 1967 (Shaw 1971). Since that time a considerable number of water developments have been installed throughout the state with 511 upland game-targeted water developments with 424 documented as having chukar as the target species. Anecdotally, higher densities of chukar can be found in areas with higher densities of water development. However, relatively little research has been done on the effectiveness of water developments in expanding population size and range. Early research drew contradicting conclusions that water developments both contributed to establishment and expansion of chukar populations (Messerli 1971) and did not improve productivity, survival or availability to hunters (Shaw 1971). Larson et al. 2010 showed spatial association with chukar and water sources, but also showed that high moisture content of feed in some areas may make free water unnecessary under such conditions. More recent research suggests that site level habitat is most influential in successful establishment of populations (Moulton et al 2015), including minimum shrub cover of at least 10% (Larson 2007). Research to date has not clearly demonstrated efficacy or fully explored potential negative impacts on other species (Broyles 1995, Larson 2012). Moving forward, a better understanding of water availability, water used by chukar, weather influencing water needs, constraints on use of available free water, and proper installation for target and non-target species is critical to retain support of all stakeholders (Larson et al. 2012).

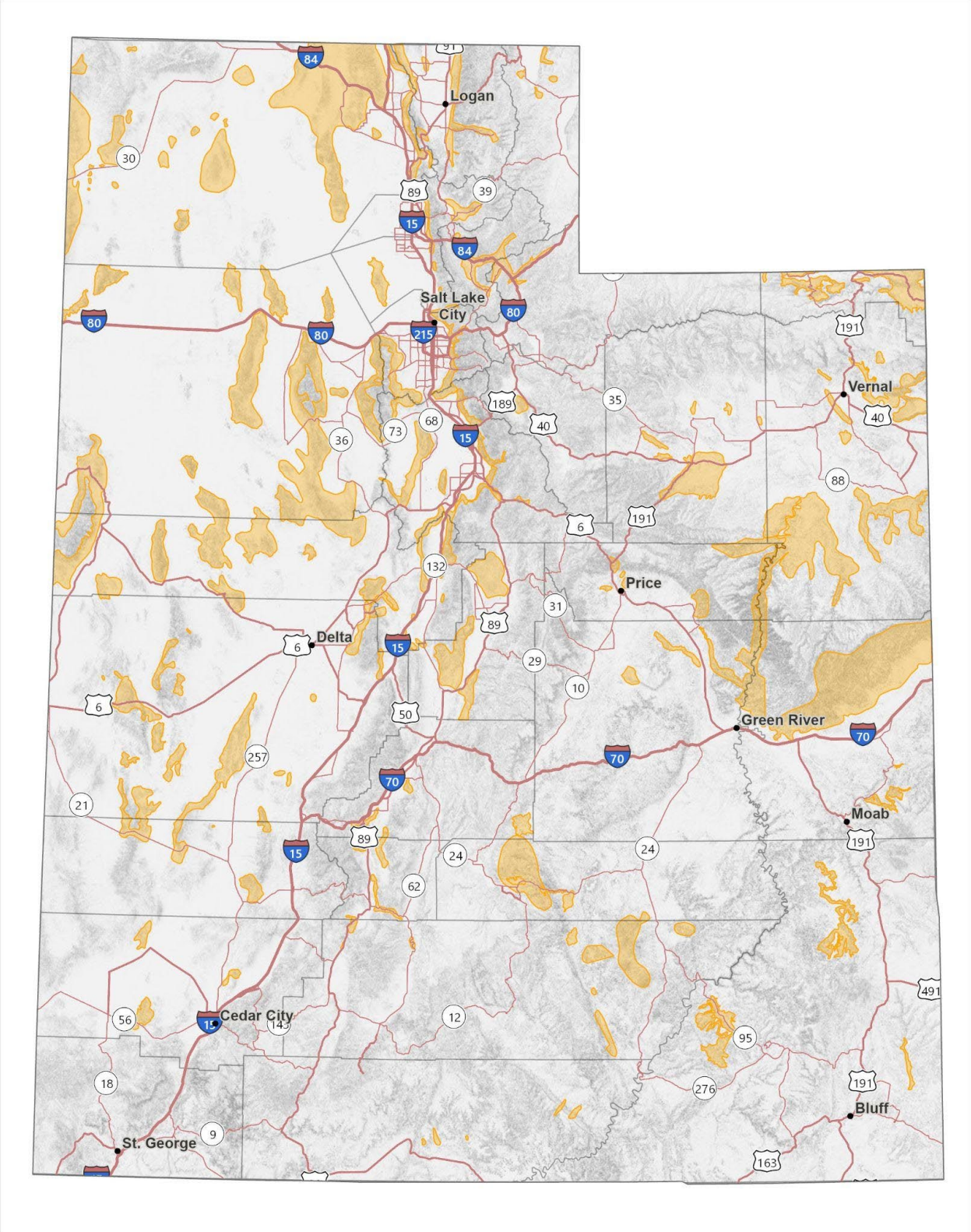

Figure 9.1 Occupied chukar habitat in Utah.

GREY (HUNGARIAN) PARTRIDGE

The grey partridge (*Perdix perdix*) is also known as the Hungarian partridge or Huns. This is a medium-sized bird from Europe, introduced to multiple areas in North America. A translocation of 120 grey partridge on November 11, 1911 is most likely the first introduction to Utah, though translocation efforts were decidedly unsuccessful by 1940. The current populations in Utah are likely from the Snake River drainage of Idaho and from Nevada, as reported sightings in Utah in areas that border Idaho and Nevada began being documented in 1948 (Porter, 1955). Across the species range worldwide grey partridge tend to be tied to northern latitudes with Utah as part of the southernmost distribution of the species in North America (Figure 10.1). Even when the birds were first documented in Utah, low densities were reported (Porter, 1955).

Grey partridge are a gray to brown color, with short wings and tails. Adults have unique shades or orange or tan on the face and throat, which is typically brighter in males (Carroll, 1993). Grey partridge are typically found in areas with grasslands or mixed sagebrush and grass, and often adjacent to cultivated lands. They can occupy open rangeland with no associated agriculture, and concentrate in areas with a combination of cereal grains and herbaceous cover such as weedy vegetation, grasses, and fields of hay which provide desired habitat (Carroll 1993). The water requirements of grey partridge are relatively unknown in the western United States (Knetter et al. 2017). While Yeatter (1934) ascertained grey partridge attained plenty of water from dew and succulent foods in the Great Lakes region, Porter (1955) maintained that grey partridge in western Utah necessitated free water in dry desert areas.

These birds are monogamous and pairs typically occur between separate coveys, however, intra-covey pairings do form between previously paired adults (Jenkins 1961, Weigand 1977). A formal mating display has not been documented; though both sexes show aggressive behavior. Females select males that chase other females away from the area, and males that show vigilance are the first to become paired (Carroll, 1993). The incubation period is 21–26 days (McCabe and Hawkins 1946).

Grey partridge will continue renesting efforts if a nest is damaged before hatching, and may create up to four nests in a single season. However, each subsequent nest contains fewer eggs (Jenkins 1961, Birkan et al. 1990). Annual precipitation and predation are critical factors of annual mortality; generally during nesting, brood-rearing, and winter (Potts 1980, Carroll et al. 1990, Church and Porter 1990, Carroll 1993). Grey partridge are vulnerable to predation from mammals and predatory birds. However, Porter (1955) indicates that mowing vegetation as a result of farming operations was the greatest factor of the initial decline of the species.

Population Status/Monitoring

There are not currently any population surveys done on grey partridge, though annual hunter harvest surveys are collected. Grey partridge are listed in the priorities indicated under the goal

to expand base knowledge within this plan. Huns are also mentioned in the research priorities, as well as the northern and central region goals.

Harvest

Published research by Vander Zouwen (1990) and Carroll (1992) addresses impacts of harvest on grey partridge populations in North America. They suggest hunting is likely not additive for most populations because of little interest or hunting pressure. In Utah, these birds are only available in the northern region of the state, primarily on private lands.

From 2011 to 2020, an average of 812 hunters spent 4,287 days to harvest 2,547 grey partridge annually. Number of birds harvested/day by hunters averaged 0.6, and hunters averaged 3.0 birds/season. The number of grey partridge hunters has decreased over the long term, but has remained relatively stable for the last decade. Harvest has fluctuated significantly, with large spikes in harvested numbers in 1999-2000, 2005-06, and 2016-17.

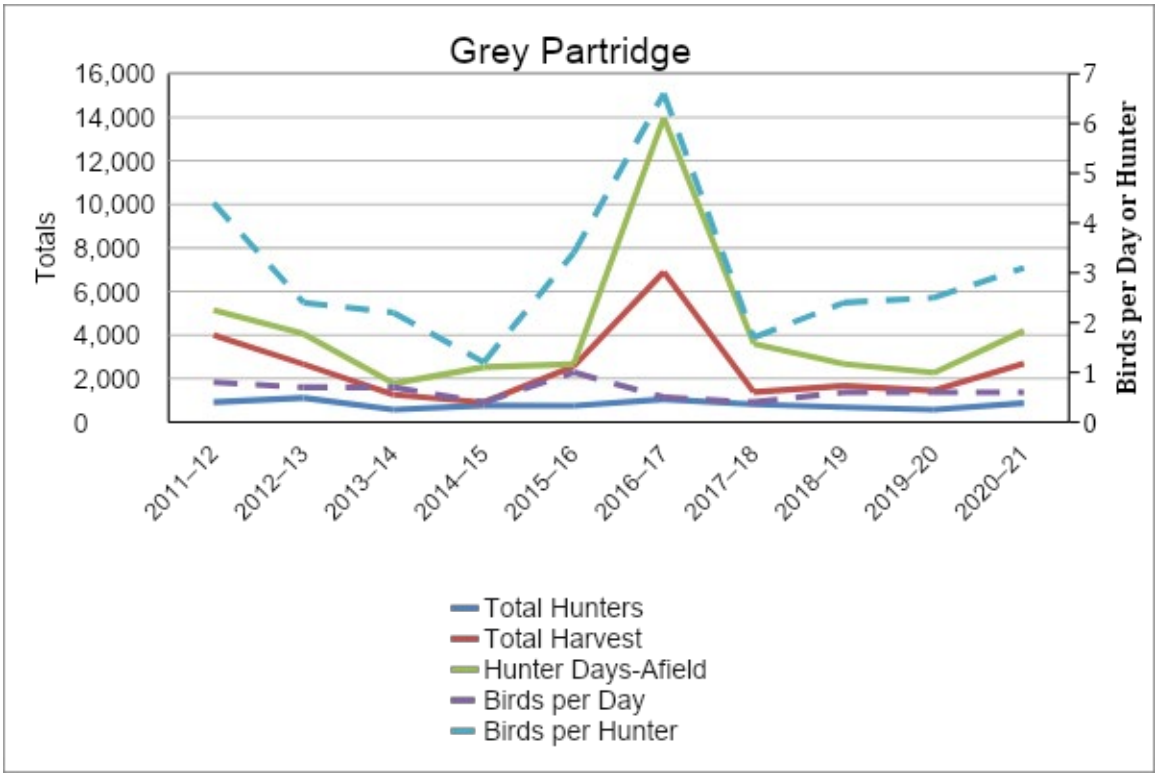

Figure 10. Grey partridge harvest and hunter participation from 2011 to 2020.

Threats

- Lack of information regarding population dynamics and habitat associations
- Changes in climate may lead to northward range shifts. With Utah on the Southern extent of range, higher temperatures and less water availability may create negative impacts.
- Predation by mesopredators and avian predators

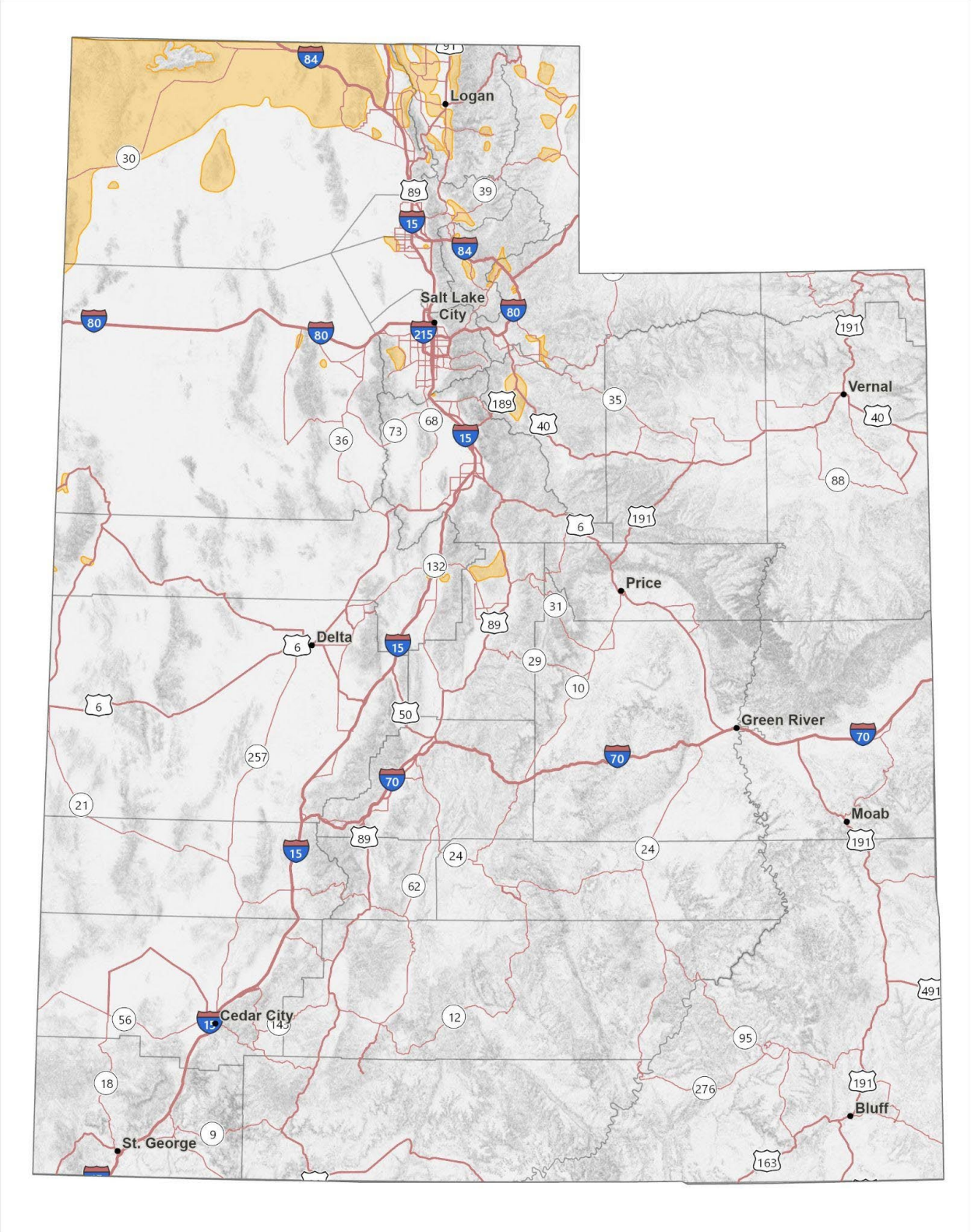

Figure 10.1 Occupied grey partridge habitat in Utah.

RING-NECKED PHEASANT

Pheasants (*Phasianus colchicus*), whose native range stretched across Asia, were first introduced into Utah in the late 1800s and early 1900s, and now occupy suitable habitats in 27 of 29 counties (Figure 11.1), although declines in habitat availability in many counties limits population range and size.

Pheasants are connected to agriculture and exist at varying densities on or near farmland and riparian corridors throughout Utah. Factors integral for pheasant survival include brushy or woody winter cover, nesting and/or brood rearing cover often associated with grasslands near agriculture, winter food, and the proximity of these habitats to one another (Hubbard 1991). Studies indicate that pheasants favor non-row crop herbaceous vegetation, especially grasslands, are generally associated with small grains crops, and hay to raise broods in (Drake et al. 2009). Nesting cover also provides early brood-rearing cover, as broods tend to remain near the nest for three weeks after hatching (Warner 1979).

The factors associated with declines in pheasant populations nationwide are also a concern in Utah: the development of clean farming practices, declines in crop diversity, conversion of native grass and scrubland habitats to cropland, and increasing urban development (NWPTC 2021). Utah is party to the National Wild Pheasant Conservation Plan (NWPTC 2021) that outlines broad objectives for conservation priorities and populations nation-wide:

Objective I. Maximize the resources available to federal and state agencies, NGOs, and other partners to improve pheasant abundance, access to quality hunting opportunities, and other amenities necessary to improve pheasant hunter participation and the relevance of pheasant management.

Objective II. Maximize the efficiency with which federal and state agencies, NGOs and other partners use their collective resources to improve pheasant abundance, hunter participation, and management relevance.

Objective III. Strengthen the body of scientific evidence (a) describing the factors affecting pheasant abundance and hunter participation, and the methods with which those factors can be most efficiently influenced; and (b) quantifying the broader societal benefits of pheasants, their hunters, and habitats, and how best to communicate the relevance of those benefits to a diversity of stakeholders.

The National Wild Pheasant Conservation Plan measures habitat in “CRP Acre Equivalents” based on habitat value of many cover types relative to Conservation Reserve Program acres. The stated goal for Utah is to simply maintain current habitat and prevent additional habitat loss.

Population Status/Monitoring

Pheasant populations in Utah are not currently monitored, but a postseason hunter harvest survey is completed annually. Historically pheasant populations had also been monitored using spring crow counts, winter sex-ratio counts, brood route surveys, and hunter bag checks. These

data provided information to the public about the current hunting season's outlook and helped monitor long-term population trends. However, low densities and loss of habitat in survey areas reduced the effectiveness of field surveys and they were removed from work plans in 2001.

Stocking Program

With reduced populations of wild pheasants, but lingering popularity of pheasant hunting, the DWR stocks pheasants in release areas akin to community fishing ponds in order to provide additional pheasant hunting opportunity. Utah's pheasant stocking program is operated as a 'put and take' operation, and is not utilized to restore or maintain wild pheasant populations. The DWR stocks game farm pheasants, purchased from private contractors, on many wildlife management areas and walk-in-access areas throughout the state in areas with hiding cover available to pheasant, but not exclusively on properties with habitat that will support wild pheasant populations.

Alternative stocking methods have been tried, however none have been shown to be effective in increasing populations or cost effectively getting birds into hunters' bags. For example, Thacker et al. 2016 found that only 5.5% of pheasant and 7.2% of bobwhite were returned to bag using an artificial brooder (i.e., surrogator). Thackston et al. 2012 found that the mean cost of a bird returned to bag using artificial brooders was $489 to $821 per bird.

Harvest

Male and female pheasants have distinct plumage, making identification of sex by a hunter possible upon flushing. This distinction allows sex specific hunting regulations to be put in place targeting only male birds leaving female pheasants. Since pheasants are polygamous, with males forming territories and being able to fertilize 10 or more females, harvest of only males has little to no potential to impact breeding populations.

Pheasant populations peaked in Utah during the 1950s and 1960s, with harvest remaining high through the early 1970s when populations began a long term decline. During the years of peak pheasant harvest in Utah, the DWR operated multiple game farms and released a considerable quantity of pen-reared birds each year. An average of 85,000 hunters harvested 255,000 pheasants annually in the 1960's. In the last decade, an average of 18,100 hunters spent 44,000 days to harvest 71,300 pheasants annually or 2.4 per hunter. Estimated harvest ranged from 29,704 to 60,104 birds. Average pheasant harvested per day per hunter has remained stable over the last decade at about 0.65, but decreased substantially from 1.17 in the 1960's. (See Upland Game Annual Harvest Survey).

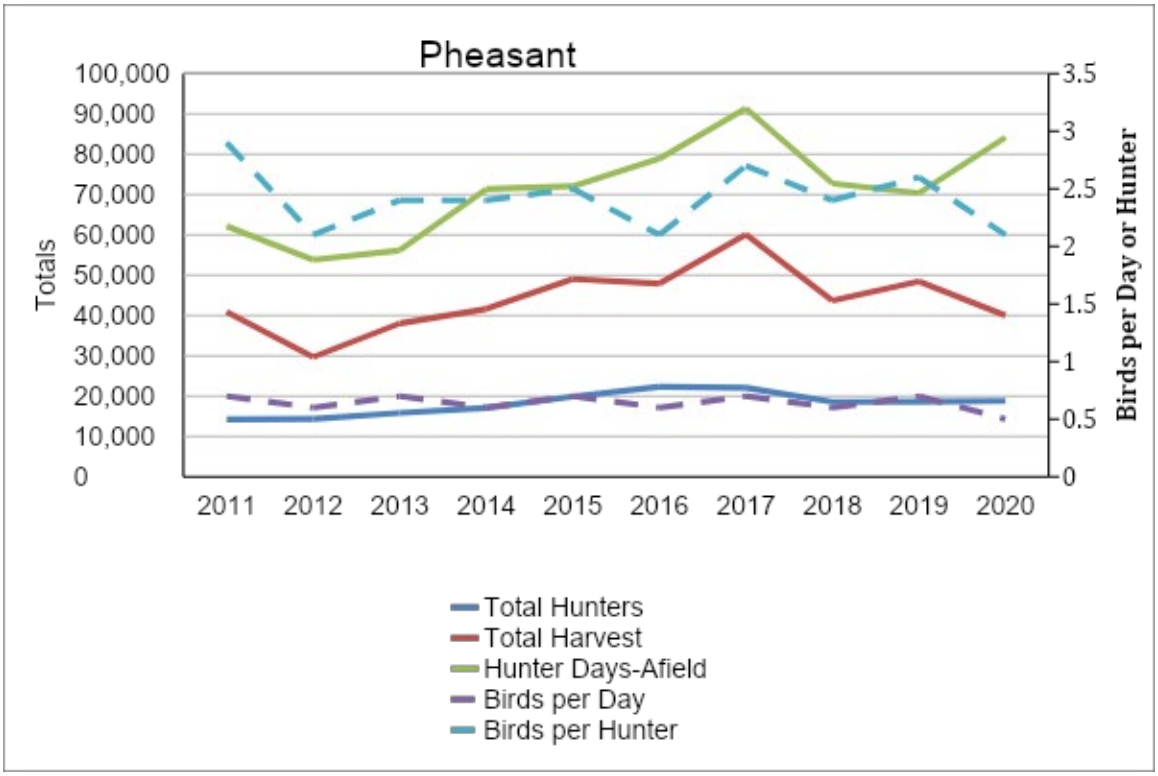

Figure 11. Pheasant harvest and hunter participation from 2011 to 2020.

Pheasants continue to be one of the most popular upland game birds in the state, even as participation and harvest numbers are much lower than past decades (Figure 11.1). Pheasant hunting seasons are relatively liberal and provide considerable recreation for the public. Pheasants are concentrated on limited public land and private land associated with wetlands and agriculture.

Threats

- Habitat Loss; urbanization and clean farming practices and conversion of grasslands to croplands
- Climate; drought leading to reductions in wetland habitat and accelerating agricultural conversion.

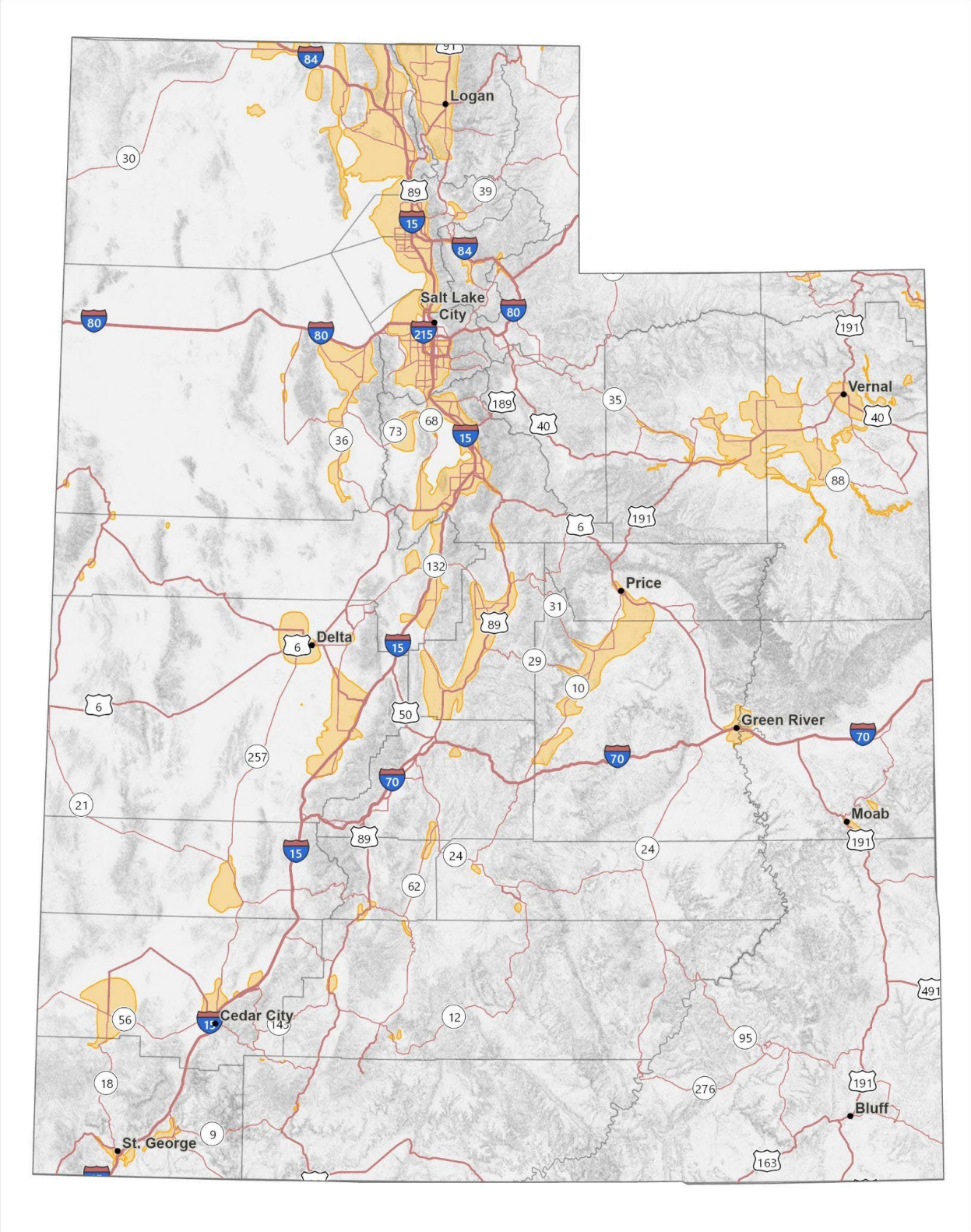

Figure 11.1 Occupied pheasant habitat in Utah.

RABBITS AND HARES

Rabbits and hares (i.e., lagomorphs) are mammalian upland game and are found worldwide. Lagomorphs are commonly harvested for both sport and commercial use. Rabbits and hares are largely distinguished by the condition in which their young are born. Rabbits have altricial young, meaning they are born with no hair and are blind, thus completely dependent on parental care (Feldhamer et al. 2015). In contrast, hares produce precocial young, which are born with fur, open eyes, and can move shortly after birth (Feldhamer et al. 2015). Utah has three species of rabbits and three species of hares. Desert and Mountain cottontails (*Sylvilagus audubonii* and *Sylvilagus nuttallii)*, respectively, pygmy rabbits (*Brachylagus utahensis*), black-tailed and white-tailed jackrabbits (*Lepus californicus* and *Lepus townsendii*, respectively) and snowshoe hares (*Lepus americanus*) are classified as upland game animals in Utah. Harvest for both species of jackrabbits is not regulated and is not controlled — they may be hunted without a license and have a year- round season with no bag or possession limits. Pygmy rabbits have been classified as a Species of Greatest Conservation Need (SGCN) in Utah since 2005, and are not considered a huntable upland game species. Further information on pygmy rabbits in Utah, including management issues and concerns can be found in Utah's State Wildlife Action Plan (wildlife.utah.gov/wap) on the DWR website.

Rabbits and hares may exhibit high rates of annual reproduction. Annual production for most species of hare is typically 10 young per female (Flux 1981). However, cottontails' annual production varies between approximately 10 to 35 young per female and has been shown to be correlated with other upland bird species (Chapman and Ceballos 1990). Snowshoe hare reproduction rates fluctuate more than most hare species (Keith 1981), reproducing up to four times a year, with litter sizes varying from one to 14 young (Hodges 1999, Ellsworth and Reynold 2006).

As with most species with high reproductive potential, lagomorphs can also experience high rates of annual mortality. Environmental extremes and the depletion of plant resources can result in predation and disease, which are the main contributors for rabbit and hare mortality. While lagomorphs are biologically flexible and adapted to diverse habitats and ecological surroundings, their annual mortality rates can reach 90% in some populations. Rabbits and hares are the foundation of many predator-prey interactions. Their intermediate size and abundance facilitates a food source for a community of small to medium-sized predators. Some hare populations can impact the reproductive success of their predators, such as coyotes (Cypher et al. 1994, Bartel et al. 2008), bobcats (Knick 1990), and golden eagles (Steenhof et al. 1997).

Desert and mountain cottontail rabbits range throughout Utah (Figure 12). Cottontails can occupy a diverse range of habitats including disturbed areas and transitional habitat zones. In Utah, desert cottontails can survive in many habitats and standing water is not necessary for their survival. They are found in the desert areas and lower slopes of the mountains, usually staying below 6,000 feet. Mountain cottontails prefer habitats above 6,000 feet, and they are

considered sagebrush specialists, depending on sagebrush as a major food source. Both species can be found in riparian areas (such as creek bottoms and washes) with sagebrush and willow trees, and near rocky outcroppings, or areas that transition between sagebrush and agriculture fields. Both cottontail and pygmy rabbits utilize burrows throughout the year for protection and parturition.

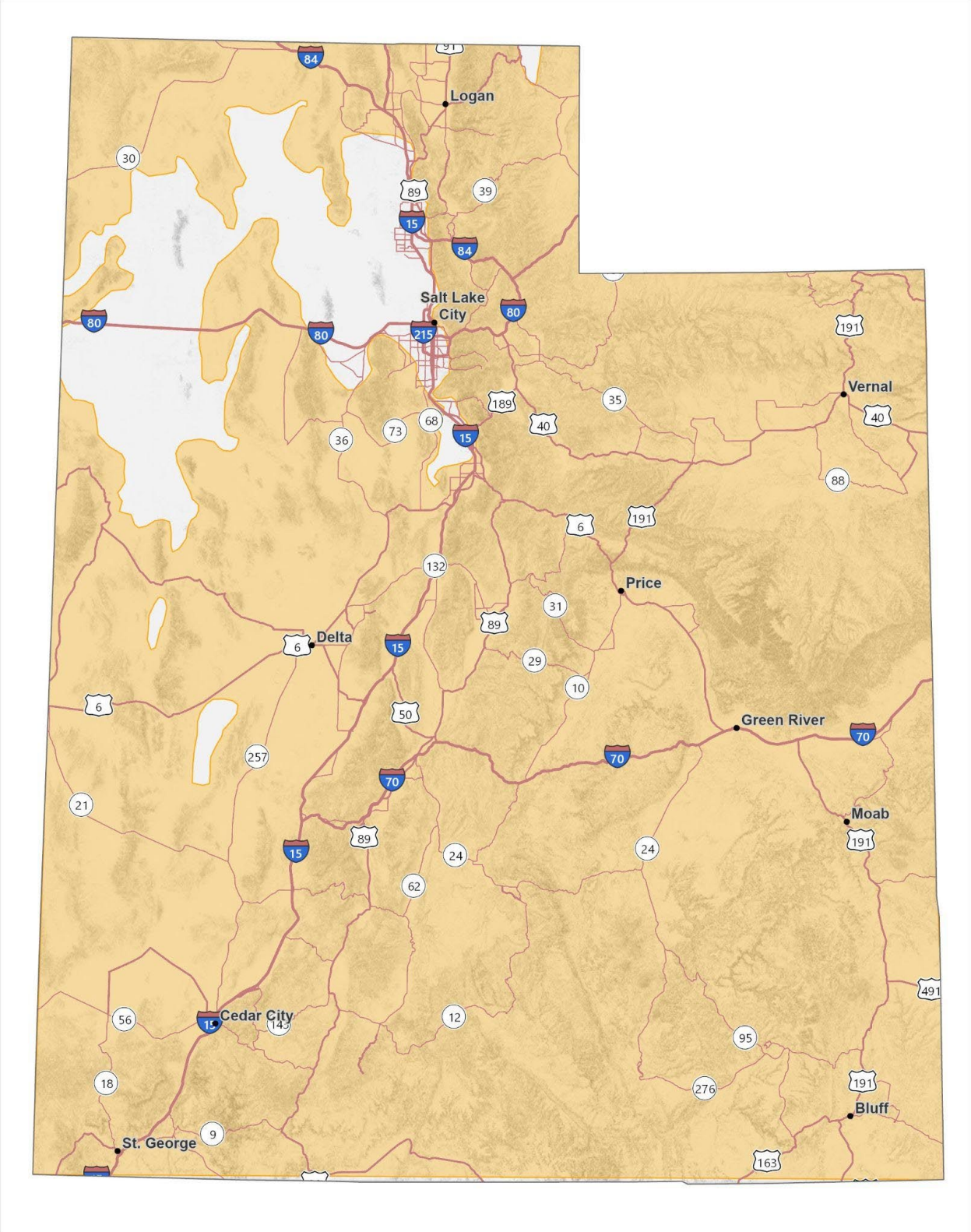

Figure 12. Occupied cottontail rabbit habitat in Utah.

Snowshoe hares occupy the center portion of northern and central Utah, as well as the northeastern region (Figure 13). They are closely tied to Engelmann spruce, Douglas-fir, subalpine fir, and lodge pole pine forests that provide adequate escape cover and buds, twigs, bark, forbs and conifer as food sources. Like desert cottontails, open water is not necessary for snowshoe hares, and they are also coprophagic, meaning they eat their own fecal matter after its first pass. Snowshoe hares have white pelage (fur) during the winter, and shift to brown pelage during the summer in most situations (Chapman and Ceballos 1990, Ellsworth and Reynolds 2006). There is recent evidence that the impacts of drought — the decreased snowfall and earlier melting of snow — could potentially alter the winter coat in polymorphic species such as snowshoe hares (Mills et al. 2018).

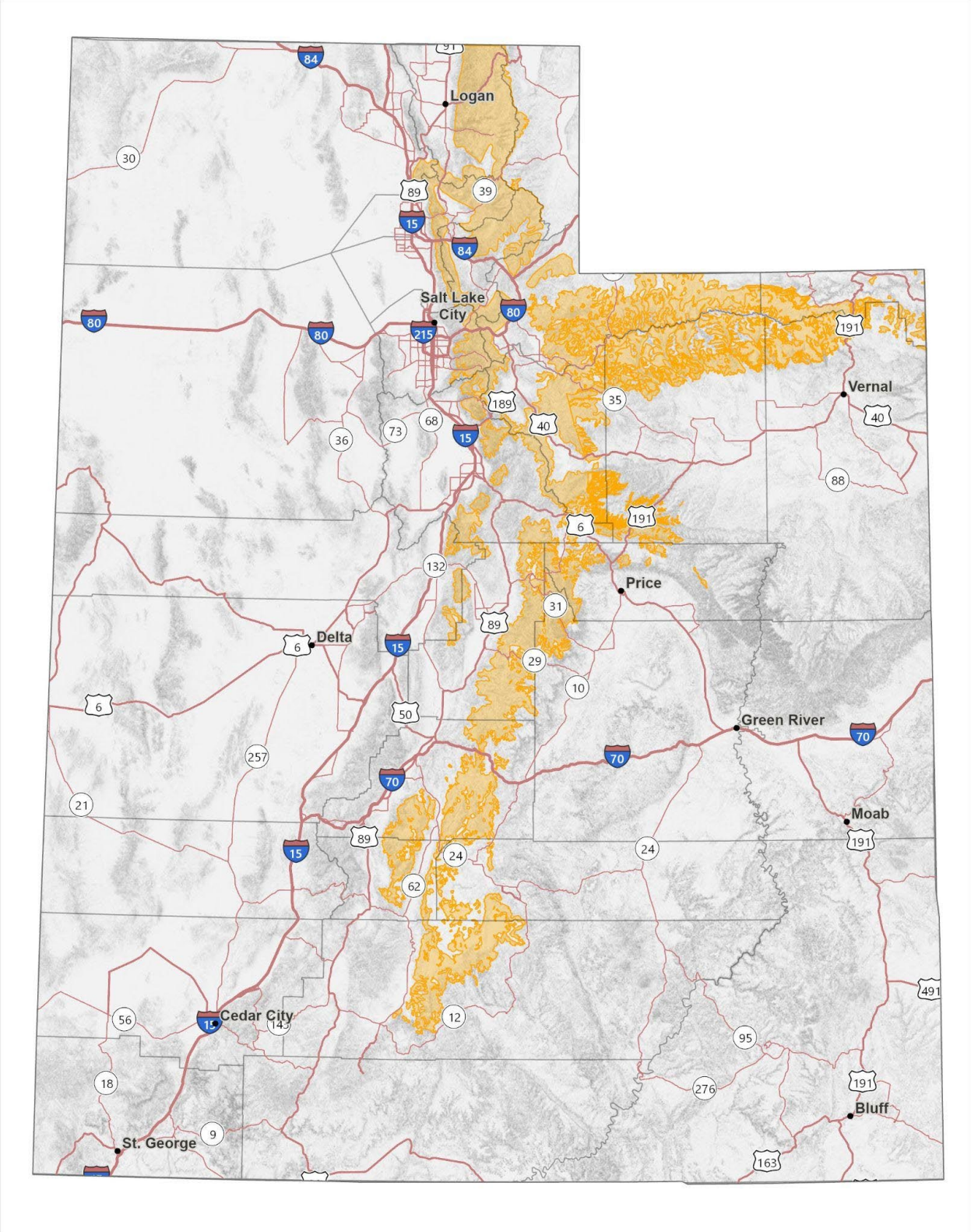

Figure 13. Occupied snowshoe hare habitat in Utah.

Harvest

In general, rabbits and hares have short lifespans with high mortality rates. Their populations can fluctuate and exhibit large annual variations. Lagomorphs are hunted in many areas of North America and Europe, and both climatic conditions and predation can influence population change (Boland and Litvaitis 2008). However, recent drought conditions in Utah have likely contributed to the substantial population decline. Cottontail rabbits can be hunted in Utah from September 1 to February 28, and snowshoe hares from September 1 to March 15, with a liberal daily bag limit of 10 rabbits and five hares. Estimates for cottontails and hares have been separated since 2003. Cottontails are harvested more often than that of snowshoe hares, likely due to greater numbers of cottontails and convenience of hunting in most cottontail habitats.

Over the past 10 years, approximately 8,200 hunters harvested 47,000 cottontails per year, while 750 hunters harvested 1,300 snowshoe hares per year. The number of cottontail rabbits and snowshoe hares harvested per day by hunters has averaged 1.97 and 0.45, respectively from 2010-2020 (Figures 12.1 and 13.1). Cottontail rabbits are often found in open areas, while in contrast, snowshoe hares are relatively difficult to access in dense forest and deep snow during much of the hunting season.

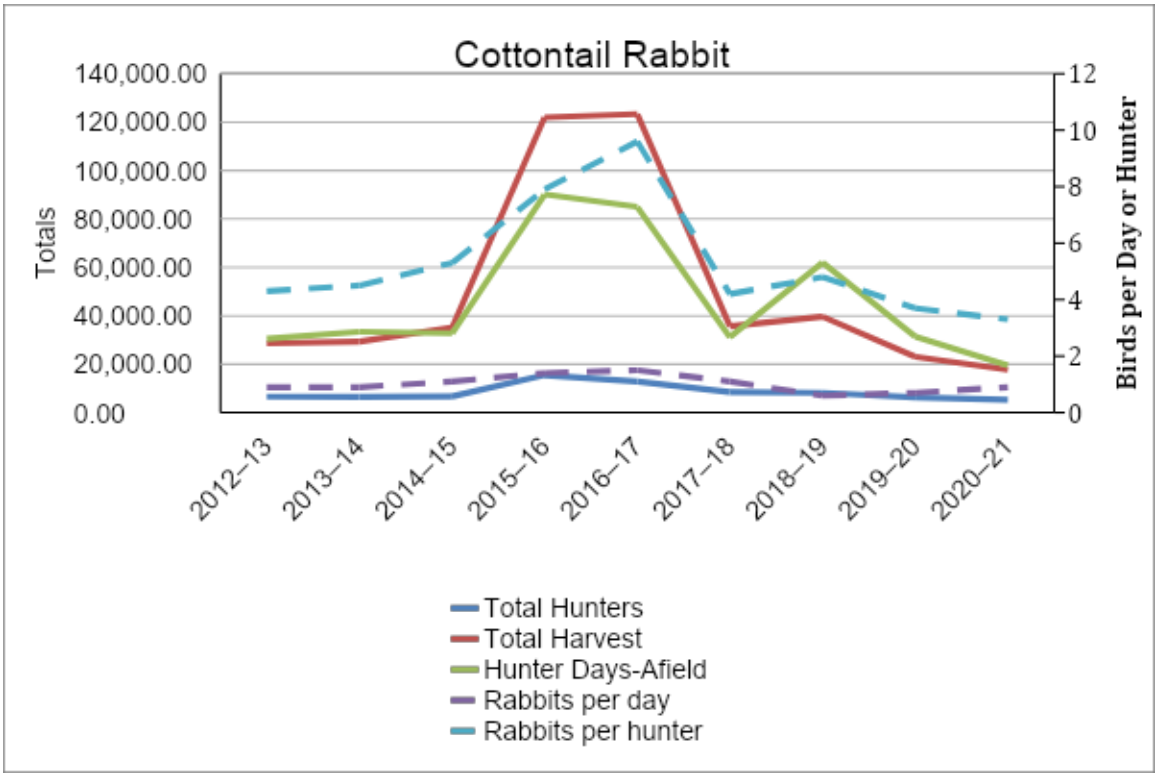

Figure 12.1 Cottontail rabbit harvest and hunter participation from 2011 to 2020.

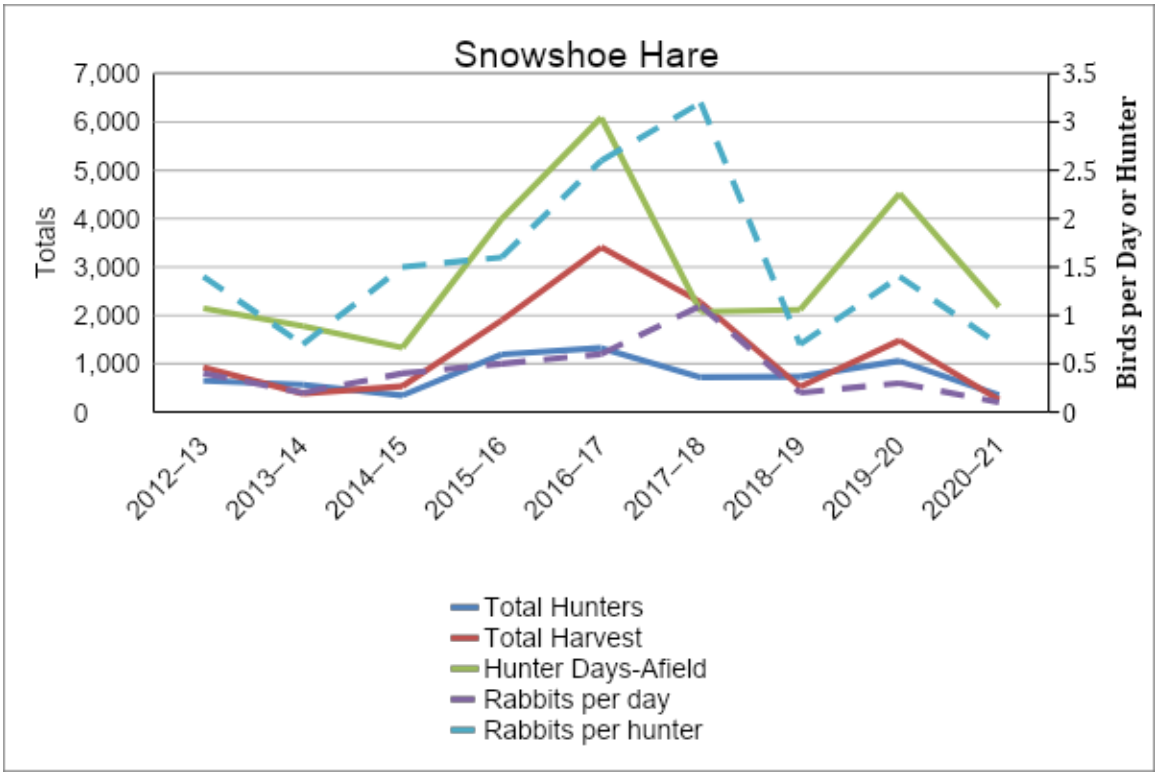

Figure 13.1 Snowshoe hare harvest and hunter participation from 2011 to 2020.

Population Status/Monitoring

Cottontail rabbit roadside count routes were established shortly after the species was declared a protected game animal in 1966. Routes were discontinued in 2001, and later restarted in 2010. In 2020, routes were reduced from 3 repeated counts per route to a single count per route while also conducting pellet surveys for monitoring rabbit populations. Beginning in 2012, jackrabbits have also been recorded during cottontail surveys. Counts are conducted during the annual survey period July 22 – August 20 when cloud cover is less than 75% and when wind velocity is under seven miles per hour. Routes are 30 miles long and driven at 20 miles per hour or less and start at local official sunrise.

The DWR also partners with HawkWatch to conduct walking transects. These surveys are conducted along permanent, square, 1.6-kilometer long transects (0.4 kilometers per side). Walking transects are carried out between 8:30 a.m. and 6:30 p.m. in May (or first week of June). Transects are walked by a single observer navigating to all 4 corners of the transect and recording the perpendicular flushing distance relative to the transect of all jackrabbits and cottontails detected, as well as identifying pellets found within the transect. We encourage transect surveyors to photograph the habitat along the transect from each corner point and facing toward the subsequent point during each spring survey effort to document gross habitat changes that occur over time. Photographs should also be taken immediately following obvious habitat changes that occur between survey efforts.

Utah is currently experiencing a decline in rabbits, though an increase is anticipated when drought conditions subside. The Utah Department of Agriculture and Food has been collaborating with the DWR to report occurrences of rabbit hemorrhagic disease serotype 2 (RHDV-2). First identified in domestic rabbits in Europe, the disease has been detected in multiple southwestern states and northern Mexico in early 2020. On June 22, 2020, the Utah Department of Agriculture and Food confirmed that a private farm with domestic rabbits in Sanpete County had rabbits test positive for the disease. To date, this virus has been confirmed in Iron, San Juan, Sanpete, Uintah, and Wayne counties. We have not had any confirmations of the virus in 2021 (DWR, 2020): https://wildlife.utah.gov/rabbit-hemorrhagic-disease.html).

Threats

- Drought; reduction of food source as desired vegetation is less available
- Predation; avian predators, bobcats, coyotes, other mammals
- Disease such as RHDV-2, tularemia, etc.

UPLAND GAME MANAGEMENT DIRECTION

Statewide upland game management goals will be achieved through quantifiable objectives and strategies. This tiered structure was created to provide guidance for each upland species, considering the stakeholder opinions, agency resource allocations, and opportunities and challenges of each resource. These objectives and strategies form the foundation for future annual work plans, research council proposals, and budget requests.

POPULATION AND HARVEST MONITORING

Management Goal: Expand baseline knowledge of factors that are limiting upland game population size and distribution.	
Objectives	**Strategies**
Identify top priority information necessary for managing upland game	Collaborate with regional wildlife managers, NGO partners, and universities to identify needs for upland game species. Priority species include forest grouse, chukar, scaled quail, ptarmigan, rabbits and grey partridge
Apply for funding through WRI and apply through Research Council to facilitate university student research	See Research Priorities section
Improve and update range maps	Develop habitat suitability models
	Meet with regional biologists to edit maps
	Incorporate crowd sourced locations

Utilize emerging technologies to conduct surveys	Infrared technology or other night vision, sound amplifiers, etc.

Management Goal: Improve population monitoring upland game species to better inform management decisions	
Objectives	**Strategies**
Improve current methods to monitor annual upland game productivity	Standardize and expand the wing collection program to attain a more extensive index of annual upland game bird productivity and promote a research project for the compilation of old wing data
	Implement or increase efforts of utilizing dogs for upland surveys; brood surveys for dusky and ruffed grouse, develop survey methods for sharp-tailed grouse, ptarmigan, and scaled quail
	Utilize cameras to collect data on species where applicable
	Work with a graduate student (as funding allows) to analyze relationships between weather patterns, annual productivity, and estimated harvest of upland game species to construct a predictive tool to forecast upland game bird populations
	Promote use of eBird for upland game sightings, until DWR implements a different platform
	Increase or establish new rabbit routes
Establish scientifically defensible population trends independent of hunter harvest surveys sufficient to justify continuation of upland harvest into the future	Evaluate current survey methods used by DWR and survey methods in the literature and used by other states
	For each species, rank the need for a population index
	For each species, estimate the time needed to conduct surveys or to manage volunteers if feasible
	Provide updated range maps for each species
Create databases for storing upland game data	Create multi-species band database
	Create multi-species radio database (Wildlife Tracker)
Rabbit Routes	Increase rabbit route effort and/or establish new rabbit routes for highest survey efficacy

Management Goal: Improve efficiency of upland game species translocations	
Objectives	**Strategies**
Evaluate previous translocation efforts	Work with research staff and regional wildlife managers to analyze data and evaluate success or failure of prior translocation efforts
Develop translocation guidelines to be consistent with WAFWA translocation standards for translocation of upland game from, into or within Utah	Work with regional wildlife managers to develop guidelines in response to requests for in-state and out-of-state translocations of resident upland species
Evaluate translocation success and outcomes, and explore updated methodology	Develop a single database of all known upland game translocations and pen-reared releases
	Establish a true need before undertaking translocation efforts
	Evaluate habitats before release
	Monitor populations after release
	Create distribution models for species to expand possible release sites
	Finish California quail habitat evaluation guidelines and prioritized release sites; complete this for other quail species
	Document release effort and lessons learned
Increase distribution of chukar partridge	Identify areas of suitable habitat without extant populations
	Identify limiting factors (i.e. water distribution)
	Translocate wild birds

HABITAT IMPROVEMENT AND MANAGEMENT

Management Goal: Preserve and enhance available habitat for upland game species.	
Objectives	**Strategies**
Work with regional staff and other partners to apply for at least 5 WRI projects per region per year	Partner with NRCS and utilize the WRI program to create and maintain or increase acres of upland game habitat per year

	Maintain four Farm Bill biologists in Natural Resources Conservation Service offices to encourage landowners to participate in Federal Farm Bill programs and design conservation projects to benefit upland game
	Identify priorities within each region that will focus on region-specific needs, including a ranking of highest priority WMAs for upland benefit
	Recommend pollinator seed mixes with z-dike structures
	Combine upland projects with other game projects such as fawning, and partner with Mule Deer Foundation and other non-government organizations for additional funding
	Seek funding for a Habitat Specialist position (in conjunction with Pheasants Forever and Sportsmen for Fish and Wildlife as shared stewardship); this position will entail directing, and implementing habitat management work on public wildlife areas; and other duties as assigned to benefit/survey upland game, waterfowl, and WMAs. Will start with this position covering the northern and central regions; goal is to expand for one position per region as funding allows
	Identify priorities within each region of Utah where DWR staff will strategically focus habitat improvement efforts that benefit species unique to those regions, or to establish species in those regions, including utilizing Farm Bill biologists' knowledge to best identify private resources, and collaborate with BLM, USFS, STILA and other agencies to address public lands
Preserve or increase upland game populations and hunting opportunities through habitat management on Waterfowl Management Areas and Wildlife Management Areas (WMAs) managed by the DWR	Rank WMAs for focus on upland benefit, and continue to support submission of WRI projects on WMAs for upland game
Establish water sources in areas needed to expand upland game species range and abundance, while establishing a protocol for artificial water source placement to maintain and improve available habitat for upland game species in Utah	Evaluate chukar partridge use of water sources
	Evaluate raven, fox, and other mesopredator use of water developments within sage-grouse range
	Conduct chukar study as proposed by Brigham Young University and continue to increase trail camera surveys at water sources.
	Evaluate water source impacts on population vital rates for

	target species
	Extrapolate and analyze data from camera surveys, upland report, telemetry data, etc. to evaluate impacts
	Complete an Upland Game Guzzler Plan — determine needed density and distribution of guzzlers to formulate an end goal and maintenance plan and address maintenance of guzzlers in plan
Forest grouse habitat treatments	Maintain forest grouse habitat projects (ensure leaving enough old forest stands for dusky winter habitat)
	Conduct surveys to check for utilization in habitat project areas
	More aspen for ruffed grouse winter habitat
Continue to seek land acquisitions and conservation easements	Work with regional staff and other agencies to identify land acquisitions and conservation easements that will benefit upland game

HUNTER OPPORTUNITY

Management Goal: Increase participation in hunting and appreciation for upland game species.	
Objective	**Strategies**
Maintain current marketing efforts for upland game hunting and viewing opportunities	Continue to work with outreach staff to develop news releases, conduct interviews, submit WildFind ideas, regional hunting clinics and seminars, increase knowledge of benefits of upland game (i.e. potential benefits of wild turkey to agriculture)
Maintain up-to-date methods used to inform hunters of upland game population trends	Continue social media presence
	Continue youth and beginner upland hunts (i.e. pheasant hunts) to recruit new hunters
	Continue to publicize the factors that influence upland game populations
	Develop education and outreach materials that describe the factors that influence upland game populations
	Present information annually to upland groups
	Increase involvement with NGOs to promote upland programs
Increase engagement	Provide information about banding

Evaluate effectiveness of outreach activities	Determine if events are effective in reaching new hunters
	Determine if events are effective in recruiting, retaining, or reactivating hunters
	Determine return-on-investment of events and pen-reared releases

Management Goal: Maintain or increase hunting access opportunities for upland game.	
Objectives	**Strategies**
Increase or maintain programs to establish access to private lands, seek avenues to access landlocked public land, or acquire more land for upland game hunting	Continue to seize opportunities for land acquisition/easements for long-term access to and increase large tracts of continuous acreage
	Pursue agreements that secure perpetual access to public land, and continue to support the access agreement established with the SITLA
	Inspire ethical practices on private lands through hunter education, guidebooks, and other outreach exercises
	Continue to advertise and maintain funding for the Walk-In Access program to improve access for upland game hunters

REGIONAL SPECIES PRIORITIES

Each of the five regions in Utah have unique geographical and climatic attributes — therefore, each region provides specific resources to enhance or expand upon. This emphasis does not preclude the improvement of habitat or management for other species, but prioritizes each region's unique qualities.

NORTHERN REGION

Management Goal: Northern Region Priorities	
Objectives	**Strategies**
Increase winter habitat for all upland game	Utilize WRI to propose habitat projects; use Farm Bill programs for upland species that utilize private lands. Habitat projects will be focused in White's Valley, Howell Valley, Hansel Valley, and the Bear River Valley north of Tremonton.
Year-round habitat development for pheasant, quail, rabbits, gray partridge, and on WMAs	Utilize WRI to propose projects on Richmond, Hardware Ranch, Henefer-Echo, East Canyon, Coldwater, Brigham Face, Cinnamon Creek and Middle Fork WMAs

Increase access to private lands for, gray partridge, pheasant, quail and (WIA)	Work with the wildlife recreation specialist to contact landowners with upland species on properties in Eastern Box Elder County and Northern Cache County. Work with landowners via Farm Bill programs to create habitat for upland species

CENTRAL REGION

Management Goal: Central Region Priorities	
Objectives	**Strategies**
Dusky and ruffed Grouse	Early successional aspen habitat work. Specific mountain ranges include: Deep Creek Mountains, Stansbury Mountains, Oquirrh Mountains, and Sheeprock Mountains
	Improvement (more and younger) of aspen stands in each of those mountain ranges where aspens occur. The promotion of limber and Douglas fir tree stands through logging and fire management
Ruffed grouse in Stansbury Mtns	Translocations, habitat projects. There are currently no ruffed grouse in the Stansbury Mountains. This would be an introduction of ruffed grouse in novel habitat, although they occur extensively along the Wasatch Front, and possibly in the Oquirrh Mountains
	There is available habitat in the Stansbury Mountains, specifically aspen stands and riparian drainages on the eastern slope (East Hickman, Box Elder, South Willow, North Willow canyons)
Chukar and California quail	Water developments; guzzlers. There is extensive chukar habitat throughout Tooele and Juab counties. Often the limiting factor is availability of water, especially in the summer and fall
	Water developments, guzzlers, increase chukar numbers and distribution. Adding more guzzlers throughout the West Desert will increase chukar densities and distribution, adding increased hunting opportunities.
	months Example areas include: Deep Creek Mountains, Silver Island Mountains, Grassy Mtns, Lakeside Mtns, Stansbury Mtns, Central and southern Cedar Mtns, Simpson Mtn, Sheeprock Mtns, Desert and Keg Mtns
Grey partridge - Ibapah area	Translocations, habitat projects. Huns existed in the Ibapah Valley along the Nevada border as recently as the 1990s. There are some indications that a small remnant population may still be there (J.Robinson Personal Observation).

	Wild grey partridge, supplemented with pen-raised grey partridge, could be released in appropriate habitat in Ibapah valley
	There are several drainages with grass, forbs and shrubs as suitable habitat. The new population could add additional hunting opportunities for all upland game hunters

NORTHEASTERN REGION

Management Goal: Northeastern Region Priorities	
Objectives	**Strategies**
Standardize and facilitate regular ptarmigan surveys	Learn "callback" technique from Colorado to expand current survey methods via electronic calls, or whichever method proves to acquire the best data
Ptarmigan research project	Work with university partners to get a student to conduct research. Until a formal research project is implemented, regular ptarmigan surveys will be conducted
Forest grouse project	Ashley National Forest plans to complete aspen restoration projects, want to capture the response of forest grouse. Additional aspen restoration work may occur on the Currant Creek WMA. If it occurs, monitoring of forest grouse response will follow
Habitat projects and telemetry research	Continue to facilitate upland game habitat projects in the region; utilize GPS transmitters to monitor habitat use as funding allows

SOUTHEASTERN REGION

Management Goal: Southeastern Region Priorities	
Objectives	**Strategies**
California quail	Continue to explore opportunities to protect and expand occupied habitat of California quail through habitat improvements such as BDA's, cooperation with private landowners, and transplants of wild birds, and utilize translocation protocol and habitat evaluation document
Chukar range expansion	Continued habitat improvement and guzzler construction for range expansion of wild chukars
	Promote habitat improvement projects that promote more wild chukars available for harvest in more accessible areas near population centers in Carbon and Emery counties
	Continue to utilize transplants of wild chukars to augment existing populations and provide for opportunities for range

	expansion
	Monitor effectiveness of guzzler construction projects by tracking use by chukars with trail cameras
Scaled quail project	Continued range expansion and monitoring of scaled quail through water developments and transplants of wild birds
	Historical observations of scaled quail have been noted in the Bluff Bench, Lime Ridge, and Montezuma Canyon areas. Continue to monitor these areas and check for occupancy
	Pursue agreements with neighboring states to transplant birds to these areas to augment populations and expand range
Forest grouse	Consider forest grouse habitat requirements and potential benefits when proposing vegetative treatments on summer ranges
	Consider habitat improvement projects in mixed coniferous-deciduous forests that create multiple small openings that maximize edge, promotes understory development and high forb abundance
	Incorporate these attributes in to habitat projects proposed for big game species in forest grouse habitat
R3	Continue to host organized youth pheasant and youth chukar hunts on DWR owned lands. These experiences recruit young hunters and generate enthusiasm for upland game hunting
Rabbit routes	Increase rabbit route efforts due to low populations, likely due to drought and possibly RHDV-2
	Look for additional methods to quantify rabbit abundance such as trail cameras at water sources or winter track surveys that correspond with other ongoing efforts
	Continue to work with HawkWatch to share our data with them and receive the transect data they collect
	Carefully monitor disease outbreaks by picking up and submitting rabbit mortalities to the State Vet Lab

SOUTHERN REGION

Management Goal: Southern Region Priorities	
Objectives	**Strategies**
Increase distribution of chukar partridge	Identify areas of suitable habitat without extant populations
	Identify limiting factors (i.e. water distribution)

	Translocate wild birds; utilize current chukar trapping efforts to augment populations
Forest grouse habitat treatments	Maintain forest grouse habitat projects (ensure leaving enough old forest stands for dusky winter habitat) many projects have removed conifer; ensure there is enough remaining conifer
	Conduct surveys to check for utilization in habitat project areas. May conduct scat transects, drumming surveys, etc.
	Ensure aspen stands are healthy for ruffed grouse winter habitat; continue to apply for funding through WRI
Increase knowledge of rabbits	Studies with GPS units, analyze current data
	Increase rabbit route surveys to check for utilization in treated areas; compare current rabbit route data to encroachment of cheatgrass, other climatic events, other species' trends, study avian predation
Continue pen-reared pheasant program	Maintain current funding and evaluate R3 impacts in final report for the grant; continue organized pheasant hunts.

APPENDICES

Appendix 1: Species Specific Management Plans

a. WT Ptarmigan
    i. Biological Unit Management Plan: White-tailed Ptarmigan (UDWR 1975)
b. Snowshoe Hare
    i. Strategic Management Plan for Cottontail Rabbits and Snowshoe Hares (UDWR 1989)
c. Cottontail Rabbit
    i. Strategic Management Plan for Cottontail Rabbits and Snowshoe Hares (UDWR 1989)
d. Greater Sage-grouse
    i. Utah Conservation Plan for Greater Sage-grouse (PLPCO 2019)
    ii. Conservation Plan for Greater Sage-grouse in Utah (PLPCO 2013)
    iii. Utah Greater Sage-grouse Management Plan (UDWR 2009)
    iv. Strategic Management Plan for Sage-grouse (UDWR 2002b)
e. Gunnison Sage-grouse
    i. Gunnison Sage-grouse Rangewide Conservation Plan (Gunnison 2005)
    ii. Final Recovery Plan for Gunnison Sage-grouse (USFWS 2020)
f. Sharp-Tailed Grouse
    i. Guidelines for the Management of Columbian Sharp-tailed Grouse Populations and their Habitat (Hoffman 2015)

ii. Strategic Management Plan for Columbian Sharp-tailed Grouse (UDWR 2002)

g. Chukar
    i. Strategic Management Plan for Chukar Partridge (UDWR 2003)
    ii. Western States Chukar and grey Partridge Management Guidelines (Knetter et al. 2017)
h. Grey Partridge
    i. Western States Chukar and Grey Partridge Management Guidelines (Knetter et al. 2017)
    ii. Strategic Management Plan for Hungarian Partridge (UDWR 1987)
i. Ring-necked Pheasant
    i. National Wild Pheasant Conservation Plan (NWPTC 2021)
    ii. National Wild Pheasant Conservation Plan (Midwest 2013)
j. California Quail
    i. Strategic Plan for Quail Management (UDWR 1987)
k. Gambel's Quail
    i. Strategic Plan for Quail Management (UDWR 1987)
l. Wild Turkey
    i. Utah Wild Turkey Management Plan (UDWR 2014)
    ii. Strategic Management Plan for Wild Turkey (UDWR 2000)
    iii. Strategic Management Plan for Wild Turkey (UDWR 1998)

Appendix 2: Upland Game Translocations

Translocation may be necessary in limited circumstances when populations have reached low levels, lack genetic diversity, have been extrapolated, or to introduce new populations. There have been many translocation attempts, many of which have been successful, but more that have failed or were performed without adequate planning or monitoring to even determine if they were successful. If a translocation is deemed necessary it is critical to document the need for a translocation, evaluate the habitat in the release site to ensure there is sufficient quality and quantity of habitat for successful establishment, follow best practices for capture, transport and release, monitor the introduced population to evaluate success, and document the project so that successful methods can be repeated and unsuccessful methods can be avoided in the future.

Each translocation project proposal should have the following:

1. Purpose of the release and project goal. Clearly define what success is
2. Habitat evaluation or Habitat Suitability Index of proposed release site
3. Historical and current densities
    a. Identified and remediated limiting factors in the case of augmentations or reintroductions
4. Release site description – including size of property or project area, historic habitat conditions, current habitat conditions, ownership, long-term management plans, connectivity, etc.

5. Translocation methods – trapping, handling, and release
6. Disease/parasite testing, response procedures, and disease risk analysis
7. Proximity of release to large domestic poultry or gamebird operations
8. Proposed source location/ownership. Justification that source population will not be jeopardized
9. Expected timeline. Number of releases over what time period
10. Target number of birds per year and total, including age and sex ratios
11. Any previous translocation efforts/experience
12. Habitat management/maintenance efforts to date, monitoring, and plans to ensure long-term success
13. Monitoring protocols

Annually and at the conclusion of the project it is critical to future management that the efforts be documented:

1. Numbers/age ratio/sex ratio and location(s) of birds captured and released
2. Capture and transport mortality, carcass disposition
3. Disease monitoring results
4. Site fidelity of translocated birds (if available)
5. Survival rates of translocated birds (if available)
6. Production rates of translocated birds (if available)
7. Modifications from original proposal
8. Evaluation of trap, transport and release methods
9. Results of release site disease screening (first annual report)
10. Harvest information (if applicable)
11. Overall evaluation of the translocation effort
12. Other lessons learned

Appendix 3: Upland Game Water Developments

To be completed by 7/1/2024.

Appendix 4: Upland Opinion and Harvest Survey Methodology

To address upland game opinion surveys or management surveys, we have compiled excellent lists from the last 5-10 years of hunters who hunted upland game. We can pull the list of all hunter customer IDs from the harvest surveys over many years to get a more-than-adequate population base from which to survey. Generally, survey sample sizes of ~400 allows for statistically significant results when questions are simple (for example, yes/no, multiple choice, ranking/rating scale questions). Of course, we also have complete lists of hunters interested in sage-grouse, turkey, sharp-tailed grouse, white-tailed ptarmigan, band-tailed pigeon, and sandhill crane (those who drew permits as well as those who applied), so any of those hunters' names that don't show up in the general harvest surveys lists will be added because of these special permits.

Harvest surveys are conducted differently — the pool of potential upland game hunters in a single year is vast and complex and includes: anyone with a valid hunting or combination license (resident and nonresidents, youth, adult, senior, disabled veteran, etc.), lifetime license holders, hunter education completion certificates, three-day nonresident hunting licenses, etc. We have developed a multi-faceted sampling strategy to analyze these differing permit types separately (this is called stratification: for example, nonresident youth hunting licenses will have much different activity and harvest than adult resident combination licenses so they need to be analyzed separately). The first wave is an online harvest survey sent to a sample of each license type. We send 60-80k emails per year with roughly 9-14k responses received. The majority of hunters in this list have hunting/combination licenses to apply for or hunt big game exclusively. We need this large sample size in order to get a valid sample size of hunters who did hunt upland game, per species. Fortunately, for the size of this survey, cost is minimal.

The email invitation/online survey has potential for bias because hunters who respond are more likely to have hunted upland game, or more likely to have harvested. To correct for this response-bias, we conduct a second survey by telephone (costly but necessary). We pull a randomized, stratified sample from those who did not respond to the online survey, and contact these hunters by telephone, making several attempts to fill as much of the sample as possible. Then the 2 datasets are combined using a statistical method outlined in "Wildlife Demography" by Skalski, Ryding, and Millspaugh.

Appendix 5: Upland Opinion Survey Summary

METHODS

A survey was created based on stakeholder input and historical records; there were two sample populations — convenience sample on social media, and a random sample of individuals from our aforementioned hunter harvest survey. This survey was sent to individuals and available online in January and February of 2022.

The DWR received 1,476 total survey responses. The email sample resulted in 573 responses (a 42% response rate; sent to 1,353 hunters from the harvest survey,). The web-link sample resulted in 903 responses (533 clicks and 17,040 people saw the ad at least once).

The average age of respondents was 44.4 years old, 94% were male and 6% were female. Four percent of new hunters responded (0-3 years of hunting), 35% were seasoned hunters (4-25 years of hunting) and 61% were veteran hunters (over 25 years of hunting).

KEY FINDINGS

Over 50% of non-upland game hunters would be more likely to hunt if they knew where to go. Overall, hunters do not describe their hunting experiences as good —new hunters are more likely to describe their experiences as good, and the majority of hunters that ranked their experiences as less than good, indicate that a lack of game is the issue. Most hunters utilize

public lands for hunting, and express crowding as a problem. Hunters perceive habitat loss as an important factor impacting upland game populations, and our hunters strongly support installing guzzlers.

Research Priorities

Species	Info/research needs for harvest	Info/research needs for conservation and management	Current Justification of Harvest
Dusky Grouse	Baseline population monitoring (breeding surveys, production indices, fall pop estimation),	Breeding populations surveys/monitoring statewide	Very low band returns in Cache County, Farnsworth et al. study (USU)
	Breeding surveys most important	Relationship of brooding habitat and fawning/calving habitat	
	Harvest rate (Farnsworth - already low)	Nesting habitat	
	Population relationships with precipitation	Response to management (aspen, Doug fir, fire, riparian, etc.)	
	Adult hen harvest	Genetics - isolated vs. contiguous populations	
	Aggregate bag with Ruffed Grouse issues		
Ruffed Grouse	Harvest rate	Habitat selection	Low survival, high reproduction grouse spp. higher probability of compensation
	Population estimates (breeding & fall)	Response to habitat management (low priority)	
	Population relationships with precipitation	Genetics - isolated populations	
		Translocations (CO, NV)	

Species	**Info/research needs for harvest**	**Info/research needs for conservation and management**	**Current Justification of Harvest**
Chukar Partridge	Harvest rate (some info from R. Larsen available)	Habitat relationships with fire/PJ loss/etc.	Unsure of band returns on BYU studies? Low survival, high reproduction spp. limited/difficult access
	Breeding/fall population estimations/status/trend (some info - camera/helicopter)	Spatial ecology of water use	
	Population Relationships with Precipitation		
Grey Partridge	Harvest rate	Habitat selection and availability in Utah	Low survival, high reproduction spp., overall harvest is low statewide
	Public vs. private land issues (population available for harvest)	Habitat relationships with fire/PJ loss/etc.	
	Population relationships with precipitation		
White-tailed Ptarmigan	Harvest rate and risk	genetics (already evidence of bottlenecking), hunter harvest wings	Inaccessibility and low hunter success have kept them safe, however, things hunter harvest dynamics have changed in the last several years
	Adult hen harvest risk (associated with broods in the early season)	Translocations - increase genetic diversity, boost population levels, and establish new populations	
	Hunter characteristics (success)		
	Population levels (breeding and fall)		

Species	**Info/research needs for harvest**	**Info/research needs for conservation and management**	**Current Justification of Harvest**
Pheasant	Harvest rate of planted birds (return on investment)		Polygynous spp. and only males are harvested
California Quail	Harvest rate	Assessment of urban trapping and translocation efforts	Very low survival, very high reproduction species, lots of room for compensation, and limited hunting areas in the state
	Harvest impacts (urban vs. WMA)	Establishing populations	
	Understanding the relationship with precipitation	Habitat selection	
	Breeding and fall population trends	Habitat management	
Gambel's Quail	Harvest rate (what info do we already have from Brigham Young University?)	Effects of fire/cheatgrass in Mojave Desert	Very low survival, very high reproduction species, lots of room for compensation, and limited hunting areas in the state
	Hunter characteristics (Southwest UT)	What about translocated populations (Montezuma Creek, Torrey-Teasdale, etc.)	
	Breeding/fall population		
	Production indices		
	Relationship with precipitation		

Scaled Quail	Not currently hunted	Translocation success - continued monitoring (Butte)	Not hunted
		More translocations with wider distribution	
		Learn from the Gambel's in Montezuma Creek	
Lagomorphs	Address declines	Evidence of decline; population decreases over time as depicted in rabbit routes	
		Increase rabbit routes	
		Increase rabbit habitat projects	
		Develop surveys for snowshoe hares	

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R657. Natural Resources, Wildlife Resources.
R657-6. Taking Upland Game.
R657-6-1. Purpose and Authority.

(1) Under authority of Sections 23-14-18 and 23-14-19 and in accordance with 50 CFR 20, 2004 edition, which is incorporated by reference, the Wildlife Board has established this rule for taking upland game.

(2) Specific season dates, bag and possession limits, areas open, number of permits and other administrative details that may change annually are published in the guidebook of the Wildlife Board for taking upland game and wild turkey.

R657-6-2. Definitions.

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

(2) In addition:

(a) "Bait" means shelled, shucked or unshucked corn, wheat or other grain, salt or other feed that lures, attracts or entices upland game.

(b) “Baiting” means the direct or indirect placing, exposing, depositing, distributing, or scattering of salt, grain, or other feed that could serve as a lure or attraction for upland game to, on, or over any areas where hunters are attempting to take them.

(c) "CFR" means the Code of Federal Regulations.

(d) "Falconry" means the sport of taking quarry by means of a trained raptor.

(e) "Landowner" means any individual, family or corporation who owns property in Utah and whose name appears on the deed as the owner of eligible property or whose name appears as the purchaser on a contract for sale of eligible property.

(f) "Migratory game bird" means, for the purposes of this rule, American crow, mourning dove, white-winged dove, band-tailed pigeon, and Sandhill crane.

[~~(g)~~]

(g) Pre-charged pneumatic air rifle” means a rifle that fires a single projectile with compressed air released from a chamber:

(i) built into the rifle; and

(ii) pressurized at a minimum of 2,000 pounds per square inch from an external high compression device or source, such as a hand pump, compressor, or scuba tank firing a single:

(A) broadhead tipped bolt or arrow; or

(B) pellet or slug during fall turkey season that:

(I) is .25 caliber or larger;

(II) weighs 18 grains or more; and

(III) is fired at a velocity to produce at least 30 foot-pounds of energy at the muzzle.

(h) "Transport" means to ship, carry, export, import, receive or deliver for shipment, conveyance, carriage, exportation or importation.

([~~h~~]i) "Upland game" means pheasant, quail, chukar partridge, gray partridge, greater sage-grouse, ruffed grouse, dusky grouse, sharp-tailed grouse, cottontail rabbit, snowshoe hare, white-tailed ptarmigan, and the following migratory game birds: American crow, mourning dove, white-winged dove, band-tailed pigeon, and Sandhill crane.

R657-6-6. Authorized Weapons.

(1) A person may not use any weapon or device to take upland game except as provided in this section.

(2)[~~(a)~~] Upland game may be taken with archery equipment, including a draw-lock, a crossbow, a shotgun no larger than 10 gauge, or a handgun. Loads for shotguns and handguns must be one-half ounce or more of shot size ranging between no. 2 and no. 8, except:

([~~i~~]a) migratory game birds may not be taken with a handgun, or a shotgun capable of holding more than three shells, unless it is plugged with a one-piece filler, incapable of removal without disassembling the gun, so its total capacity does not exceed three shells;

([~~ii~~]b) cottontail rabbit and snowshoe hare may be taken with:

(i) any firearm not capable of being fired fully automatic; and

([~~iii)~~]ii) a pre-charged pneumatic air rifle; and

(c) Sandhill crane may be taken with any size of nontoxic shot.

(3) A person may not use:

(a) a firearm capable of being fired fully automatic; or

(b) any light enhancement device or aiming device that casts a visible beam of light.

KEY: wildlife, birds, rabbits, game laws
Date of Enactment or Last Substantive Change: August 9, 2021
Notice of Continuation: May 21, 2020
Authorizing, and Implemented or Interpreted Law: 23-14-18; 23-14-19

R657. Natural Resources, Wildlife Resources.
R657-54. Taking Wild Turkey.
R657-54-1. Purpose and Authority.

(1) Under authority of Sections 23-14-18 and 23-14-19 and in accordance with 50 CFR 20, 2003 edition, which is incorporated by reference, the Wildlife Board has established this rule for taking wild turkey.

(2) Specific season dates, bag and possession limits, areas open, number of permits and other administrative details that may change annually are published in the guidebook of the Wildlife Board for taking upland game and wild turkey.

R657-54-2. Definitions.

(1) Terms used in this rule are defined in [~~Section~~]Utah Code Sections 23-13-2 and 23-19-49.

(2) In addition:

(a) "Bait" means shelled, shucked or unshucked corn, wheat or other grain, salt or other feed that lures, attracts or entices wild turkey.

(b) "Baiting" means the direct or indirect placing, exposing, depositing, distributing, or scattering of salt, grain, or other feed that could serve as a lure or attraction for upland game to, on, or over any areas where hunters are attempting to take them.

(c) "CFR" means the Code of Federal Regulations.

(d) "Falconry" means the sport of taking quarry by means of a trained raptor.

(e) "Fall season permit" means any turkey hunting permit having season dates on or between August 1 to March 14, excluding turkey permits issued pursuant to R657-41 and turkey control permits issued pursuant to R657-69-6.

(f) "Pre-charged pneumatic air rifle" means a rifle that fires a single projectile with compressed air released from a chamber:

(i) built into the rifle; and

(ii) pressurized at a minimum of 2,000 pounds per square inch from an external high compression device or source, such as a hand pump, compressor, or scuba tank firing a single:

(A) broadhead tipped bolt or arrow; or

(B) pellet or slug during fall turkey season that:

(I) is .25 caliber or larger;

(II) weighs 18 grains or more; and

(III) is fired at a velocity to produce at least 30 foot-pounds of energy at the muzzle.

(g) "Spring season permit" means any turkey hunting permit having season dates on or between March 15 to July 31, excluding turkey permits issued pursuant to R657-41 and turkey control permits issued pursuant to R657-69-6.

([~~g~~]h) "Wild Turkey" as used in this rule means a wild, free-ranging turkey and does not include a privately-owned wild turkey, domestic turkey, or wild-domestic hybrids.

R657-54-4. Authorized Weapons.

Wild turkey may be taken only with:

([~~a~~]1) Archery equipment, including a draw-lock, or a crossbow using broadhead tipped arrows or bolts;

([~~b~~]2) a shotgun, firing shot sizes BB and smaller diameter; [~~or~~]
([~~c~~]3) a rimfire firearm during any fall season permit; or
(4) a pre-charged pneumatic air rifle during any fall season permit.

KEY: wildlife, wild turkey, game laws
Date of Enactment or Last Substantive Amendment: August 10, 2020
Notice of Continuation: August 5, 2019
Authorizing, and Implemented or Interpreted Law: 23-14-18; 23-14-1

State of Utah

SPENCER J. COX
Governor

DEIDRE M. HENDERSON
Lieutenant Governor

Department of Natural Resources

BRIAN C. STEED
Executive Director

Division of Wildlife Resources

J. SHIRLEY
Division Director

Date: April 28, 2022

To: Wildlife Board and Regional Advisory Council Members

From: Chad Wilson, Private Lands/Public Wildlife Coordinator

Subject: 2022 Landowner Permit rule (R657 -43) change recommendation

MEMORANDUM

The DWR formed a diverse committee that met nine times over the course of a year to revise the Landowner Permit rule (R657 -43). The rule provides the standards and procedures for how we manage general season landowner buck deer permits and limited entry Landowner Association (LOA) vouchers for deer, elk, and pronghorn. Below is a summary of the proposed changes and other pertinent information in the rule.

General season permits:

- Instead of each region receiving 600 permits, permits will be issued on a unit by unit basis.
- For each unit to receive 3% additional permits from the approved permit numbers for the unit.
- The permits will go into a special landowner draw where qualified applicants can potentially receive a permit.
- Landowner appreciation permits will be combined with the general season permits.
- The draw will take place after the general season draw so landowners will know if they drew a permit.
- If a permit is redeemed, the recipient will lose their preference points.
- The landowner applicant that draws will receive a voucher(s) that can be given to a qualifying individual to redeem.
- A landowner can qualify with 640 acres of deer habitat or 100 acres of cropland that are being used by deer.
- A maximum of five permits can be obtained by a landowner

Limited Entry LOA vouchers:

- More than 50% of qualifying private land must be enrolled in the LOA.
- Vouchers will be determined by a formula: the percentage of private habitat enrolled in the LOA is the percentage of the permits for the unit that will be issued to the LOA as vouchers.
- Public hunter access will be allocated based on drawing number.
- All LOA land is open to hunters who have purchased a private voucher and to public hunters who gained access through the drawing.
- The LOA is responsible for describing how access will be administered and for including all access rules in their application.
- All LOA presidents will need to attend an annual training to help ensure compliance with the rule.

There were two options proposed under the LOA rule.

Option 1

- Vouchers issued to the LOA are valid for the entire unit.
- The number of vouchers the LOA receives is the number of public hunters that will be allowed access to LOA private lands.

Option 2

- Vouchers issued to the LOA are valid for only the private lands in the LOA.
- The LOA retains 80% of the issued vouchers and allows public access to the equivalent of 20%.

If the proposed rule changes pass, we will need to update the drawing permit rule (R657-62) to reflect the new landowner draw and that recipients of landowner permits will lose their preference points.

R657. Natural Resources, Wildlife Resources.
R657-62. Drawing Application Procedures.
R657-62-1. Purpose and Authority.

(1) Under authority of Sections 23-14-18 and 23-14-19, the Wildlife Board has established this rule for drawing applications and procedures.

(2) Specific season dates, bag and possession limits, areas open, number of permits and other administrative details that may change annually are published in the respective guidebooks of the Wildlife Board.

R657-62-2. Definitions.

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

(2) In addition:

(a)“Application” means a form required by the Division which must be completed by a person and submitted to the Division in order to apply for a hunting permit.

(b) "Landowner" means any individual, family or corporation who owns property in Utah and whose name appears on the deed as the owner of eligible property or whose name appears as the purchaser on an executed contract for sale of eligible property.

(c) "Limited entry hunt" means any hunt listed in the hunt tables published by the Wildlife Board and is identified as a premium limited entry hunt or limited entry hunt. “Limited entry hunt” does not include cougar pursuit or bear pursuit.

(d) "Limited entry permit" means any permit obtained for a limited entry hunt, including conservation permits, expo permits and sportsman permits.

(e)(i) "Valid application" means an application:

(A) for a permit to take a species for which the applicant is eligible to possess;

(B) for a permit to take a species regardless of estimated permit numbers;

(C) for a certificate of registration; and

(D) containing sufficient information, as determined by the division, to process the application, including personal information, hunt information, and sufficient payment.

(ii) Applications missing any of the items in Subsection (i) may be considered valid if the application is timely corrected through the application correction process.

(f)"Waiting period" means a specified period of time that a person who has obtained a permit must wait before applying for the same permit type.

(g) “Once-in-a-lifetime hunt” means any hunt listed in the hunt tables published by the Wildlife Board and is identified as once-in-a-lifetime, and does not include general or limited entry hunts.

(h) “Once-in-a-lifetime permit” means any permit obtained for a once-in-a-lifetime hunt by any means, including conservation permits, sportsman permits, cooperative wildlife management unit permits and limited entry landowner permits.

(i) Voucher" means an authorization issued by the division that entitles the designated holder to purchase the hunting permit specified in the authorization.

R657-62-3. Scope of Rule.

(1) This rule sets forth the procedures and requirements for completing and filing applications to receive the following hunting permits and/or certificates of registrations:

(a) Dedicated Hunter certificate of registrations;

(b) limited-entry deer;

(c) limited-entry elk;
(d) limited-entry pronghorn;
(e) once-in-a-lifetime;
(f) public cooperative wildlife management unit;
(g) general season deer, , and youth elk;
(h) limited entry bear;
(i) bear pursuit;
(j) antlerless big game;
(k) sandhill crane;
(l) sharp-tail and greater sage grouse;
(m) swan
(n) cougar;
(o) sportsman; and
(p) turkey.
(q) landowner buck deer

R657-62-9. Preference Points.

(1) Preference points are used in the applicable drawings to ensure that applicants who are unsuccessful in the drawing will have first preference in the next year's drawing.

(2)(a) A preference point is awarded for:

(i) each valid, unsuccessful application applying for a general buck deer, antlerless deer, antlerless elk, doe pronghorn, Sandhill Crane, Sharp-tailed grouse, Greater sage grouse or Swan permit; or

(ii) each valid application when applying only for a preference point in the applicable drawings.

(b) Preference points are awarded by species for:

(i) general buck deer;
(ii) antlerless deer;
(iii) antlerless elk;
(iv) doe pronghorn;
(v) Sandhill Crane;
(vi) Sharp-tailed Grouse;
(vii) Greater sage grouse; and
(viii) Swan.

(3)(a) A person may not apply in the drawing for both a preference point and a permit for the species listed in (2)(b).

(b) A person may not apply for a preference point if that person is ineligible to apply for a permit.

(4) Preference points for the applicable species are forfeited if a person obtains a general buck deer, landowner buck deer, antlerless deer, antlerless elk, doe pronghorn, Sandhill Crane, Sharp-tailed grouse, Greater sage grouse or Swan permit, whether obtained through a division drawing or over the counter, except points are not forfeited if a person obtains one or more of the following:

(a) youth archery buck deer permit;

(b) mitigation permits issued to a landowner R657-44, not including mitigation permit vouchers;

(c) antlerless elk control permits; and

[~~(d) a general landowner buck deer permit or landowner appreciation permit issued pursuant to R657-43.~~]

(5) Preference points are not transferable.

(6) Preference points are averaged and rounded down when two or more applicants apply together on a group application.

(7)(a) Preference points are tracked using social security numbers or division-issued customer identification numbers.

(b) The division shall retain copies of electronic applications from 2000 to the current applicable drawings for the purpose of researching preference point records.

(c) Any requests for researching an applicant's preference point records must be submitted within the time frames provided in Subsection (b).

(d) Any preference points on the division's records shall not be researched beyond the time frames provided in Subsection (b).

(e) The division may eliminate any preference point obtained by fraud, deceit, misrepresentation, or in violation of law.

R657-62-27 Landowner Buck Deer Permits

(1)(a) the division will evaluate draw applications and calculate the number of general season hunting opportunities the landowner qualifies for per rule R657-43.

(b) The applicant will be charged a handling fee for every draw application, up to 5, that is entered into the drawing.

(c) The division will issue vouchers to the landowner based on the drawing results.

(d) The division is not responsible for identifying recipients of the vouchers after vouchers are awarded to a landowner by the drawing process.

(2) For an individual to redeem the drawn voucher, they must:

(a)(i) be the landowner, an immediate family member, or lessee. If the Applicant is a business entity, the person eligible for the permit must be a shareholder, or immediate family member of a shareholder, as designated by the business entity;

(ii) non-shareholder employees of the business entity are not eligible to receive a general season landowner permit;

(b) possess or obtain a valid hunting or combination license;

(c) meet all age requirements, proof of hunter education requirements and youth restrictions as provided in R657-5; and

(d) not already obtained a buck deer permit per R657-62-18.

(3) Any permits remaining after the drawing are available at division offices on a first come, first serve basis.

KEY: wildlife, permits
Date of Enactment or Last Substantive Amendment: March [~~14~~]10, 2022
Notice of Continuation: April 9, 2019
Authorizing, and Implemented or Interpreted Law: 23-14-18; 23-14-19

R657. Natural Resources, Wildlife Resources.
R657-43. Landowner Permits.
R657-43-1. Purpose and Authority.

(1) Under authority of Sections 23-14-18 and 23-14-19, this rule provides the standards and procedures for landowners to qualify for and obtain big game hunting opportunities in recognition of the benefits their private properties provide to wildlife resources in Utah.

(2)(a) The division shall offer a program providing opportunities for general season big game hunts ("General Season Landowner Permits") and a program providing limited entry big game hunts ("Limited Entry Landowner Permits").

(b) The division shall offer buck deer permits under both programs.

(c) The division shall offer buck pronghorn and bull elk permits under the Limited Entry Landowner Permit program only.

(3) The Landowner permit programs are intended to:

(a) provide an incentive for private landowners to manage their lands as quality habitat for public wildlife;

(b) assist and support the division in managing big game populations;

(c) increase private Landowner tolerance of big game on their Private Lands;

(d) increase big game hunting opportunities;

(e) increase and secure public hunting access on participating Landowners' Private Lands;

(f) reduce the division's obligations in responding to and compensating for depredation events occurring on participating Private Lands;

(g) use objective criteria to determine how hunting opportunities are allocated under the programs; and

(h) allocate hunting opportunities in a manner that fluctuates in proportion to variations in public draw permit numbers.

R657-43-2. Definitions.

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

(2) In addition:

(a) "Applicant" means a Landowner applying to participate in the General Season Landowner Permit program or the Limited Entry Landowner Permit program.

(b) "Cropland" means agricultural Private Land that is cultivated and mechanically harvested and upon which the division has determined that migratory deer rely to meet herd management objectives.

(c) "Draw Application" means that application for Permits submitted to the division after the Applicant has been approved to participate in the program.

(d) "Eligible Property" means:

(i) Private Land that provides habitat for deer, elk or pronghorn as determined by the division;

(ii) Private Land that is not used in the operation of a Cooperative Wildlife Management Unit;

(iii) Private Land that is not used in the operation of an elk farm or elk hunting park;

(iv) Private Land in agricultural use as provided in Section 59-2-502 and eligible for agricultural use valuation as provided in Sections 59-2-503 and 59-2-504; and

(v) Private Land having one or more of the following attributes:

(A) for the purpose of receiving general buck deer permits, a minimum of one hundred (100) acres of Private Land that is Cropland, or a minimum of six hundred forty (640) acres of other Private Land that is owned or leased by one Landowner or leased by one landowner within the general season unit hunt boundary or;

(B) for the purposes of receiving a Limited Entry Landowner Permit Voucher, Private Land owned or leased by members of a Landowner Association that is within a limited entry unit.

(e) “Governing Documents” mean the legal documents executed by a Legal Entity Owners that govern the formation, operation, management, rules, duties, responsibilities, decision making and dissolution of such Legal Entity.

(f) “Immediate Family” means a Landowner’s, a Lessee’s, or a Legal Entity Owner’s spouse, children, sons-in-law, daughters-in-law, father, mother, father-in-law, mother-in-law, brothers, sisters, brothers-in-law, sisters-in-law, stepchildren, and grandchildren.

(g) “Landowner” means, for the purposes of this rule, any person or Legal Entity which:

(i) owns Private Land in Utah as evidenced by such deeds vesting title in such Landowner;

(ii) is the purchaser of Private Land pursuant to a recorded contract of sale; or

(iii) is a Lessee of Private Land, being any person or legal entity with a written lease whose terms permit the lessee to be in actual physical control of such Private Land..

(h) “Landowner Association” means a Legal Entity created by Landowners who own Eligible Property within a limited entry unit, which Legal Entity is organized for the purpose of working with the division as outlined in this rule.

(i) “Legal Entity” means an entity such as a corporation, partnership, limited liability company, or trust that is duly organized under the laws of the State of Utah and/or otherwise qualified to do business within the State of Utah.

(k)(i) “Legal Entity Owner” means a person or other Legal Entity which has ownership in a Legal Entity, such as a shareholder of a corporation, a member of a limited liability company, a partner in a partnership, or trustee or beneficiary of a trust.

(l) “Permit” means a hunting authorization purchased from the division by a person who is the holder of a Voucher, pursuant to the terms and authorizations contained in such Voucher.

(n) “Private Land” means, for the purposes of this rule, any real property owned or leased by a Landowner, excluding:

(i) land owned by the state or federal government;

(ii) land owned by a county or municipality;

(iii) land owned by an Indian tribe;

(iv) land enrolled in a Cooperative Wildlife Management Unit under R657-37; and

(v) land where public access for big game hunting has been secured.

(o) “Qualifier Application” means the initial application submitted to the division to determine if a Landowner meets the necessary requirements to participate in the landowner permit program.

(p) "Voucher" means an authorization issued by the division to a Landowner that entitles such Landowner or its permitted transferees (if allowed pursuant to this rule) to purchase a Permit from the division.

R657-43-3. General Season Landowner Permits – Availability and Eligibility.

(1)(a) The division will establish the number of General Season Landowner Permits for buck deer annually by identifying the number of public draw permits available in a unit and allocate an additional three percent (3%) of that number to the program. Vouchers for General Season Landowner Permits for buck deer will be issued through the General Season Landowner Permit draw. Vouchers may only be redeemed by the Landowner or Immediate Family members.

(2) An Applicant must meet the following eligibility criteria to apply for or obtain permits under the General Season Landowner Permit program:

(a) own the minimum quantity of Eligible Property in the proper general season unit boundaries as identified in this rule;

(b) be able to lawfully obtain and use a hunting license and big game permit;

(c) submit a complete application by the deadline

(d) participate in the General Season Landowner Permit drawing; and

(e) pay necessary fees.

(3)(a) An Applicant may apply for General Season Landowner Permits according to the following limitations:

(i) one (1) General Season Landowner Permit may be issued for six hundred forty (640) acres of Eligible Property owned or leased by the Applicant;

(ii) one (1) additional General Season Landowner Permit may be issued for each additional six hundred forty (640) acres of Eligible Property owned or leased by the Applicant; and

(iii) one (1) General Season Landowner Permit may be issued for one hundred (100) acres or more of Cropland owned or leased by the Applicant.

(b) Only one (1) General Season Landowner Permit may be issued to a Landowner based on Cropland acreage, regardless of whether that Applicant owns or leases more than one hundred (100) acres of Cropland.

(c) Only one (1) General Season Landowner Permit may be issued per parcel of Eligible Property.

(e) General Season Landowner Permits cannot be sold and may only be transferred to Immediate Family members.

(f) An Applicant may apply for and receive a maximum of five (5) General Season Landowner Permits in a single hunt year.

(4) Vouchers for General Season Landowner Permits will be issued following the draw and are valid for Landowners and their Immediate Family members.

R657-43-4. General Landowner Buck Deer Permits – Applications, Drawing, and Permit Use.

(1) Qualifier Applications for General Season Landowner Permits are available from division offices and on the division website prior to draw.

(2)(a) Only one (1) Applicant may submit a Qualifier Application for the same parcel of Private Land.

(b) The division may reject all Qualifier Applications if more than one (1) application is received for the same parcel of Private Land.

(c) Where the Landowner's Private Land is in more than one (1) general unit hunt boundary area, the Landowner may select only one (1) of those units from which to receive the Permit.

(d) A Landowner may only submit one (1) Qualifier Application, regardless of whether there are:

(i) multiple individual persons owning the Eligible Property;

(ii) multiple Legal Entity Owners in the Legal Entity owning the Eligible Property; or

(iii) similar instances of split ownership of the Eligible Property.

(3) Qualifier Applications for General Season Landowner Permits must include:

(a) total acres of Eligible Property within the respective general season unit hunt boundary area;

(b) the signature of all Landowners having an interest in the Eligible Property;

(c) a digital map of the Eligible Property indicating the parcel numbers, county, and general season hunt unit within which it is located;

(4) Qualifier Applications must be submitted to the regional division office with management responsibilities where the Eligible Property is located.

(5) the signatures of the Landowners on the Draw Application serve as an affidavit by such Landowner certifying ownership of the Eligible Property enrolled.

(6)(a) After Qualifier Applications are reviewed and approved, Draw Applications will be submitted pursuant to R657-62-27.

(b) When submitting the Draw Application, the Applicant will select the season and weapon type.

(7) Any person issued a General Season Landowner Permit under this rule is subject to all season dates, weapon restrictions, and any other regulations, specifically R657-5, and fees as provided in the guidebook of the Wildlife Board for taking big game.

R657-43-5. Limited Entry Landowner Permits – Availability and Eligibility.

(1) Landowners in a limited entry unit may join together to form a Landowner Association for participation in the Limited Entry Landowner Permit program. In order to qualify as a Landowner Association, participating Landowners must:

(a) own more than fifty percent (50%) of the Private Lands that are Eligible Property within the limited entry herd unit;

(b) form a Landowner Association;

(c) limit participation to Private Lands within a limited entry hunt unit serving as habitat for that species;

(d) the president of the Landowner Association must participate in a division training annually.

(2) The division will establish the number of limited entry permits available under the program on an annual basis by:

(a) identifying the number of public draw permits in a unit for the previous hunt year;

(b) identifying the total acreage of Private Land in a unit enrolled in the Landowner Association;

(c) calculating the percentage of habitat in the unit represented by the Landowner Association by dividing the habitat acreage represented by the Landowner Association by the habitat acreage in the whole unit; and

(d) applying that percentage to the total number of available public draw permits from the previous year to determine the number of permits to be allocated to the Landowner Association.

(3) To form a Landowner Association, Landowners must:

(a) elect a president;

(b) enter into Governing Documents signed by all participating Landowners that:

(i) agree to the formation of a Landowner Association for the purposes of participating in the program;

(ii) establish membership qualifications;

(iii) identify any yearly dues, if any, necessary to participate and how those funds will be utilized;

(iv) establish a distribution plan for allocating Vouchers or revenue from Vouchers to members;

(v) describe the process for adding and removing members in a fair and impartial process;

(vi) describe how the Landowner Association will provide notice of upcoming meetings and how members can participate

(vii) establish how voting and decisions on behalf of the Landowner Association will be made;

(viii) establish rules and guidelines outlining permit holder conduct on Landowner Association property

(ix) describe how the Landowner Association will complete compliance requirements for the program;

(x) describe how the members will elect a president to represent the landowner association and the president’s length of term;

(xi) include a written waiver from each participating Landowner of all depredation claims due to big game damage during the term of such Landowner’s membership in the Landowner Association;

(xii) include a written agreement from each participating member to allow free public access onto all participating Landowner’s Private Lands as required by R657-43-5(5) and R657-43-5(6); and

(xii) other items deemed necessary and appropriate to administer the Landowner Association.

(4) Limitations on the eligibility of Private Lands in Landowner Associations:

(a) Private Lands enrolled in a Cooperative Wildlife Management Unit are not eligible to participate in a Landowner Association under this rule;

(b) public and state lands are not eligible to be included in a Landowner Association;

(c) only Private Lands that qualify as Eligible Property will be considered for Limited Entry Landowner Permits;

(d) only one (1) Landowner Association, per species, may be formed for each limited entry unit; and

(e) a Landowner or Landowner Association may not restrict legally established passage through Private Land to access public lands for the purpose of hunting.

(5) A Landowner Association may choose one of two Voucher options during the term of its certificate of registration:

(a) Option 1.

(i) The Landowner Association will be issued Vouchers valid for the entire limited entry hunting unit; and

(ii) an equivalent number of public hunters to the number of Vouchers received by the Landowner Association shall be provided complete access to hunt all of the Landowner Association's Private Lands at no charge for the species during the season dates identified on the Limited Entry Landowner Permit.

(iii) The division will notify the lowest draw numbers of public hunters in that unit who will be given access to the Landowner Association's Private Lands pursuant to this section.

(b) Option 2.

(i) The Landowner Association will be issued Vouchers valid only for Private Lands enrolled in the Landowner Association;

(ii) the number of Vouchers allocated to a Landowner Association will be initially calculated using the formula in Subsection (2), then reduced by twenty percent (20%), rounded up to the nearest whole number; and

(iii) an equivalent number of public hunters to the number of Vouchers reduced by twenty percent (20%), rounded up to the nearest whole number shall be provided complete access to hunt all Landowner Association's Private Lands at no charge for the species and during the season dates identified on the limited entry permit.

(iv) The division will notify the lowest draw numbers of public hunters in that unit who will be given access to Landowner Association's Private Lands pursuant to this section

(c) Vouchers are not valid for:

(i) multi-season hunting opportunities; or

(ii) late season limited entry buck deer permits on a general season unit.

(6) (a)(i) Public draw permit holders specified in paragraph 5 abovewill have access to all enrolled Landowner Association lands for the entirety of the hunt;

(ii) The Landowner Association will be responsible for ensuring those public draw permit holders identified in paragraph 5 above are given access to all private lands.

(b) The Landowner Association must provide a written copy of it's guidelines used to regulate a permit holder's conduct as a guest on the Landowner Association land.

R657-43-6. Limited Entry Permits – Application.

(1) Applications for a limited entry Landowner Association certificate of registration are available at division offices and on the division website.

(2) Applications must include:

(a) total acres providing habitat for the species in question that are participating in the Landowner Association;

(b) signature of each of the Landowners within the Landowner Association including acres owned, with said signature serving as an affidavit certifying ownership;

(c) a copy of the Landowner Association's Governing Documents;

(d) a digital map of the Private Lands participating in the Landowner Association and indicating the Private Lands which serve as habitat for the species in question; and

(e) a non-refundable handling fee.

(3) The division may aid the Landowner Association in preparing the application, but the division is not responsible for errors in the application or a failure to properly or completely submit an application.

(4) Applications must be completed and submitted to the regional division office managing the limited entry hunting unit where the Landowner Association is located by September 1 of the year prior to when the hunting is to occur.

(5) The division shall review the application and determine its completeness and formulate a recommendation.

(c) The division may reject any application that is incomplete or completed incorrectly.

(d) Applicants must notify the division in writing regarding any changes to the substance of their application while it is under consideration, or it may be considered incomplete or incorrect.

(6) After evaluating the application, the Wildlife Board shall consider:

(a) the contents of the application;

(b) the division's recommendation; and

(d) any violations of the provisions of Title 23, Wildlife Resources Code by the Landowner Association, its operator, its president, or any of its members that would reasonably influence whether the applicant should be approved to participate in the program.

(7) Upon receiving the application and recommendation from the division, the Wildlife Board may:

(a) authorize the issuance of a three-year certificate of registration allowing the Landowner Association to operate; or

(b) deny or partially deny the application and provide the Landowner Association with reasons for the decision.

(8)(a) The certificate of registration for a Landowner Association must be renewed every three (3) years through the process outlined in this rule.

(b) In evaluating a certificate of registration renewal application, the Wildlife Board shall consider:

(i) the Landowner Association's fulfillment of public access requirements during the term of the prior certificate of registration;

(ii) the Landowner Association's fulfillment of antlerless harvest access and success, if a condition of its prior certificate of registration;

(iii) the contents of its renewal application; and

(iv) a recommendation provided by the division.

(8) The Wildlife Board may deny a certificate of registration application or renewal application if:

(a) the Landowner Association has failed to supply the necessary documentation specified in the paragraph above;

(b) a member of the Landowner Association has been convicted of a wildlife violation;

(c) the president of the Landowner Association has engaged in conduct that results in the conviction of, a plea of no contest to, or a plea held in abeyance to a crime of moral turpitude, or any other crime that when considered with the functions and responsibilities of a Landowner Association president bears a reasonable relationship to their ability to responsibly operate a Landowner Association;

(d) the Landowner Association has failed to abide by the terms of their Governing Documents in a manner that undermines the purposes of the program; or

(e) the Landowner Association's president or its designee fails to complete mandatory annual training.

(9)(a) An applicant may appeal a denial of an application, renewal application, or request for certificate of registration amendment by submitting an appeal to the division Director.

(b) An appeal must be submitted to the division within thirty (30) days of receiving the notice of denial.

(10) If a Landowner Association violates any provision of this rule, Title 23 of the Utah Code, or any other proclamation or guidebook by the Wildlife Board, the Division may suspend or revoke the Landowner Association certificate of registration pursuant to R657-26.

(11)(a) The division shall annually review the permit types, numbers, and seasons authorized by a certificate of registration issued under this section and implement modifications for the following hunt season.

(b) Landowner Associations will work cooperatively with the Division to achieve desired management directives, including antlerless management objectives.

(12)(a) A Landowner Association may petition to amend a certificate of registration upon submitting a written request to the regional division office where the Landowner Association's Private Land is located.

(b) A Landowner Association shall submit an application to amend their certificate of registration for changes in:

(i) the Landowner Association's Governing Documents;

(ii) acreage;

(A) If during a term of its certificate of registration, a Landowner Association's Eligible Property decreases but remains at least equal to fifty percent (50%) of the

Eligible Property in the limited entry unit, such Landowner Association shall submit an amendment outlining the new acreage to update their current certificate of registration.

(B) If during a term of its certificate of registration, a Landowner Association's Eligible Property decreases and equals less than fifty percent (50%) of the Eligible Property in the limited entry unit, such Landowner Association's certificate of registration shall be deemed non-compliant and shall terminate at the end of the certificate of registration's term; provided, however, such Landowner Association may reapply for a certificate of registration as a new application.

(iii) Private Land ownership; or

(iv) any other matter related to the management and operation of the Landowner Association not originally included in the certificate of registration.

(c) If approved, an amendment to the certificate of registration shall be issued in writing.

(13)(a) Upon approval of the certificate of registration, Vouchers may be issued and redeemed to purchase Limited Entry Landowner Permits from division offices.

(b) The fee for any Limited Entry Landowner Permit is the same as the cost of similar limited entry buck deer, bull elk, or buck pronghorn limited entry permits.

(c) A Landowner receiving a Voucher for a Limited Entry Landowner Permit may sell or otherwise transfer such Voucher to any legal hunter so long as that person possesses or obtains a Utah hunting or combination license.

(d) Any recipient of a Limited Entry Landowner Permit must follow the season dates, weapon restrictions, and any other regulation governing the taking of big game as specified in R657-5 and the guidebook of the Wildlife Board for taking big game.

(e) Nothing in this rule permits the take of more than one (1) buck deer, one (1) bull elk, or one (1) buck pronghorn during any one year.

KEY: wildlife, landowner permits, big game seasons
Date of Enactment or Last Substantive Amendment: February 9, 2015
Notice of Continuation: February 27, 2017
Authorizing, and Implemented or Interpreted Law: 23-14-18; 23-14-19

Gordon Creek

Wildlife Management Area

Habitat Management Plan

DRAFT

Southeastern Region Habitat Section

February 2021

Utah Department of Natural Resources
Division of Wildlife Resources

Executive Summary

Gordon Creek Wildlife Management Area
Habitat Management Plan
February 2021

Primary Purpose of WMA:
Protect habitat for wildlife species with an emphasis on wintering big game. Provide recreational opportunities consistent with the wildlife values of the WMA.

Wildlife Species:
The primary species benefiting are mule deer and elk. Numerous other species also benefit from the WMA's including moose, black bear, mountain lion, furbearers (bobcat, etc.), turkeys and upland game (chukar, pheasant, mourning dove, rabbit, etc.), raptors (bald eagle, etc.), fish (sterile brook trout, etc), neotropical migratory birds and small mammals.

Habitat Conditions and Challenges:
The condition of the WMA has been degraded by historic grazing and drought. The area is currently experiencing pinyon-juniper expansion, though numerous treatments have occurred to slow the expansion. Increasing canopy cover of trees is causing a decline in the production and vigor of understory herbaceous plants and shrubs. Areas with increasing pinyon-juniper cover will be evaluated for thinning. Thinning activities will take into account the importance of pinyon and juniper as thermal cover for big game species, and thinning projects will be planned to ensure adequate pinyon-juniper cover is left on-site to provide this important habitat requirement. Noxious weed problems include infestations of musk thistle and whitetop.

Grazing is used as a management tool to reduce fire danger and release browse species for wintering big game. The grazing system is a high-intensity, short-duration rest rotation system during spring and early summer.

Access Plan:
The WMA is open to public access via county roads. Some UDWR roads exist that are subject to seasonal closure from (December 1 – April 15). Seasonal closures will be implemented on UDWR roads as needed to protect the winter range for big game species and wintering animals. Motorized vehicle traffic will be confined to existing roads. Roads will be maintained as needed to maintain public access. Mountain biking activities are also confined to existing roads. Unauthorized user-created roads and trails are not permitted and will be closed and rehabilitated.

Maintenance Activities:
Maintenance activities include annual fence maintenance, road maintenance as needed, sign placement and repair, noxious/invasive weed control, and the planting and irrigation of crops for wildlife. These activities are conducted on an "as needed" basis.

Habitat Improvements:
Areas with pinyon-juniper encroachment will be treated to protect the herbaceous plants and shrub understory. Shrub transplanting and/or seeding will take place if necessary to enhance available browse forage. Stream restoration, including erosion control structures, will be conducted enhancing the stream and associated riparian woody species. Upland game opportunities will continue through planting food/cover plots. Perimeter and interior fences will be maintained and improved to accomplish the grazing management plan. Water developments will be maintained to provide water for permitted livestock.

TABLE OF CONTENTS

Property Description 6
Location 6
Encumbrances 9
Minerals 9
Easements 10
Grazing 10
Land Acquisition History 10
Acquisition Dates 10
Mechanism of Purchase 11
Historic Uses of the WMA 12
Purpose of UDWR Ownership 12
Conservation Partners Involved in Acquisition 12

PROPERTY INVENTORY 13
Existing Capital Improvements 13
Roads 13
Fence 13
Facilities and Equipment 13
Water Rights 14
Cultural Resources 15
Important Fish and Wildlife Habitats 15
Utah Wildlife Action Plan 16
General Conditions of Habitat 17
Human Use Related Problems 18
Adjacent Land Uses and Potential Impacts 18

MANAGEMENT GOALS AND OBJECTIVES 19

STRATEGIES FOR PROPERTY MANAGEMENT 19
Development Activities 19
Establish Property Boundary/Fence 19
Sign Needs 20
Public Access 20
Annual Maintenance Activities 21

Compatibility of Proposed Uses with Local Government Planning and Zoning Ordinances 21

STRATEGIES FOR HABITAT MANAGEMENT 21

Habitat Improvement Plan 22

Maintain Previous Restoration Projects 23

Water Developments 23

Access Management Plan 23

Fire Management Plan 23

Wood Products 24

Livestock Grazing Plan 24

Livestock Trespass 24

SUMMARY STATEMENT OF PROPOSED USES 24

MONITORING AND EVALUATION 25

ATTACHMENTS 25

APPENDICES 30

Appendix A 30

Appendix B 32

GORDON CREEK WILDLIFE MANAGEMENT AREA

HABITAT MANAGEMENT PLAN

BACKGROUND INFORMATION

Property Description

Location

The Gordon Creek Wildlife Management Area (WMA) is located in western Carbon County, Utah. It comprises approximately two percent of the landmass of the County. It is centered approximately 10 air miles from Price, Utah. Primary access to the northern portion of the WMA is available via Consumers road U-139. Access to the southern portion of the property can be provided through Gordon Creek road to Porphyry Bench road.

The WMA includes 22,690 acres however this includes other land management agencies such as the Bureau of Land Management (BLM) and State Institutional Trust Lands Administration (SITLA), Utah Division of Wildlife Resources (UDWR) manages 15,656 acres of the WMA. This plan will focus on the property managed by the UDWR. Elevation on the property ranges from 6,500 feet to 8,000 feet.

The legal description for the Gordon Creek WMA is:

Great Western Townsite
Township 12 South Range 8 East Section 27 (west half) and 28 (northwest quarter)
- Block 1: All
- Block 2: All
- Block 3: Lots 1-19, 20, 21, 22, 23, 24, 25, 26, 27-48 (All)
- Block 4: All
- Block 5: All
- Block 6: Lots 1, 2, 3-22, 23, 24, 25-48 (All)
- Block 7: Lots 1-32
- Block 8: All
- Block 9: All
- Block 10: All
- Block 12: All
- Block 13: Lots 1-41, 44-48
- Block 14: Lots 1-32, 34-48
- Block 15: Lots 1-24, 25, 26, 27-48 (All)
- Block 16: Lots 1, 2-24, 25, 26, 27, 28, 29, 30, 31-48
- Block 17: All
- Block 18: All
- Block 19: Lots 1-44, 45, 46

Block 20: Lots 1, 2, 3-26, 27, 28-48
Block 21: All
Block 22: Lots 1-20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30-46
Block 23: Lots 1-15, 16 (1/2), 17 (1/2) 18, 19, 20-23, 26-46
Block 24: Lots 1-46
Block 25: Lots 1-27, 20-23, 25-46
Block 26: Lots 1-3, 7, 8, 12, 13, 14, 17, 18, 20, 22-43
Block 27: All
Block 28: Lots 1-9, 11 (E2), 12,13-36
Block 29: Lots 1-17, 18, 19, 20-26, 28-46
Block 30: Lots 1-19, 20, 21, 22, 23, 24, 25-27, 29-46
Block 31: Lots 1-46
Block 32: Lots 1-21, 22, 23-46
Block 33: Lots 1-46
Block 34: Lots 1-19, 21-46
Block 35: Lots 1-25, 28-46
Block 36: Lots 1-46
Block 37: Lots 1-46
Block 38: All
Block 39: All
Block 40: All
Block 41: All
Block 42: All
Block 43: All
Block 44: All
Block 45: All
Block 46: All
Block 47: All
Block 48: All
Block 49: All
Block 50: All
Block 51: All
Block 52: All
Block 53: All
Block 54: All
Block 55: All
Block 56: All
Block 57: All
Block 58: All
Block 59: All

Township 13 South, Range 8 East, Salt Lake Base and Meridian

Section 7	Excluding NE4NE4
Section 13	W2
Section 18	All

Section 19	Excluding NE4NE4
Section 20	W2, NE4NE4
Section 21	E2SW4, W2SE4, see disposal 143689, SE4SE4
Section 22	W2, W2SE4
Section 25	E2E2,SW4NE4, NW4SE4
Section 26	NE4SE4, S2SW4
Section 27	All Blocks, see deed 106536, NE4NW4, NW4NE4, see deed 114495, SE4NE4
Section 28	All Blocks, SW4NE4, see deed 106536 and disposal 143689
Section 29	W2, N2SE4, SE4SE4
Section 31	SW4SE4, Lot 4, SE4SW4
Section 33	W2NE4, SE4SE4, W2, E2NE4, N2SE4, SW4SE4 (All)
Section 34	NE4SE4, N2, N2SW4, SW4SE4, S2SW4, S2SE4 (All)
Section 35	NW4, S2NE4, SE4, E2SW4, N2NE4
Section 36	All

Township 13 South, Range 9 East, Salt Lake Base, and Meridian

Section 28	S2SW4
Section 29	S2SE4
Section 30	Lots 1, 2, 3, 4, E2NW4, S2NE4, E2SW4, SE4
Section 31	All (less 9 acres of ROW National Railway Co. and Carbon County Road)

Township 14 South, Range 8 East, Salt Lake Base, and Meridian

Section 1	Lots 3, 4, S2NW4
Section 2	Lots 1-7, S2NE4, SE4NW4, E2SW4, SE4 (All)
Section 3	Lots 1, 2, 3, 4, S2N2, SW4SW4, NW4SW4, S2SW4, SW4SE4, N2SE4,SE4SE4,NE4SW4 (All)
Section 4	Lots 1, 2, 3, 4, S2SW4, SW4SE4, S2N2, N2S2, SE4SE4 (All)
Section 5	All (except N2N2)
Section 6	All
Section 7	Lots 1, 2, 3, 4, E2NW4, NW4NE4, E2SW4, SE4, S2NE4
Section 8	E2, SW4NW4, W2SW4
Section 9	NE4NE4, W2, NW4NE4, S2NE4, SE4 (All)
Section 10	NW4NW4, NE4, NE4SW4, S2NW4, S2 (All)
Section 11	Lots 1, 2, 3, 4, NW4NE4, S2NE4, E2NW4, E2SW4, SE4, NE4NE4 (All)
Section 12	W2NW4, SE4NW4
Section 15	N2NW4
Section 16	N2, W2SE4, SW4
Section 17	W2W2, NE4, N2SE4
Section 18	All
Section 19	Lots 1, 2, 3, 4, E2NW4, E2SW4, SE4, S2NE4, NW4NE4
Section 20	N2NE4, W2
Section 21	NW4NW4
Section 29	N2SE4, SW4SE4, W2

Township 14 South, Range 9 East, Salt Lake Base, and Meridian

Section 16 SE4

Encumbrances

The properties making up the Gordon Creek Wildlife Management Area were acquired from numerous entities in a variety of ways from the 1960's-2013. Many of the acquired parcels had prior existing encumbrances; new ones were often added when the properties were transferred to the UDWR. The list for each block or section is extensive; however, encumbrances have been summarized in Appendix A. Information about encumbrances on each parcel may not be complete and will have to be researched in the Warranty Deeds and Property Titles.

Many of the previous property owners retained coal, oil, gas, and mineral rights when they were transferred to the UDWR. These rights include egress and ingress for exploration and removal of material. Some previous owners retained water rights and their associated infrastructure (ditches and canals). Particular language for some of these rights is described in patents from the Bureau of Land Management (BLM). Several rights-of-way and easements exist on parcels, particularly those associated with the Great Western Townsite. Some of these include old railroad rights-of-way, pole line easements in favor of Utah Power & Light Company, National Coal Railway Company, and some oil, gas, and hydrocarbon leases, and public road rights-of-way (county and state highway).

A 10-foot right-of-way was granted to Utah Power & Light Company from the UDWR on December 17, 1976. The right-of-way occurs in Township 13 S. Range 8 East, Salt Lake Base and Meridian, Sections 22, 27, 28, 33.

An easement agreement was entered into on May 10, 1982, between the UDWR and Utah Power & Light Company to obtain a 130-foot wide right-of-way in T 13 South, Range 8 East, Salt Lake Base and Meridian, Sections 21, 28, 33, and T 13 South, Range 8 East, Sections 3, 4, 10, and 15. However, the term of the easement was a period of 30 years and would have expired in 2012. The easement was also subject to Federal Aid approval.

An agreement and right-of-way easement for a natural gas pipeline was made between the UDWR and Questar Pipeline Company now Dominion Energy for an easement for the 104 Pipeline Route subject to compliance with State Rule R657-28 (Use of Division Lands). The term of the easement was for 30 years from June 29, 2001. An easement 50 feet in width is situated in Township 12 South, Range 8 East, Salt Lake Base and Meridian, Sections 33, 34, 35, 36.

<u>Minerals</u>

The majority of the minerals were reserved by the previous owner when the land was acquired by the UDWR. Minerals reserved are listed by deed number in Appendix A however each deed and title should be referenced for accuracy.

Currently, there are active gas wells on the WMA managed by several different operators. This consists of twelve gas wells that are either producing or shut-in and one injection well for produced water. There are also five wells that are plugged and abandoned. The majority of these wells were developed during SITLA ownership, with a land exchange in 2009 the UDWR acquired them and inherited the existing Surface Use Agreement. The surface use agreement for existing infrastructure reflects SITLA's requirements, any new development will be subject to Administrative Rule R657-28, Use of Division Lands.

Easements

Currently, there are several easements on the WMA that are listed below. Applications for new easements are held to Administrative rule R657-28 Use of Division Lands.

Easements on the WMA include the following:

- #700188 Questar Pipeline Company April 23, 1998
- #700202 PacifiCorp, d.b.a. Utah Power and Light June 1, 1998
- #701624 State of Utah School and Institutional Trust Lands June 28, 2012
- #701556 Thunderbird Energy Company
- #700162 River Gas Corporation
- #MUL0106EA003 Questar Pipeline Company

Grazing

Encumbrances in relation to grazing include a livestock trailing authorization which allows livestock operators to trail livestock across the WMA when going to and coming from summer pasture. This does not include allowing livestock to disperse and graze across the WMA. Operators are required to contact the UDWR at least 24 hours prior to trailing. Trailing may be done on horseback or on foot. ATVs and other motorized vehicles may only be used on the road constituting a trailing right. The WMA may be accessed by foot or on horseback when searching for stray or lost livestock.

Land Acquisition History

Acquisition Dates

A series of acquisition transactions from numerous individuals began with the purchase of the Migliore property in 1960. Several acquisitions have occurred since, with several inholdings still existing within the WMA. The acquisition history is listed as follows:

Year	Type	Deed ID	Grantor	Acres (round)
1960	Quitclaim Deed	91335	Milgiore+	159
1962	Warranty Deed	106536	Oman	3851
1963	Patent	104826	USA-BLM	529
1964	Patent	105333	USA-BLM	85
1966	Warranty Deed	112324	Ritzakis	1191
1967	Patent	113107	USA-BLM	665
1967	Warranty Deed	113856	Patterick+	121
1967	Warranty Deed	114495	Storrs	933
1969	Warranty Deed	118244	Powell	159
1970	Patent	119700	USA	655
1970	Patent	119860	USA	2330
1977	Warranty Deed	142306	Calvin K. Jacob and Sons' Partnership	163
1977	Warranty Deed	143642	Stamatakis	378
1982	Patent	162606	State of Utah	674
1999	Quitclaim Deed	76534	Plateau Mining Corporation	41
2000	Quitclaim Deed	79054	Farrell	0.1
2001	Warranty Deed	89146	Stamatakis	306
2001	Warranty Deed	97195	Stamatakis	41
2009	Patent	803854	SITLA	2650
2012	Patent	815596	SITLA	684
2013	Patent	818580	General Services Administration-SITLA	40

Mechanism of Purchase

The majority of the acquisitions have involved federal grants through the Federal Aid to Wildlife Restoration Program, often referred to as the Pittman-Robertson or P-R Act, which authorizes federal participation in cooperative wildlife restoration projects with state wildlife agencies.

Other parcels were acquired through trades with State Institutional Trust Lands Administration (SITLA) and General Services Administration (GSA). GSA properties are subject to Public Law 99-587 where if lands are exchanged they must be comparable in terms of wildlife. If they cease to be used for the purposes of wildlife, they will be reverted to the United States. Attachment 2 is a map showing the parcels where federal funds were used and the UDWR is required to comply with National Environmental Policy Act (NEPA) guidelines when considering actions. This should not be considered a final map and UDWR records should be referenced for accuracy. The United States Fish and Wildlife Service (USFWS) is the responsible party for issuing the record of decision with regards to proposed actions on these sections of the WMA.

Historic Uses of the WMA

Carbon County has a long history of coal mining, with coal mines opening near the WMA as early as 1924. The Great Western Mine located on the north fork of Gordon Creek was mined by residents of Coal City, located on the WMA, which George A. Storres tried developing, however, this city was abandoned by the 1950s. Some of the buildings from Coal City can still be seen on the WMA. Mining activity continued up to 2012 when the last active mine (Horizon Mine) was closed.

The WMA was also used for livestock grazing and some limited farming activities. Many historic trailing permits are still used to move livestock through the WMA.

Purpose of UDWR Ownership

The primary objectives of all UDWR Wildlife Management Areas are to conserve and protect wildlife populations and habitat, and to provide hunting, angling, and wildlife viewing access to the public where we can. Other incompatible uses could be limited. Gordon Creek WMA was acquired primarily to protect, preserve, and enhance critical big game winter range, and to reduce crop depredation by mule deer and elk on private property. According to the Deer Herd Unit Management Plan 16BC/12 and 16A September 2020, the habitat management objective is to maintain or improve mule deer habitat on the unit by protecting, maintaining, and enhancing existing crucial habitats. The plan also states that one of the management strategies is to improve, protect, and restore sagebrush steppe habitat. This WMA allows the UDWR to carry out these types of activities. The WMA also provides habitat for a variety of other wildlife species and provides recreational opportunities for the public including hunting, hiking, and wildlife viewing.

Conservation Partners Involved in Acquisition

The U.S. Fish and Wildlife Service, through its federal aid program, has been a major partner in acquiring the WMA. Land trades have also been conducted with SITLA who traded portions of this WMA for the Range Creek property in 2009 and GSA due to the Lee Kay property exchange in 2013.

PROPERTY INVENTORY

Existing Capital Improvements

Roads

Several categories of roads exist on the WMA including but not limited to county roads that are open year-round, UDWR roads that may be subject to seasonal closure from December 1 to April 15, and roads that are open to authorized vehicles only. UDWR reserves the right to close UDWR roads either seasonally or permanently to align with the management goals laid out within this plan. A map listing roads and what category they are can be found in Attachment 4.

Fence

Much of the existing fencing was present when private inholdings were acquired and the WMA was assembled. Since the formal designation of the area, major fencing projects have included the Forest Boundary in 2014, Bob Wright fields in 1985 and again in 2014, the lower fields in 1983, and the cost-sharing on the J. Stamatakis property in 1977.

Fences along the consumer's Road right-of-way remain primarily net wire, due to the traditional trailing of sheep to and from Privately-owned lands west of the area. In an attempt to make this fence more wildlife-friendly, rails have been installed or the top wire raised in an attempt to reduce entanglement.

Facilities and Equipment

Facilities on the WMA are fairly limited. Next to the "upper fields" there is a pit toilet that was installed and is maintained by the county.

The only equipment that is associated directly with the property would consist of the irrigation systems both at the "Bob Wright fields" and the "upper fields". This consists of diversion structures, buried pipelines, and surface irrigation equipment. This is used for raising crops for wildlife on the property. The UDWR has a special use permit with the Forest Service for the Bob Wright Stream Diversion which includes a pipeline right-of-way 20 feet wide covering 0.2 acres in T 14 S., R7 E. Section 1 E2. This permit will expire on December 31, 2049. The other stream diversion to irrigate the upper fields is located in T 13 S., R 8 E. Section 21 SW4.

There is a corral located in T 13 S. R 8 E. Section 27 (SE4SE4) and section 34 (NE4NE4). There was a special use permit issued to Gordon Creek Grazers, LLC that allowed the permittees to construct and maintain such corrals for gathering, holding, sorting, loading, and handling livestock. This includes holding pens, working pens, and a truck loading and turnaround area. There is a cooperative agreement between the UDWR and the Association for management of

these corrals. The corrals are owned by the UDWR and are available for use by the UDWR to control trespass livestock on the property.

There is an additional corral near the Great Western Townsite that was acquired in 2001 in a land purchase agreement between the UDWR, and the Stamatakis brothers (Joel, Pete, and Steve). The terms of this agreement included the Grantors (Stamatakis brothers) having access to the corral. The use of this corral should be verbally communicated to the habitat manager. Use of the corral is allowed until 2026 or until the corral no longer exists.

A roof structure was constructed in 2019 in the area referred to as the "upper fields" to store equipment and other supplies. All other buildings on the WMA are considered cultural resources and should not be disturbed or used for storing equipment.

Water Rights

The irrigation rights on the property are used to irrigate the "Bob Wright fields" as well as the "upper and lower fields". Water readings are taken at both diversions and reported to the water master. UDWR has several 1874 1st class water rights. In years of low water availability, UDWR splits the water with the lower water users. UDWR has the right to 42 percent of the water while the lower water users receive the other 58 percent.

91-777 (part of the Gordon Creek & Tributaries Delivery Schedule)

- Source No. Fork of Gordon Creek
- 1874 1st class right
- When water levels are below 6.649 cfs UDWR is allocated 42% of the water with a 1st class right.
- The right is for 1.570 cfs or 360-acre feet.

91-774 (part of the Gordon Creek & Tributaries Delivery Schedule)

- Source Bob Wright Creek
- 1874 1st class right.
- When water levels are below 6.649 cfs UDWR is allocated 42% of the water with a 1st class right. The right is for 1.050 cfs limited to 63 acres

91-776 (part of the Gordon Creek & Tributaries Delivery Schedule)

- Source Trail Canyon Creek
- 1874 1st class right.
- When water levels are below 6.649 cfs UDWR is allocated 42% of the water with a 1st class right.
- The right is for 0.176 cfs

91-778 (part of the Gordon Creek & Tributaries Delivery Schedule)

- Source No. Fork of Gordon Creek
- 1876 2nd class right
- The right is for 0.150 cfs

91-775 (part of the Gordon Creek & Tributaries Delivery Schedule)
- Source Bob Wright Creek
- 1876 2nd class right
- The right is for 0.176 cfs

91-779 (part of the Gordon Creek & Tributaries Delivery Schedule)
- Source Transmountain Beaver Creek Rediversion North Fork of Gordon Creek
- 1893 3rd class right
- The right is for 2.0 cfs

91-121 (part of the Gordon Creek & Tributaries Delivery Schedule)
- Source Bob Wright Creek
- 1939 9th class right
- The right is for 7.0 cfs

Limited to 139.1 acres
The following list of water right identification numbers are all 1869 Priority with a use type of stock water: 91-257, 91-396, 91-397, 91-398, 91-554, 91-807, 91-1826, 91-1827, 91-2390, 91-2393, 91-3073, 91-3096, 91-3098, 91-3214, 91-3216, 91-3217, 91-3714, 91-3715, 91-3716, 91-4399, 91-4403, 91-4813, 91-4979.

91-4995
- 1874 Priority
- Use type - stock water

91-3703
- 1902 Priority
- Use type - stock water

Cultural Resources

Numerous cultural resources occur on the property related to historical mining in the area including buildings, water development, railroad grades, etc. A brief history of Coal City, established in 1885 and now a ghost town, can be found in Appendix B. The entire WMA has not been surveyed for cultural resources.

Important Fish and Wildlife Habitats

The WMA is primarily composed of sagebrush steppe rangelands, pinyon-juniper woodlands, mountain brush, and open cliff faces. These habitats provide a crucial winter range for big game including deer, elk, and moose. The WMA also provides habitat for carnivores and furbearers including mountain lions, bears, bobcats, and beavers. There has been an emphasis in recent years to provide improved habitat for upland game including wild turkey, mourning dove, pheasant, and chukar. In 2020, sterile brook trout were stocked into Gordon Creek and stream restoration is planned to further improve fish habitats on the WMA. In addition to fish and game,

the WMA also provides habitat for raptors, pinyon jay, neotropical migratory birds, bats, and other small mammals, and reptiles.

Habitat conditions within the WMA vary from poor to good. Balancing pinyon-juniper habitats and open sagebrush habitats to maintain forage, caching areas, and cover will be important to maintain suitable habitats for the diversity of species on the WMA. At the lower elevations, sagebrush steppe rangelands have experienced stress from drought and overutilization. Browse and forbs should be maintained or improved in these areas with adequate tree cover available for thermal refuge. There are varying ages and densities of pinyon-juniper habitats on the WMA. Projects will aim to maintain pinyon-juniper woodlands with adequate understories as well as reduce encroachment of these species into historically brush-dominated areas. Mountain brush communities include oak brush, mountain big sagebrush, serviceberry, and mahogany. These habitats provide forage as wildlife transition from a lower elevation to higher elevation habitats. A majority of the oak brush community on the WMA was burned in the 2012 Seeley fire and has re-sprouted providing succulent and palatable new forage for wildlife. Opportunities to encourage diverse seral stages of mountain brush habitat will be important, as many species are in late seral stages reducing the availability for browsing. In addition to these rangeland habitats, two areas, the "Bob Wright fields" and "upper fields" are planted with annual crops including winter wheat, barley, triticale, and sunflower. These fields are irrigated to provide habitat and foraging opportunities for big game and upland game.

Limiting factors for fish are migration barriers and low macroinvertebrate populations. Gordon Creek was impacted by the Seeley Fire in 2012. Project work has been identified to improve habitat complexity in the stream and restore it to a more functional state, while also restoring a floodplain and increasing riparian vegetation.

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: species of greatest conservation need (SGCN), 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 are 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 badly.
- Conservation actions are 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 Gordon Creek WMA contains habitat for 22 of the 141 Species of Greatest Conservation Need (SGCN) identified in the Wildlife Action Plan. These species have been listed in the table below.

Common Name	Scientific Name	S Rank	N Rank
Birds			
Bald Eagle	*Haliaeetus leucocephalus*	S2	N5
Black rosy-finch	*Leucosticte atrata*	S1	N4
Burrowing Owl	*Athene cunicularia*	S3	N4
Ferruginous Hawk	*Buteo regalis*	S3	N4
Golden Eagle	*Aquila chrysaetos*	S4	N5
Greater Sage-grouse	*Centrocercus urophasianus*	S3	N3
Lewis's Woodpecker	*Melanerpes lewis*	S3	N4
Peregrine Falcon	*Falco peregrinus*	S3	N4
Mammals			
Dwarf Shrew	*Sorex nanus*	S3	N4
Fringed Myotis	*Myotis thysanodes*	S2	N4
Little Brown Myotis	*Myotis lucifugus*	S4	N3
Preble's Shrew	*Sorex preblei*	S2	N4
Spotted Bat	*Euderma maculatum*	S3	N3
Townsend's Big-eared Bat	*Corynorhinus townsendii*	S4	N3
Western Red Bat	*Lasiurus blossevillii*	SU	N3
White-tailed Prairie Dog	*Cynomys leucurus*	S3	N4
Amphibians			
Northern Leopard Frog	*Lithobates pipiens*	S3	N5
Fishes			
Colorado River Cutthroat Trout	*Oncorhynchus clarkii pleuriticus*	S3	N2
Reptiles			
Many-lined Skink	*Plestiodon multivirgatus*	S1	N5
Midget Faded Rattlesnake	*Crotalus oreganus concolor*	SNR	N4
Smith's Black-headed Snake	*Tantilla hobartsmithi*	S3	N5
Utah Milksnake	*Lampropeltis triangulum taylori*	S3	N4

General Conditions of Habitat

The Wildlife Action Plan identifies key wildlife habitats in Utah. Seven of these habitats exist in the Gordon Creek WMA; Lowland Sagebrush, Desert Grassland, Mountain Sagebrush, Gambel Oak, Mountain Shrub, Aspen Conifer, and Aquatic – Scrub/Shrub. Two separate long-term data sets are gathered by the UDWR to help monitor the habitat conditions through time. The UDWR

has completed annual utilization surveys on several sites within the WMA. This data shows increased leader utilization by deer with a reduction in the number of days used by deer per year since 2012.

A second long-term data set is collected by the UDWR Range Trend Crew. This project monitors vegetation transects throughout the state on a five-year rotation. This data monitors changes in vegetation communities and long-term browse utilization over time at the species level. The WMA was last monitored in 2019. The 2019 data summary found that overall, on the Central Mountains, the upland sagebrush community is dominated by mountain big sagebrush interspersed with oak, rabbitbrush, and black sagebrush. Most browse is composed of young to mature plants with a small number of decadent individuals. The density of species fluctuates, but utilization of browse species remains high. Pinyon and juniper in these habitats are showing an increasing trend. Understories in these habitats are not very diverse but do provide moderate cover. Annual grasses remain present in small amounts. Forbs, both annual and perennial, provide only a small amount of cover. Trend sites on the Gordon Creek WMA contributing to this summary are Wiregrass Bench, Slackpile, North Slackpile, and Telephone Bench. Browse has increased over time and impacts from browsing have been low. The cover and density of pinyon and juniper in these habitats have decreased, due to restoration projects. These habitat types have abundant understories with little diversity. The cover and frequency of perennial grasses have been stable. Perennial forbs have decreased and annual forb cover has fluctuated. Annual grass is present but the cover has remained low. The complete report can be reviewed in its entirety at https://wildlife.utah.gov/pdf/range-trends/archive/2019_Southeastern_Region_Unit_Summary_Report.pdf

Human Use Related Problems

Cattle and sheep grazing occurs adjacent to the WMA, as well as trailing rights through the WMA spring and fall. Livestock frequently trespasses on the property and grazing occurs in areas not managed for livestock.

Some off high-way vehicle use and other recreational uses such as mountain biking occur in the area. These activities are allowed on existing roads however, new user-created trails are not permitted on the WMA.

Camping is currently permitted on the WMA however, it is at the discretion of the UDWR and can be closed at any time.

Adjacent Land Uses and Potential Impacts

The land to the west is owned by the U.S. Forest Service. Various recreation uses occur and include camping, hiking, hunting, and OHV recreation. The land north, south, and east of the WMA have mixed ownership including privately owned, BLM, and SITLA with the primary activity being grazing.

Oil and gas field development occurred on land that is now part of the WMA and adjacent lands. With this development comes issues such as; invasion of noxious weeds on well pads and roads, production water spills, underground high voltage power lines that may become exposed, or erosion caused by road developments. These issues are dealt with on a case-by-case basis.

MANAGEMENT GOALS AND OBJECTIVES

The acquisition and management of this property are consistent with the resource goal outlined in UDWR's 2019 Strategic Plan:

Resource Goal: Conserve, enhance and actively manage Utah's protected wildlife populations.

> Objective R2: Maintain existing wildlife habitat and increase the quality of critical habitats and watersheds throughout the state.
>
> Objective R7: Decrease the number of wildlife-related incidents – including property damage, crop depredation, and threatened or endangered species listings – that negatively affect private property owners.

Constituency goals outlined in UDWR's Strategic Plan:

Constituency Goal: Strengthen support for wildlife management by demonstrating the value and importance of wildlife to all Utahns.

> Objective C1: Increase Participation in fishing, hunting, and other wildlife-related activities.
>
> Objective C6: Increase hunting and fishing opportunities.

The Gordon Creek WMA will be managed to increase its functionality, appeal, availability, and use by all fish and wildlife species. Habitat management will be consistent with sound ecological principles and wise land-use practices.

STRATEGIES FOR PROPERTY MANAGEMENT

Development Activities

<u>Establish Property Boundary/Fence</u>

Several private inholdings on the property exist which make fencing difficult. Many of these inholdings were leased for wildlife from the early 1990s until 2020. Taxes from greenbelt status being revoked on these private inholdings made it no longer cost-effective for the landowner to lease to the UDWR. Fencing of these areas may be needed now more than ever to prevent livestock trespass on the WMA from these properties. Fence maintenance is needed on the

boundary fence running north from the Bob Wright fields. New fencing is needed along the south end of the WMA to reduce trespass livestock. The east end also has little to no fencing.

Fences constructed by or with the UDWR participation are typically constructed to be wildlife-friendly. This should include a height of no more than 42" with a space of 12" between the top and second wire. This is intended to lessen the chances of wildlife becoming entangled in the fence. The bottom wire is normally 18" off the ground, and smooth wire, to allow passage under the wire. Other fencing options may be necessary when sheep are grazed on adjacent land or trailed through areas. These fences will be constructed as wildlife-friendly as possible while still serving their intended purpose.

Sign Needs

The needs for signage on the WMA are minimal. Some maintenance could be beneficial for signs that may have been shot or are fading. There are some signage needs along the south end of the WMA where boundary signs could be placed along the borders of the WMA, and on areas where roads enter or leave the property.

Public Access

Public access is provided to all classes of vehicles to the Gordon Creek WMA by way of Consumers road or U-139. A fair-weather "loop road" branches south of U-139 that provides access to the central and southwestern parts of the WMA. This road also continues southeast into Price after exiting the WMA's southern boundary. Several other unimproved roads and trails generally provide access to private inholdings or other infrastructure throughout the WMA. No developed recreation opportunities exist on the WMA. There is a pit toilet by the upper fields that was installed and is maintained by the county, otherwise, there are no trash collection bins, potable water, or fire pits on site. The property is open to hunting and provides opportunities for deer, elk, pheasant, chukar, doves, and rabbit with the potential for turkey. The property is also open to trapping, angling, wildlife viewing, hiking, and horseback riding/packing. Horse travel is allowed on the WMA but certified weed-free hay is required. Corrals may not be used for holding facilities. Mountain biking and OHV use are allowed on the open roads through the WMA. New trails for mountain biking, OHV use, or horseback use may not be established on the WMA.

Camping is allowed on the WMA for no more than 14 consecutive days. Camps must be occupied daily. Parking of motor vehicles, trailers, or leaving camping equipment will not be allowed. Camping is not allowed in any of the irrigated fields, or along the road or parking area near the Coal City information kiosk or county pit toilet. Camping is at the discretion of the UDWR and can be closed at any time.

Organized events or groups of 25 people or more require a special use permit issued by UDWR.

Annual Maintenance Activities

Assessments by UDWR personnel will be made annually, and a maintenance budget will be requested for the following types of activities.

- Fences will be maintained annually or as needed to ensure pastures are maintained. UDWR personnel, leasees/permittees, and dedicated hunters will be the primary means for maintaining fences.
- Access roads will be monitored annually and maintenance will be conducted as needed to keep them passable and safe for the public. Roads and other rights-of-way that are administered by other parties (e.g. county) will be maintained by those parties. The UDWR will coordinate with local entities to resolve access issues.
- Signs will be inspected and replaced as needed.
- Water rights will be exercised to maintain them. Maintenance staff will work with the local water master to monitor the use of water.
- Ponds will be monitored annually and maintenance will be conducted when needed.
- The upper fields will continue to be irrigated and planted when necessary. Crops may include but are not limited to: alfalfa, annual grains (winter wheat) planted every other year in the fall, and annual crops (sunflower, sorghum, corn, wheat, barley, triticale, etc) planted annually in the spring.
- Noxious weeds will be inventoried and sprayed by UDWR personnel and a seasonal weed crew, as required by state law. Herbicides used near waterways will be reported annually to appropriate agencies. Care will be taken to limit opportunities for noxious weed introduction, and any hay used by visitors, hunters, or livestock-owers must be certified weed-free. The UDWR participates in the Skyline Cooperative Weed Management Area to plan and coordinate noxious weed activities on the WMAs and surrounding lands.

Compatibility of Proposed Uses with Local Government Planning and Zoning Ordinances

The WMA is zoned Mining and Grazing (M&G) as well as a watershed (WS) under Carbon County Zoning Regulations. The most recent building and zoning regulations can be found at https://www.carbon.utah.gov/Administration/Building-Planning-Zoning/Carbon-County-Planning-and-Zoning. The website was accessed February 11, 2020, and at the time Gordon Creek WMA was compatible with Carbon County's Zoning Ordinances.

STRATEGIES FOR HABITAT MANAGEMENT

Strategies for habitat management will be consistent with those outlined in the mule deer and elk management plans previously mentioned which include:

- Continue to improve and restore critical habitats according to the statewide Watershed Restoration Initiative (WRI) being coordinated through the Utah Partners

for Conservation and Development (UPCD). Cooperate with federal land management agencies and private landowners in carrying out habitat improvements such as reseeding, prescribed burns, water developments, etc. on public and private lands.

- Pursue land trades and conservation easements that block up the land, improve public access, and preserve critical wildlife habitats adjacent to the WMA.

- Work cooperatively with the Forest Service, BLM, and local governments to prepare access management plans that enhance wildlife habitats and range conditions. Such plans may emphasize a mix of permanent and seasonal road closures and vehicle type restrictions.

- Continue to monitor the permanent range condition and trend studies located on the WMAs.

Deer Herd Unit Management Plan for Deer Herd Unit # 16B/16C (September 2020)

The Management Plan sets a target of 28,000 wintering deer on the Manti unit based on the best available model and as range conditions permit. Habitat management strategies for this deer herd include the following:

- Continue to improve, protect, and restore sagebrush steppe and aspen habitats critical to deer.
- Protect, maintain, and restore stream and riparian habitats to provide diverse foraging opportunities.
- Work with federal and state partners in fire management and rehabilitation on crucial deer habitats.

Mule deer habitat on the WMA is considered a crucial winter range.

Elk Herd Unit #16 Central Mountains August 2016

The Management Plan sets a target for 12,000 wintering elk on the Manti with an average age of harvested bulls between 5.5-6.0 years old. Habitat management strategies for this elk herd include the following:

- Remove pinyon-juniper encroachment into winter range sagebrush parks.
- Enhance elk habitat on a minimum of 20,000 acres during the next 5 years through direct range improvements.

Elk habitat on the WMA is considered a crucial winter range.

Habitat Improvement Plan

Specific, detailed habitat improvement plans are beyond the scope of this HMP. However, when needed, habitat improvement plans will be submitted to the UDWR's Habitat Council through

Utah's Watershed Restoration Initiative and other potential partners for funding. Habitat improvement project plans will include specific recommendations including treatment methods, seed mixes, and total acreage targeted for treatment. In the next ten years, stream restoration on the WMA will be an emphasis on habitat improvements.

Maintain Previous Restoration Projects

Generally speaking, the best opportunities for habitat improvement on this WMA will focus on pinyon-juniper habitats that have been previously treated. Areas with increasing pinyon-juniper cover will be evaluated for thinning. Thinning activities will take into account the importance of pinyon and juniper as thermal cover for big game species, and thinning projects will be planned to ensure adequate pinyon-juniper cover is left on-site to provide this important habitat requirement.

Water Developments

Water developments should only be pursued if they help reach the management objectives of the WMA. Water developments that would result in big game species becoming year round residents on these crucial winter ranges should be discouraged. Water development projects that would assist in meeting the goals and objectives of the grazing management plan should be pursued.

Access Management Plan

The WMA is open to public access when seasonal closures are not in effect. There are seasonal closures for motorized travel on parts of the WMA from December 1 to April 15. The WMA is popular for hunting deer, elk, pheasant, and chukar. It is also a popular location for shed antler gathering and trapping. Access is available on county roads, but access may be restricted due to weather that makes the roads impassable for travel. Motorized access is restricted to authorized, existing, and designated roads and trails (Utah Code Section 41-22-10.1). The UDWR reserves the right to close all unauthorized roads and trails. Foot and horseback traffic is permitted throughout the WMA.

Fire Management Plan

All activities dealing with wild and prescribed fire will be coordinated with the Division of Forestry, Fire and State Lands (FFSL) according to guidelines established in the Memorandum of Understanding (2005) between UDWR and DFFSL. Fire management provisions include:

- When a prescribed fire is needed as a habitat management tool, UDWR will provide all applicable information to FFSL to ensure burn plans are complete and submitted by deadlines.
- Wildfires will be aggressively battled to protect cottonwood trees and their associated riparian habitats.
- Open fires are allowed, but cannot be unattended, and adequate provisions must be taken to prevent the spread of fire (R657-28). State, federal, or local fire restrictions will apply

to all WMA's when deemed necessary by fire officials and UDWR. Non-combustible materials cannot be used in the building of fires and must be removed. The UDWR reserves the right to ban open fires on the WMA if needed to protect valuable wildlife habitat on the WMA. Open fires are not allowed when there is a closure on adjacent lands due to hazardous fire conditions. The UDWR may also restrict open fires to designated areas if the use of open fires becomes a management problem. Only dead wood lying on the ground may be used for fires.

- The use of fireworks and explosives is prohibited on WMA's (R657-28).

Wood Products

Wood products are managed according to Administrative Rule R657-28, Use of Division Lands. Timber resources are limited as pinyon and juniper are the most abundant woody species. Christmas trees are the main wood products on this WMA which requires a permit from the UDWR.

Livestock Grazing Plan

Livestock grazing is managed according to Administrative Rule R657-28, Use of Division Lands. Grazing on the WMA will be evaluated by regional personnel. Stocking rates and season of use will be adjusted as needed to obtain desired habitat conditions. A high-intensity short duration grazing strategy is used on the "North" and "South" pastures. This grazing should occur in the spring between grass green up and the flag leaf stage. This strategy was implemented to decrease grass and increase shrubs on the WMA in an effort to provide crucial winter forage for deer and elk. Grazing allotments are alternated by year with 150 AUM's on the south pasture and 200 AUM's on the north pasture. Other areas of the WMA are held as a grass bank that can be utilized when determined it is needed which will be decided on a case by case basis. Some examples of possible use include when habitat improvement projects or fires are in need of deferred grazing at which time temporary grazing may occur. The grass bank may also be considered to reduce impacts during exceptional drought. Utilizing this grass bank requires hauling water and a herder to be effective.

Livestock Trespass

At times, trespassing livestock is found on the WMA. Occurrences of trespassing livestock will be handled by UDWR personnel according to the guidelines outlined in the Division's Land Use, R657-28-10, and according to GDL W3TER-02.

SUMMARY STATEMENT OF PROPOSED USES

The primary goals and objectives of this WMA presented in this HMP are to preserve, enhance and protect big game winter range and wintering wildlife, and reduce deer and elk depredation on surrounding private lands. The UDWR will allow for and provide wildlife-related

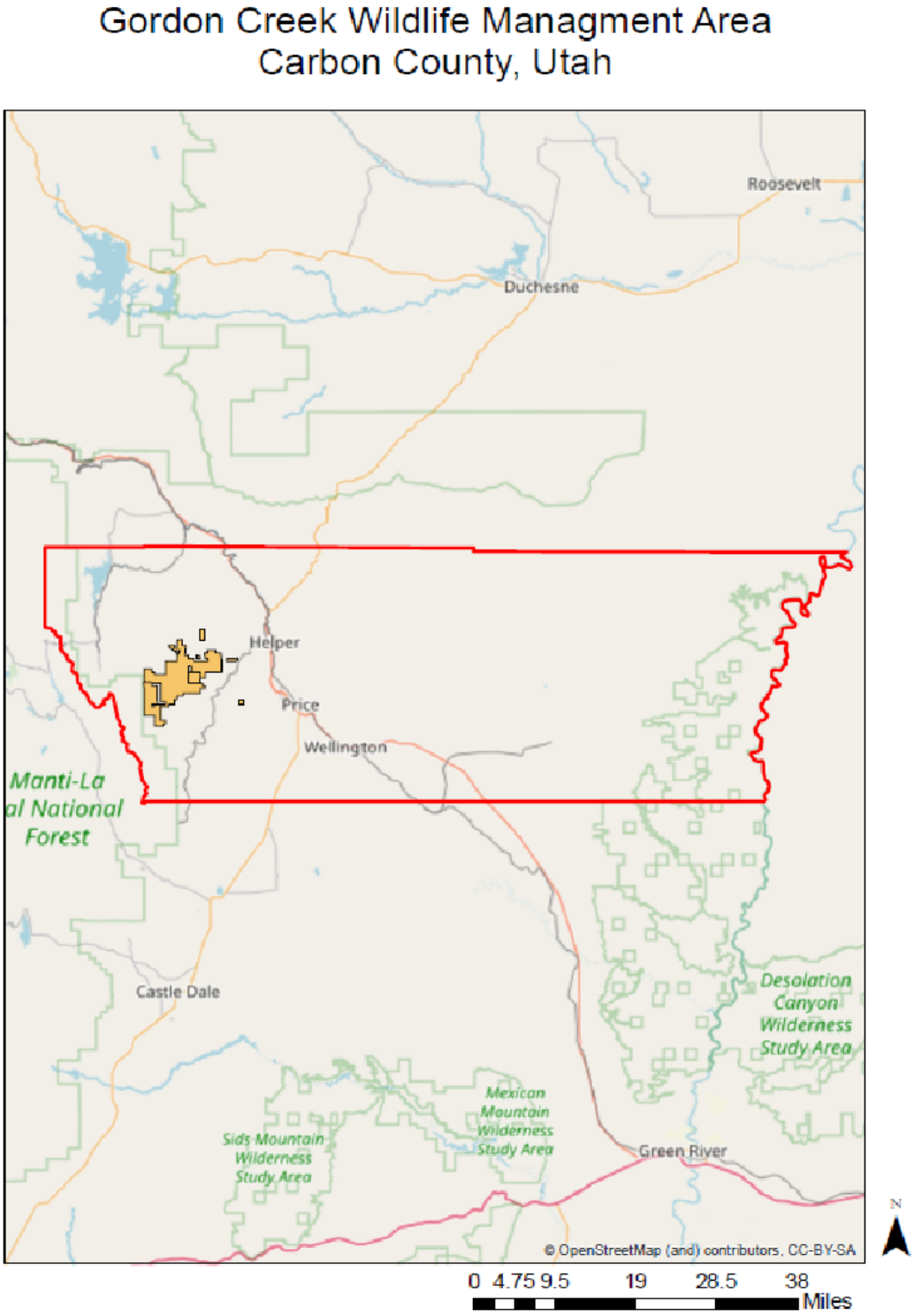
recreational activities that are consistent with the goals and purposes for which this WMA was acquired.

MONITORING AND EVALUATION

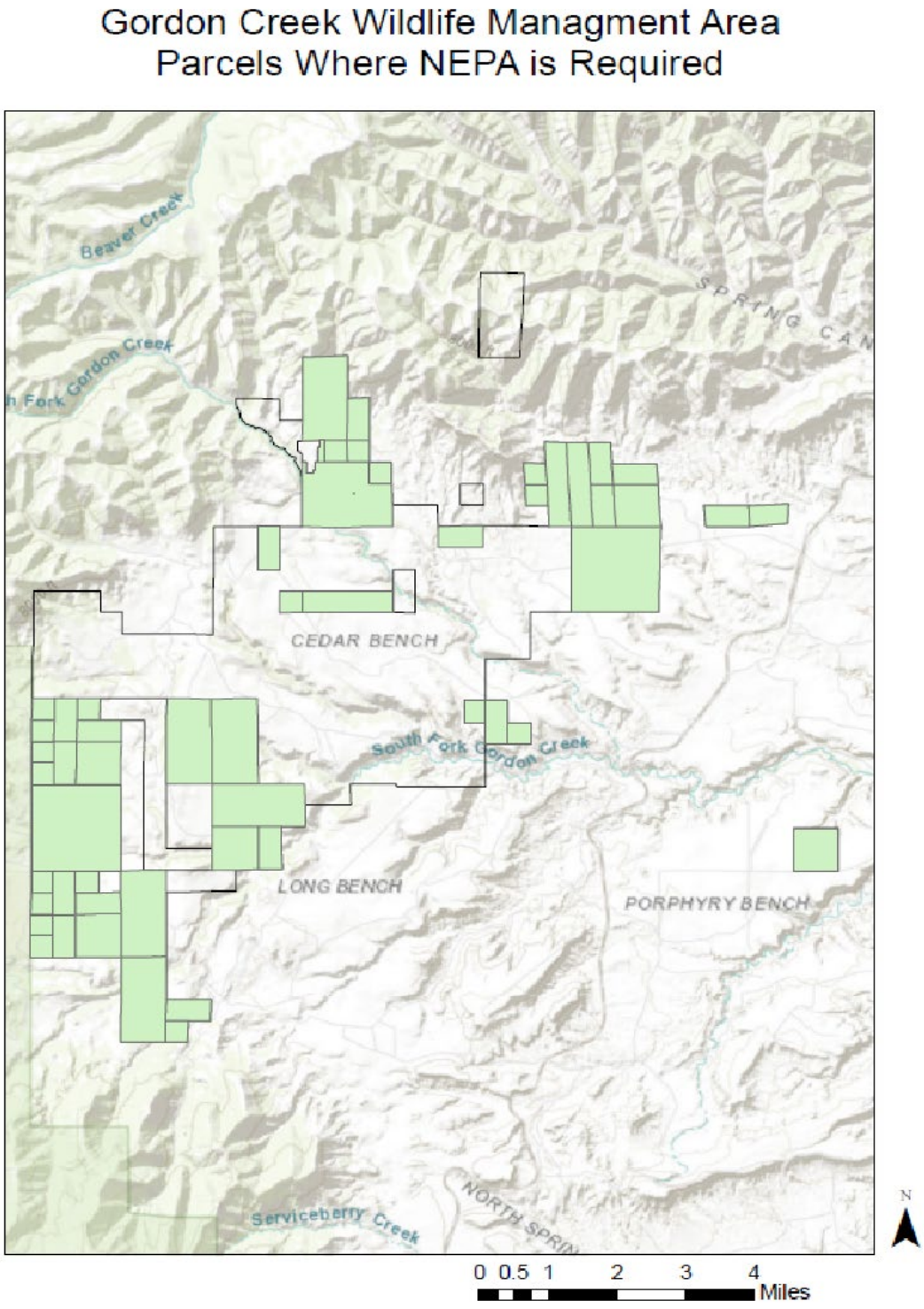
Regional habitat section personnel, the area wildlife biologist, and the district conservation officer will be responsible for monitoring the overall effectiveness of the program. Appropriate sections will provide expertise as required. The Lead and Assistant Habitat Maintenance Specialists will monitor the needs and effectiveness of physical facilities and improvements. Range Trend program personnel will continue to read the existing trend study's on a 5-year rotation and will add additional monitoring sites as needed. The regional habitat section will amend this habitat management plan as needed.

ATTACHMENTS

Map # 1. Location of Gordon Creek WMA Carbon County, Utah
Map # 2. Gordon Creek WMA Parcels Requiring NEPA
Map # 3. Gordon Creek WMA Land Ownership
Map # 4. Road Classification



Map # 1. Location of Gordon Creek WMA Carbon County, Utah



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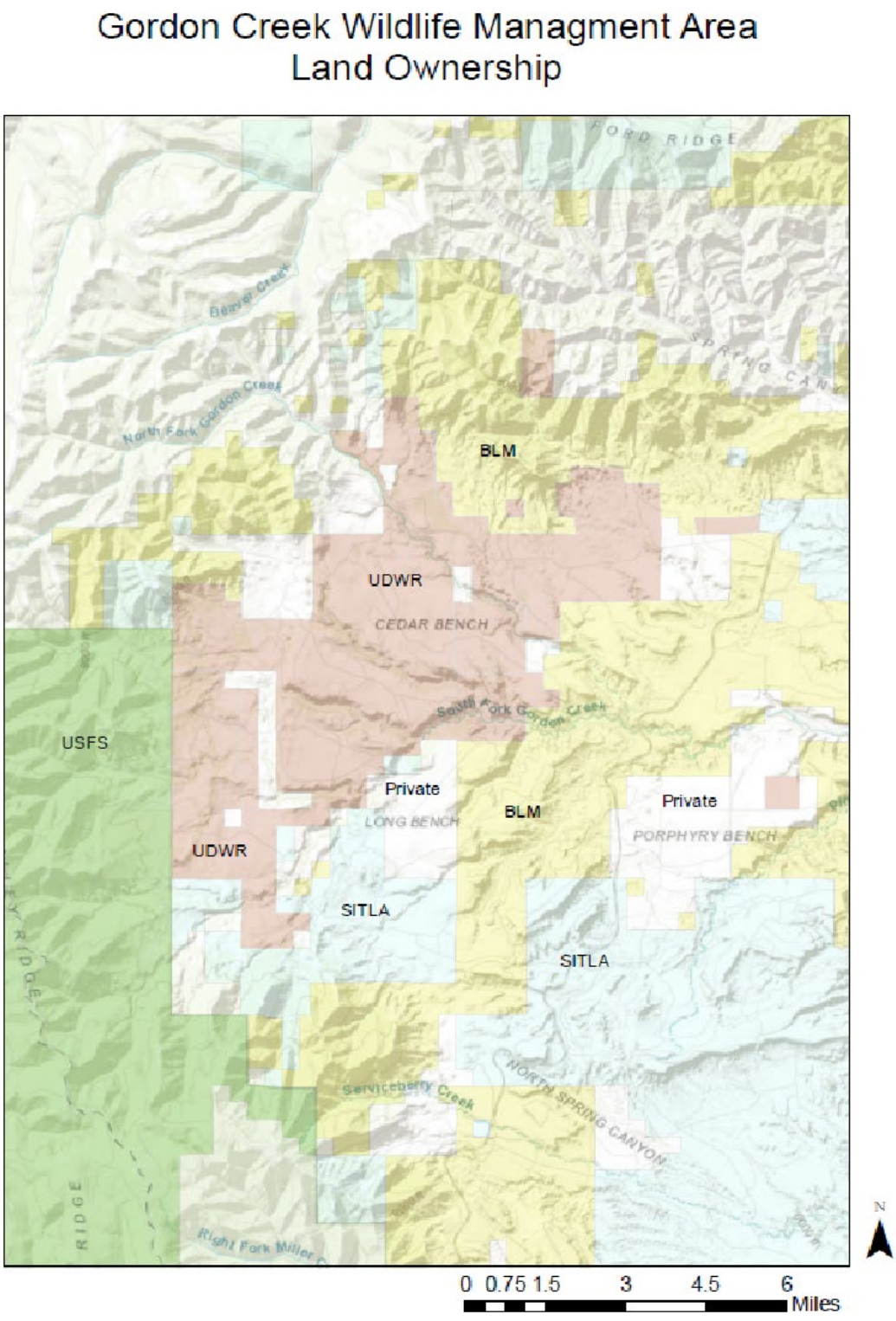
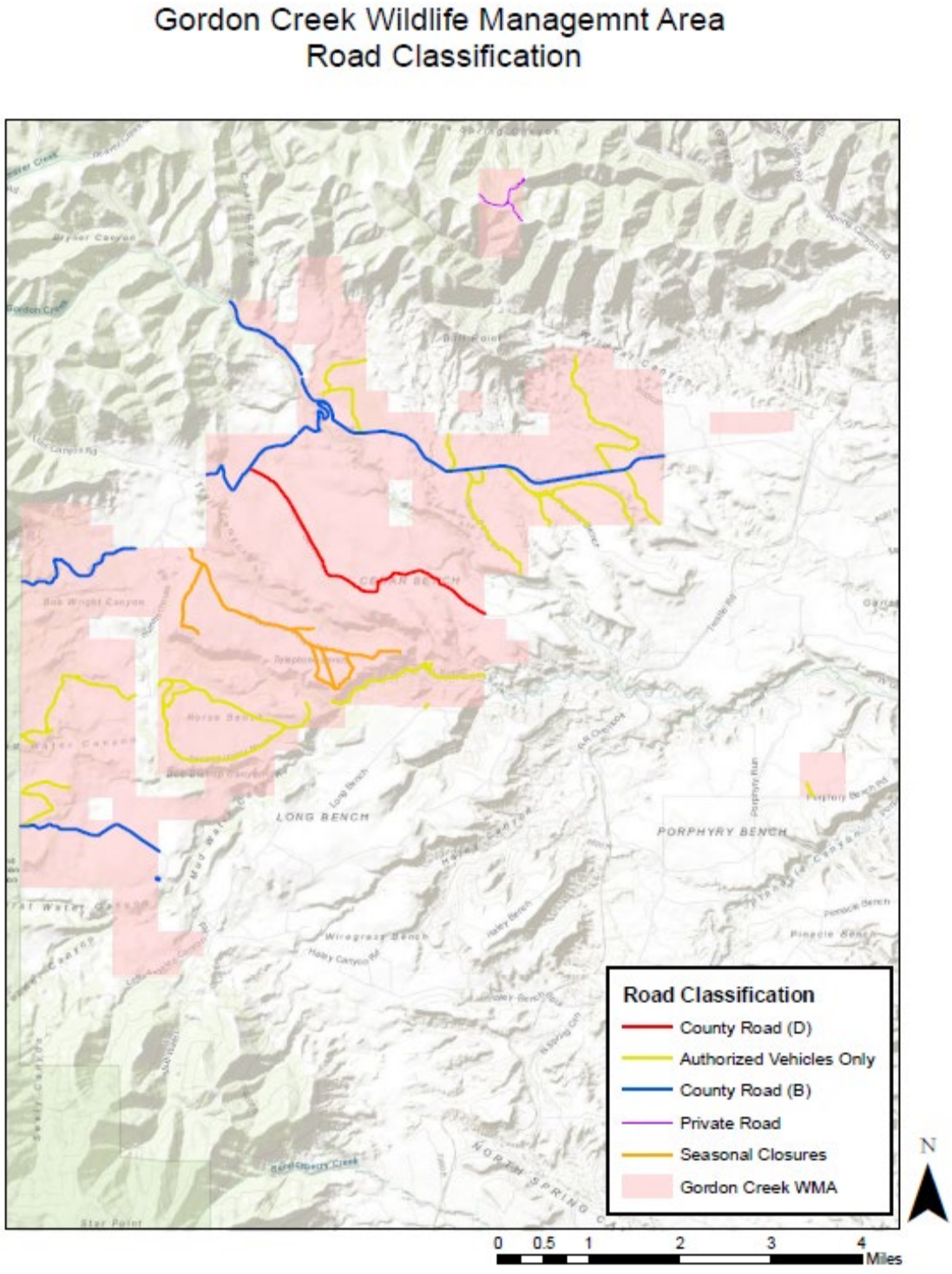


Map # 3. Gordon Creek WMA Land Ownership



Map # 4. Road Classification

APPENDICES

Appendix A

The majority of the minerals were reserved by the previous owner when the land was acquired by the UDWR. Minerals reserved are listed by deed number below. Each deed and title should be referenced for accuracy.

76534- Subject to all prior oil and gas leases; all prior conveyances of record, or any rights, titles, or interests; reservations of right to drill for oil, gas, water, and other minerals of record; all exceptions, reservations, conditions, rights privileges, easement, encumbrances, or rights-of-way contained with prior instruments of record
79054-None
89146- All coal and other minerals. Subject to easements, reservations, and restrictions however evidenced (grazing purchase and first right of refusal? (020227))
91335- All minerals, mineral interests, fissionable materials, coals, oils, gases, clays, spars, potash, sand, gravel, asphalt, commercial rock, veins, lodes, and deposits of every kind and nature. Right by Grantor and heirs the right to enter the lands to explore, develop, mine, produce, remove the above minerals, and to build roads, pipelines, power or telephone lines, structures or facilities upon as may be necessary for mining, producing, exploring, or removal or processing of above-mentioned minerals
97195- Excepting all coal, oil, gas, and other minerals. Subject to easements, reservations, and restrictions however evidenced. Access to existing corral (020233). Less any portion of all parcels that lie within the county roads, highways, or Old Railroad ROW. Pole Line Easement executed by Great Western Coal Mines Company in favor or Utah Power & Light Company. Pole Line Easement executed by J.L. Storrs and Ruth Storrs in favor of Utah Power & Light. Subject to rights of way for the public to use. Subject to any lack of right of access for ingress and egress. Terms and conditions as contained in the Land and Grazing Permit Purchase Agreement.
104826- Subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights. A right-of-way thereon for ditches and canals was constructed by the authority of the United States. All mineral deposits with the right to mine and remove the same.
105333- Subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights. A right-of-way thereon for ditches and canals was constructed by the authority of the United States. All mineral deposits with the right to mine and remove the same.
106536- Subject to roads and utility line ROW, road and highway. Excepting all oil, gas, and mineral rights. Reserving all range rights and rights to the use of the public domain. (Grazing lease 99317). Reservation by Oman of all personal property including livestock, all supplies, hay, grain, equipment, trucks, tractors, and machinery, and all personal property of any kind and nature (until 1962). Reserves the right to compensation to be paid by Mountain Fuel Supply Company for construction and completion of a natural gas line and associated roads. (Less portion deeded to National Coal Railway Company. Subject to any vested and accrued water rights constructed by the authority of the United States (Patent 9/26/1919 Book 6, page 420). Pole Line Easement across the north end of Section 36, T 13 SR 8E). (9532))

112324- all minerals, oil, coal, and gas (not including sand and gravel). Water rights, reservations in Patents, mining claims, easements, or encumbrances. Excepting all mineral, mineral interests, fissionable materials, coals, oils, gases, clays, spars, potash, asphalt, commercial rock, veins, loges, and deposits of every kind and nature. Subject to ROW deeds to Utah Power and Light Company. Subject to agreements to National Coal Railway Company. Subject to a 50-foot ROW to be used for a public road. Subject to Pole Line Easements. Subject to terms of Oil and Gas Leases.
113107- Subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights. A right-of-way thereon for ditches and canals was constructed by the authority of the United States. All mineral deposits with the right to mine and remove the same. Allow the BLM to manage, consistent with the wildlife propagation objectives of the area, all other values of the lands and to recognize the right of the US to retain the revenues from such management. Subject to reservations, conditions, and limitations.
113856- all minerals, oil, coal, and gas (but not including sand and gravel). Patent reservations or mining claims. Subject to terms of Oil and Gas Leases.
114495-all mineral, oil, coal, and gas (but not including sand and gravel). Patent reservations, mining claims. Pole Line Easements. Oil and Gas leases.
118244- all mineral, oil, coal, and gas (but not including sand and gravel)
119700-A ROW for ditches and canals constructed by the authority of the United States. All mineral deposits in the lands are so patented. Subject to reservations, conditions, and limitations.
119860- A ROW for ditches and canals constructed by the authority of the United States. All mineral deposits in the lands are so patented. Those rights for natural gas pipeline purposes are granted to Mountain Fuel Supply Company and Utah Natural Gas Company.
142306- Subject to all reservations previously recorded
143642-Subject to Oil, Gas, and Mineral leases
102606-Subject to all existing rights of record. Reserving all coal and other minerals. ROW for canals, ditches, tunnels, telephone, and transmission lines constructed by the authority of the United States.
803854- Excepting and reserving all coal, oil, gas, and other mineral deposits (not including common varieties of sand, gravel, volcanic cinders). Subject to rights of ingress, egress, and regress by SITLA. Excepting and reserving all sub-surface void and pore spaces and the right to utilize them for carbon sequestration purposes. Subject to any valid, existing easement or right of way of any kind. Subject to Easement ROW No 844 for Carbon County Road. Subject to Oil, Gas, and Hydrocarbon leases. Subject to access easements for Klabzuba Oil & Gas, Inc., assigned to Horse Bench Gathering, LLC to access buried natural gas pipeline. (?). Terms and conditions of Pooling Agreement between SITLA and various working interest owners. Unrecorded Agreements for extraction of oil and gas. Subject to reservation and easements in Exchange Patent No. 20159. Subject to MOU 803856.
818580-Subject to federal surface use restrictions for wildlife conservation and reverter, trust land administration exceptions, reservations, and surface use limitations. Any valid existing ROW. All existing ROW, easement, or other encumbrances. All oil, gas, and mineral rights. Unpatented mining claims. Utah Power & Light Company perpetual easement and ROW. Oil, gas, and hydrocarbon leases

815596- Excepting and reserving all coal, oil, gas, and other hydrocarbons and other mineral deposits. Excepting and Reserving and access and utility easement to benefit SITLA. Subject to any valid, existing ROW. Subject to all existing ROW, easements, or any other encumbrance.

Appendix B

The WMA is the location where George A. Storrs formed the Great Western Coal Company and dreamed of creating a new type of coal mining community. Storrs' vision for the town included 2,600 lots, miner-owned homes, farms, and company stock, a town hall with local elections, free enterprise, community water and electricity, a hospital, park, and an amusement hall. Potential investors to his enterprise included 1920's World Heavyweight Champion Jack Dempsey. Dempsey briefly moved to the Great Western Township, training in the basement of the town's first store. Dempsey soon left town to train for a championship fight, and so did his financial backing for the enterprise.

Great Western Mine never was a huge producer and only 200 lots were ever purchased in town, with only four documented farms. Dwellings were tents, log cabins, and a few frame and cinderblock homes. No more than 100 residents lived in town at any one time. Businesses included two stores, two bakeries, and one pool hall. No electricity except for a couple of individually paid hook-ups and the culinary water supply was problematic.

Although the population was never more than 100 people at any time, the diversity among residents was astounding. Most residents came from (or had parents from) foreign countries, including Syria, Armenia, Greece, Italy, England, Australia, Mexico, Yugoslavia, Czechoslovakia, Serbia, Germany, Wales, Norway, Denmark, and France.

The community never received all of the financial support to make George Storrs' dreams come true. The Great Western Coal Mines Company was dissolved in 1936 and Coal City was abandoned by all but a few plot owners by the early 1950s. The UDWR acquired most of the original township in the 1960s and the area is now designated for wildlife management.

Habitat Management Plan for Bicknell Bottoms Waterfowl Management Area

Executive Summary – April 2022

Primary Purpose of Bicknell Bottoms WMA:

The Bicknell Bottoms WMA is used primarily to protect and enhance waterfowl, upland game, fish and their habitats. In addition, many other types of wildlife, terrestrial and aquatic, along with their habitats, will similarly receive protection and enhancement. Human uses that will be allowed and promoted include hunting, fishing and wildlife viewing.

Wildlife Species:

The Bicknell Bottoms WMA provides habitat for many species of waterfowl, including but not limited to, Canada goose, mallard, green-winged and cinnamon teal, pintail, shoveler, gadwall, wigeon, and coot. Ring-necked pheasants are actively managed on the WMA and are released every year for the purpose of enhancing hunting opportunities. Many species of passerine birds and raptors use the WMA. Golden eagles forage in the marsh year-round and bald eagles are occasional winter visitors.

Mammal species that utilize the WMA include mule deer, elk, jackrabbit, cottontail rabbit, raccoon, mink, beaver, and muskrat. Mule deer and elk use the property year-round with seasonal increases in fall and winter.

The Fremont River and Pine Creek provide habitat for several species of sport fish, including rainbow and brown trout. The most notable native fish species using Bicknell Bottoms is the leatherside chub, although the Fremont River and its tributaries are not considered native range for them.

Habitat Improvement:

During the months of January, February and March of 2022, an advisory committee met and developed goals, objectives and strategies for many activities on the Bicknell Bottoms WMA which will guide the habitat improvement plan for this HMP.

Specific habitat improvement related strategies are listed below:

- Conduct annual vegetation treatments beginning in the summer of 2022 using herbicide and tracked Marsh Master equipment to define corridors (width to be determined by taking reference widths on existing channels in Fremont River and Pine Creek) from the Fremont River to Pine Creek and some private land springs to Pine Creek in an effort to encourage flow and establish a channel over the next 5 years. Approximate location of corridors are highlighted in map 4 of Appendix B. Exact treatment locations will be determined using dye tests and topographical drone technology. If successful, maintenance of the corridors will continue into the future.
- Pursue permits (Stream Alteration, ACOE) to establish a channel through direct actions on the WMA if the vegetation management strategy defined above is deemed unsuccessful.
- Use prescribed (Rx) fire on a rotational basis with a target of every 5-10 years within wetland areas.
- Provide support to adjacent landowners to remedy recent and future debris flows. If requested, DWR aquatic staff will work with adjacent landowners to develop restoration plans and assist in pursuing the necessary permits.
- In conjunction with vegetation management corridors develop pockets devoid of vegetation to allow for standing water using the Marsh Master and herbicide.
- Use bank anchored log structures to increase overhead cover in the current existing fishable channels as well as any additional channels that establish as a result of the implementation of the vegetation management strategy.
- Expand upland game plantings in existing upland plots to the extent possible.
- Develop a second upland plot on the western edge of the property if irrigation is deemed allowable under whirling disease recommendations.
- Develop additional plantings on the north side of Pine Creek adjacent to the existing upland plot - dependent on equipment access (possibly administrative ATV access across the footbridge).

Access Management:

Access to the WMA is walk-in only. In addition to being limited to access by foot, that access is also impacted by the amount of water on the WMA and necessitates the use of waders to access much of the area. Recognizing this, as well as problems associated with limited parking

and increasing interest in use of the WMA, the advisory committee developed the following strategies to assist in the management of access to the WMA:

- Identify nearby properties eligible for the Walk-In-Access program and provide application assistance to interested parties.
- Install a footbridge across Pine Creek near the pheasant flight pens to increase ease of access to the north side of the wetland from the south access point. Depending on design, bridge installation may require a permit.
- Incentivize access provided by private landowners to the extent possible (i.e. Walk-In-Access, Conservation Easements, Land Exchanges, Acquisitions, etc) and provide for improved infrastructure at access points (i.e. walk-through gates or other infrastructure at fences).
- Develop off-road parking opportunities adjacent to upland game plot(s).
- Identify in the plan that camping is not allowed on the WMA and post no camping signs at the expanded parking area(s).

Maintenance Activities

Typical annual maintenance duties include weed control, fence maintenance, signage and annual farming activities in the upland game habitat area.

Specific development related strategies are listed below:

- Develop infrastructure to use DWR water rights on targeted areas if feasible. This may require changes in points of diversion and other planning and its implementation is dependent on those changes being approved. This strategy will not be a first priority in implementation of the Habitat Management Plan.
- Assist efforts to establish debris control structures upstream of Bicknell Bottoms to reduce future debris flows into the WMA.
- Identify opportunities for and pursue installation of additional gauging stations or other water flow measurement devices. Locations to include one on the Fremont River and one on Pine Creek.
- Install a footbridge across Pine Creek near the pheasant flight pens to increase ease of access to the north side of the wetland from the south access point. Depending on design, bridge installation may require a permit.
- Develop off-road parking opportunities adjacent to upland game plot(s).

- Identify in the plan that camping is not allowed on the WMA and post no camping signs at the expanded parking area(s).
- Incentivize access provided by private landowners to the extent possible (i.e. Walk-In-Access, Conservation Easements, Land Exchanges, Acquisitions, etc) and provide for improved infrastructure at access points (i.e. walk-through gates or other infrastructure at fences).

Habitat Management Plan for Bicknell Bottoms Waterfowl Management Area

April 2022

I. BACKGROUND INFORMATION

INTRODUCTION

This Habitat Management Plan (HMP) has been developed to guide management on lands owned and managed by the Utah Division of Wildlife Resources (DWR) approximately two miles south of the town of Bicknell in Wayne County, Utah. These lands have been acquired over a span of years beginning in 1961 and as recently as 2020, and are collectively known as the Bicknell Bottoms Waterfowl Management Area (WMA).

In December of 2021, an advisory committee was formed to assist the DWR in updating and revising the Bicknell Bottoms WMA HMP. The committee was composed of 12 official members representing constituency groups including hunters, anglers, adjacent landowners, downstream water users, conservation district staff and elected officials including the Wayne County Commission and Bicknell Town Council. In addition, a variety of staff from the DWR habitat, wildlife, aquatic and outreach sections attended the committee meetings to serve as subject matter experts and to help gather the information compiled by the committee. Other invited participants that helped on an as-needed basis included staff from the Utah Division of Water Rights and the Army Corps of Engineers.

The committee met five times during the winter of 2022, and ultimately created a document listing goals, objectives and strategies that they would like to see addressed in this HMP. This document in its entirety is included as Appendix A. In addition, the goals, objectives and strategies have been incorporated into this HMP where they are applicable. At the first meeting, the committee also drafted a charter that identified the purpose, authority, expectations, time frame, roles and responsibilities of the group. One of the key roles of the group was identified as supporting group decisions which would be made through the process of consensus, meaning all will have the chance to be heard and can support or live with the decisions that are made. The charter is included as Appendix B.

PURPOSE OF DIVISION OWNERSHIP

The Bicknell Bottoms WMA was purchased to protect waterfowl, fisheries, upland game and their habitat in addition to providing access for hunters and anglers to enjoy these resources. In addition, the J. Perry Egan state fish hatchery is located within the Bicknell Bottoms WMA. The J. Perry Egan hatchery is one of the state's most important hatcheries as it provides the majority of sport fish broodstock for the entire state. While this hatchery is not managed under this WMA management plan, it should be noted that the goals, strategies and objectives of this plan also seek to protect the viability of this key asset in the State Hatchery System.

HISTORIC USES

The Bicknell Bottoms area was historically used for livestock grazing. Numerous private landowners also used the area for irrigated pasture land. The Bicknell Bottoms WMA contains the confluence of the Fremont River and Pine Creek which creates a wetland area that consists of various marshes and wet meadows. The area was known for its waterfowl and upland game hunting opportunities. The Fremont River and Pine Creek have historically provided trout fishing opportunities.

PUBLIC RECREATION OPPORTUNITIES

PUBLIC ACCESS

There are no formal seasonal closures or other permanent restrictions on public access. However, motor vehicle access is limited to the existing county roads surrounding the WMA. The WMA is accessible by foot to hunters, anglers, and other wildlife and recreation enthusiasts, but access to much of the interior of the property requires the use of waders.

There are several developed fence walk-through-stiles that are intended to make access easier. Many users access the WMA through these walk-throughs by parking adjacent to them alongside the county road. This plan proposes to develop 2 new pull-through parking areas intended to allow users to exit the county road and accommodate the increasing number of users seen in recent years. Maps 2 and 4 in Appendix C highlight these walk-through-stiles and the proposed parking areas.

CAMPING

Overnight camping is not permitted at the Bicknell Bottoms WMA. This will also include the new parking areas that will be developed as part of this plan, and as such, the areas will need to have “No Camping” signs posted upon completion.

KEY WILDLIFE SPECIES

The Bicknell Bottoms WMA provides habitat for many species of waterfowl, including but not limited to, Canada goose, mallard, green-winged and cinnamon teal, pintail, shoveler, gadwall, wigeon, and coot. Ring-necked pheasants are actively managed on the WMA and are released every year for the purpose of enhancing hunting opportunities. Many species of passerine birds and raptors use the WMA. Golden eagles forage in the marsh year round and bald eagles are occasional winter visitors.

Mammal species that use the WMA include mule deer, elk, jackrabbit, cottontail rabbit, raccoon, mink, beaver, and muskrat. Mule deer and elk use the property year-round with seasonal increases in fall and winter.

An undetermined number of amphibian and reptile species also inhabit the WMA.

The Fremont River and Pine Creek provide habitat for several species of sport fish including rainbow and brown trout. The most notable native fish species using Bicknell Bottoms is the leatherside chub, although the Fremont River and its tributaries are not considered native range for them.

GRAZING

Although prescribed fire and herbicide use are the preferred methods for vegetation management, the DWR may use domestic livestock grazing to manage vegetation on the WMA if grazing is determined to be beneficial for the maintenance or improvement of wildlife habitat. The WMA is eligible for use as a grassbank property and can be made available for grazing as in-kind trade for conservation actions on public or private lands, emergency forage for DWR grazing permittees or any other purpose designated by the DWR. In recent years the WMA has been offered as a grassbank twice. In 2018, 100 total head of cattle were permitted for approximately 1 month between September and October. In 2021, a solicitation for grassbank

grazing at the WMA was issued for 50 AUM’s in the month of September. Ultimately, no bids were received.

II. PROPERTY INFORMATION

PROPERTY DESCRIPTION

The Bicknell Bottoms WMA is located in Wayne County, Utah. The property lies along both the Fremont River and Pine Creek drainages and includes wetlands associated with their corridors and numerous springs in the area.

The Bicknell Bottoms WMA is approximately 640 acres in size and includes approximately 1 mile of the Fremont River and 2.2 miles of Pine Creek. In addition, there are several other unnamed stream channels and corridors that contribute to the flow of the Fremont River prior to exiting the WMA.

(See Appendix C for maps; see Appendix D for information regarding deeds)

LAND ACQUISITION HISTORY

On March 29, 1961, the Division purchased 134.84 acres from Clifford L. and Elizabeth B. Mangum.

On November 10, 1961, 315.58 acres were purchased from June S. and Irene Ellett, and Rulon S. and Bertha Ellett. One portion of this land was sold to Allen R. and Lawana Jones on October 7, 1997. Another portion of this land was later exchanged in a transaction with Seth E. and Erica E. Taft on October 6, 2020.

On August 21, 1962, an additional purchase from Clifford L. and Elizabeth B. Mangum for 40 acres was made. The entire 40 acres was disposed of in a transaction with Hugh V. and Fern P. King on December 10, 1962.

On December 13, 1962, the Division acquired 8.43 acres from Hugh V. and Fern P. King.

On July 8, 1963, the Division purchased 85.667 acres from Rotas S. and Ethel H. Durfey. A portion of this land was later disposed of in an exchange with Guy G. and Barbara C. Pace on February 25, 1971.

On November 23, 1970, Levi and Golda Bullard sold 39.85 acres to the Division. This portion of the property is classified as the J. Perry Egan Hatchery.

On February 25, 1971, the Division acquired 45.26 acres in a land exchange with Guy G. and Barbara C. Pace.

On April 30, 1982, Evan Garth Westenskow sold the Division 120 acres. A portion of this land was later disposed of in an exchange with Pace Ranches, Inc. on February 26, 1998.

On March 4, 1985, The State of Utah School and Institutional Trust Lands Administration (SITLA) which was at the time known as the Division of State Lands and Forestry, sold the Division 40 acres.

On February 13, 1998, the Division acquired 40 acres in a land exchange with Pace Ranches Inc.

In July 2005, the Division sold 13.02 acres to Dee Henshaw which resolved an ongoing land boundary conflict.

From May 1983 until May 1984, the Division leased 275 acres from Faun and Garth Westenskow until the lease expired.

On October 6, 2020, the Division acquired 15.98 acres in a land exchange with Seth E. and Erica E. Taft.

The second land acquisition for the WMA, 315.58 acres from Rulon S. and Bertha Ellett and the later land exchange of 16 acres for 15.98 acres with Seth E. and Erica E. Taft are the only parcels on the WMA purchased with Federal Aid funding (Project W-100-L). Therefore, federal aid stipulations do apply to those portions of the WMA.

(See Appendix C, map 3; See Appendix D for information concerning Deeds)

ENCUMBRANCES

WATER RIGHTS/DEVELOPMENTS

The Division owns nine separate water rights on the Bicknell Bottoms WMA that provide over 34 cfs of flow at the present time. All the water rights owned by the Division on the WMA come from Pine Creek, Pine Creek Spring, Bullard Spring and one underground well. The majority (23 cfs) of the Division-owned water rights have been perfected for fish culture at the J. Perry

Egan hatchery. The remaining water is filed as non-use or perfected irrigation. The non-use applications were filed to protect the water right from forfeiture in areas that were no longer irrigated due to the presence of whirling disease in Pine Creek and the threat to the hatchery if the water were used on those areas. The perfected irrigation rights are for a 20 acre parcel that we continue to irrigate for forage production, downstream from the hatchery. These rights are listed in Table 1 in Appendix E.

MINERAL DEVELOPMENT

Hugh V. and Fern P. King reserved all of the oil, gas, and mineral rights on the 32 acres the Division acquired from them.

Rotas S. and Ethel H. Durfey reserved all of the oil, gas and mineral rights on the land sold by them.

Levi and Golda Bullard reserved all rights to any minerals, oil, coal, and gas (excluding sand and gravel) on the 40 acres sold to the Division.

Guy G. and Barbara C. Pace reserved mineral rights on the land they exchanged to the Division.

(See Appendix D)

RIGHTS OF WAY

Mountain States Telephone and Telegraph Company holds a right-of-way easement across the property acquired in the land exchange with Pace Ranches Inc.

Garkane Power Association, Inc. maintains a utility easement on the property.

In 2005, Dee Henshaw, a private landowner, signed an Amended Grant of Perpetual Easement and Right-of-Way (Amended Easement) for a 36-in water pipeline across his private land. The easement was originally granted by a previous landowner in 1971; however a recent survey of the private property revealed that the pipeline was installed outside of the easement corridor described in the original easement and right-of-way. The Amended Easement made the appropriate changes to the easement’s center line description so that it coincides with the current location of the pipeline.

(See Appendix D).

III. PROPERTY INVENTORY

EXISTING CAPITAL IMPROVEMENTS

ROADS

The majority of this property is only accessible by foot (See Appendix C, Map 2).

The Hatchery Road runs along a majority of the south boundary of the WMA. This road is well used and maintained. The Bicknell Bottoms Road intersects the southwest corner of the property and is also well used and maintained. Another road that is frequently used to access the WMA is 400 West which runs south out of Bicknell. This is also a well maintained road that ends in a semi-developed parking area. From this parking area you must cross several private property owners by foot to access the WMA.

FENCING

The majority of the WMA is now fenced along property boundary lines. One exception includes the need to fence the property recently acquired in the 2020 land exchange with the Taft's. This should be completed by the end of 2022. There is also an approximately 10-acre piece that is not connected to the rest of the WMA and is surrounded by private land on all sides that is not currently practical to fence. Finally, there are a couple of small areas where the property extends south of Hatchery Road which are not fenced.

PHYSICAL FACILITIES

As previously mentioned, the J. Perry Egan Hatchery and all of its associated infrastructure is contained within the WMA. The hatchery is not managed under this WMA management plan but is managed by the State Hatchery System.

There are two garage-type storage facilities on the property just south of Pine Creek Spring as well as several sheds and a storage container.

On the west end of the property just south of the Fremont River is a pheasant-rearing facility. This includes a flight pen as well as the associated storage sheds for the necessary materials and supplies to run the facility.

As part of this HMP, two areas are identified for parking improvement and expansion. The first is a planned pull-through parking area just south of the pheasant-rearing facility alongside the developed upland game habitat area. The second is also a planned pull-through parking area to be added on the southwest corner of the property in conjunction with a planned new upland game habitat area (See Appendix C, Map 4).

HABITAT PROJECTS

A 20-acre upland game habitat area has been created on the east end of the property south of the Fremont River. This area is planted with a rotation of grain crops and is irrigated annually. In addition, patches of permanent perennial grass have been planted and established in this area, as well as tree and shrub rows to provide both food and cover for upland game species.

Prescribed fire has been used on the property infrequently to date with some small burns carried out internally by DWR staff. In March of 2017, DWR partnered with the State of Utah Division of Forestry, Fire, and State Lands to implement a larger scale prescribed burn of approximately 200 acres.

DWR aquatic staff have also installed structures along Pine Creek to provide overhead cover for sport fish.

There are future plans to expand on many if not all of the habitat projects stated above and they will be discussed in greater detail later in the HMP.

IRRIGATION

As mentioned above, the 20-acre upland game habitat area on the east end of the property south of the Fremont River is irrigated. This is accomplished using the water rights DWR holds in Pine Creek (See Appendix D, Table 1). Water is pumped out of the creek just below the pheasant-rearing facility and spread across the area through a combination of hand-line sprinklers and ditches along the established tree and shrub rows.

CULTURAL RESOURCES

There are no cultural resources known on the Bicknell Bottoms WMA at this time.

SPECIES OF GREATEST CONSERVATION NEED

The Utah Wildlife Action Plan was created “to manage native wildlife species and their habitats, sufficient to prevent the need for additional listings under the Endangered Species Act.” The State of Utah has identified several Species of Greatest Conservation Need (SGCN), which “do, or potentially could, present the possibility of an ESA listing.” Threats to these species are described in the Utah Wildlife Action Plan. Up to 11 SGCN’s could potentially occur on lands managed under this plan. For many of these, very little is known about the species and surveys have not been conducted in this area. For those with known information, the following are of note:

Peregrine falcon (*Falco peregrinus*)

There are historic records of peregrine falcons within a ½ mile radius of the Bicknell Bottoms WMA. Falcons likely use the area to forage on waterfowl and passerine birds and have known eyries in Capitol Reef National Park 12 miles to the east, which places the Bicknell Bottoms WMA well within their foraging range. There are also known historic eyries in the Sunglow and Big Hollow areas within just 1 mile of the WMA.

Utah prairie dog (*Cynomys parvidens*)

There are two active colonies of the federally listed (threatened) Utah prairie dog within a 1/2 mile radius of the WMA. The majority of the WMA is too wet to expect that Utah prairie dog would establish colonies on the WMA, but it is possible that they could forage around some of the drier perimeter.

American white pelican (*Pelecanus erythrorhynchos*)

There are historic records and recent observations of American white pelican within one half mile radius of the Bicknell Bottoms WMA.

Bald eagle (*Haliaeetus leucocephalus*)

There are historic records of bald eagle within a ½ mile radius of the Bicknell Bottoms WMA. Wintering bald eagles are known to forage in waterfowl areas.

Golden eagle (*Aquila chrysaetos*)

There are resident golden eagles that are often observed foraging in the marsh.

IMPORTANT FISH AND WILDLIFE HABITATS

In addition to the species of greatest conservation need listed above, the Bicknell Bottoms WMA provides crucial habitat for a wide variety of waterfowl, shorebirds, upland game and several trout species. Mule deer and elk also use the property year-round with seasonal increases in fall and winter.

GENERAL CONDITIONS OF HABITATS

HABITAT TYPES

The Bicknell Bottoms WMA is one of the finest natural marshes in Utah. The basic habitat type on the WMA resembles a hemi-marsh environment with a variety of vegetation including hardstem bulrush, cattail, Baltic rush, and saltgrass. There is open water along the upland areas within the boundaries. Most of the water is very shallow and provides excellent habitat for waterfowl. Also, Pine Creek runs along the majority of the WMA and the main channel of the Fremont River flows through the northern portion of the WMA, both providing important sport fisheries for trout.

RANGE AND WATERSHED CONDITIONS

There is very little of the WMA that would be considered rangeland in the traditional sense. However, the condition of the rangelands along tributary streams contribute to challenging watershed conditions. There are multiple tributary channels that contribute significant amounts of sediment to both the marsh and adjacent landowners during significant rain and flow events. Supporting upland treatments and quick responses to future sediment depositing events on adjacent landowners will help to decrease the sedimentation into the WMA.

RIPARIAN CORRIDORS AND WETLANDS

Wetlands associated with the WMA are in good condition and exhibit diverse age classes of vegetation. It is desirable to have all vegetation age classes represented within the property in an effort to provide for the various life cycle needs of the wildlife. This diversity of age class can be attained through a combination of prescribed fire and herbicide along with occasional grazing if deemed necessary and feasible.

While they provide a great trophy trout fishery, the riparian corridors have struggled to establish overhanging vegetation due to the natural characteristic of a marsh system. The area is a natural deposition zone and excessive sediment has impeded the growth of bank vegetation.

HABITAT LIMITATIONS

The biggest habitat limitation on the WMA is related to the inability to use water rights from Pine Creek on the property above the J. Perry Egan Hatchery. Pine Creek is whirling disease positive and using its water above the springs and pipelines that feed the hatchery would put the facility at risk for contracting whirling disease, compromising one of the largest producing hatcheries in the state. The inability to use these water rights limits the opportunity to create an additional upland game area on the west end of the property where there is sufficient dry ground to do so.

The other habitat-related limitation is the existence of wetlands on the property. While this isn't necessarily problematic as the existence of wetlands coincides with waterfowl habitat needs, it does limit options for types of projects. From a physical standpoint, the ground is too wet to manipulate. From a regulatory and permitting standpoint, there are strict and potentially onerous processes that have to be followed for disturbing wetlands.

HUMAN USE RELATED PROBLEMS

With the growing popularity of the pheasant-release program comes increased interest in the opportunity to use the property for pheasant hunting. With that increased use, parking issues are arising and it is proposed to create better parking that allows users to get off the shoulder of Hatchery Road. The size of the upland game area is also limiting the number of users that can be on the property at one time without interfering with other hunters. An additional pheasant release site with an associated parking area is being proposed on the west end of the property in an effort to alleviate that limitation.

ADJACENT LAND USES AND POTENTIAL IMPACTS

The WMA is bordered on the north, east and west by wet meadows that are used mostly for grazing cattle. The south side of the WMA is bordered by several farms and associated homes..

There is some potential for development of residential properties surrounding the WMA. The town of Bicknell is approximately two miles north of the property and is experiencing moderate growth. However much of the land may be unsuitable for residential development due to the

marsh habitat. Residential areas could have adverse impacts on wildlife by restricting movement, disrupting possible nesting grounds, and encroaching upon wildlife hunting/foraging areas. Hunting opportunities may suffer from residential development due to safety issues.

Private landowners on the north side of the property currently accommodate user access to the WMA through their property. Should that situation change, hunters and anglers would lose the north-side access point off of 400 West coming south out of Bicknell. It is proposed to pursue opportunities with adjacent landowners to secure these access points through the use of the walk-in-access program, conservation easements, land exchanges, or acquisitions.

ZONING AND LAND USE ORDINANCES

The Bicknell Bottoms WMA is zoned as Residential/Agricultural. All of the land surrounding the WMA is also zoned as Residential/Agricultural.

IV. MANAGEMENT GOALS AND OBJECTIVES

The management of the Bicknell Bottoms WMA takes into account the goals, objectives, and strategies of other DWR planning efforts, as well as county and state resource management plans. These plans include, but are not limited to, the DWR strategic plan, the Utah Wildlife Action Plan, and species specific management plans. Some of these plans are briefly discussed below. *Note: this is not a comprehensive review of the listed plans, but a summary of relevant objectives and strategies contained within those plans.*

DWR STRATEGIC PLAN

The management of the Bicknell Bottoms WMA will be consistent with the goals and objectives of the DWR Strategic Plan:

- Agency goal: Create a culture of respect, innovation, efficiency and effectiveness within the Utah Division of Wildlife Resources.
    - Objective A6 - Increase our coordination with partners, including local, state and federal agencies; non-governmental organizations; universities and others.
- Constituency goal: Strengthen support for wildlife management by demonstrating the value and importance of wildlife to all Utahns.
    - Objective C1 - Increase participation in fishing, hunting, and other wildlife-related activities.
    - Objective C4 - Increase understanding of our customers and potential customers and take reasonable steps to address their needs, wishes and priorities.
    - Objective C5 - Increase understanding of how the broader public views and values wildlife - and how it contributes to their quality of life - and take reasonable steps to address their needs, wishes, and priorities.
    - Objective C6 - Increase hunting and fishing opportunities.
- Resource goal: Conserve, enhance and actively manage Utah's protected wildlife populations.
    - Objective R1 - Increase, decrease or maintain wildlife populations, as needed, to meet the objectives in our management plans.
    - Objective R2 - Maintain existing wildlife habitat and increase the quality of critical habitats and watersheds throughout the state.

- Objective R4 - Decrease risks to species and their habitats through integrated implementation of the Wildlife Action Plan, species recovery plans, conservation agreements and other management plans.

WILDLIFE ACTION PLAN

The 2015 Utah Wildlife Action Plan (WAP) was created with the goal “to manage native wildlife species and their habitats, sufficient to prevent the need for additional listings under the Endangered Species Act.” The WAP identifies wildlife species most in need of conservation attention and the habitats they require for survival. The WAP includes a statewide threat assessment, which identifies threats to each key habitat and then ranks the impact of that threat according to the number of species of greatest conservation need that could be affected. The Bicknell Bottoms WMA contains multiple key habitats listed in the WAP. The threats listed below are not a comprehensive list of statewide threats identified for these habitats, but are those that may be most relevant on the WMA. Management activities on the WMA will attempt, to the extent possible, to address these priority threats, and will use the suggested strategies for management as outlined in the WAP.

EMERGENT

Priority threats include:

- Channelization / Bank Alteration (direct, intentional)(Medium)
- Droughts (High)
- Water Allocation Policies (High)
- Agricultural / Municipal / Industrial Water Usage (Medium)
- Invasive Plant Species - Non-native (Medium)

Strategies for management include:

- Promoting policies that maintain or restore natural water and sediment flow regimes.
- Promoting policies that reduce inappropriate grazing by domestic livestock and wildlife.
- Continuing the use of appropriate methods for reducing the spread and dominance of invasive weeds, including “early detection - rapid response” programs.

RIVERINE

Priority threats include:

- Sediment Transport Imbalance (Medium)
- Improper Grazing (current) (High)
- Channelization / Bank Alteration (direct, intentional) (High)
- Droughts (High)
- Water Allocation Policies (Very High)
- Agricultural / Municipal / Industrial Water Usage (Very High)
- Invasive Plant Species - Non-native (Medium)

Strategies for management include:

- Promoting policies that maintain or restore natural water and sediment flow regimes.
- Promoting policies that reduce inappropriate grazing by domestic livestock and wildlife.
- Continuing the use of appropriate methods for reducing the spread and dominance of invasive weeds, including “early detection - rapid response” programs.

LOCAL RESOURCE MANAGEMENT PLANS

In 2015, the Utah Legislature passed H.B. 323 which required each county to develop a resource management plan (RMP) as part of the county’s general plan. The State of Utah aggregated the land use decisions and directives that emerged from the county plans and, in 2018, published a resource management plan for the state of Utah. These local resource management plans were created to address and remedy a disconnect between local land use needs/desires and federal land use planning. The county and state RMPs are intended to provide a basis for coordinating with the federal government. Counties also utilize their RMP’s as a basis for coordinating with State planning activities.

Under Utah State Code 63L-10-104, “State agencies and political subdivisions shall refer to and substantially conform to the statewide resource management plan when making plans for public lands or other public resources in the state.”

Local Resource Management Plans applicable to the Bicknell Bottoms WMA include the statewide RMP and the Wayne County RMP. Management of the Bicknell Bottoms WMA will be consistent with these local resource management plans to the extent possible.

V. STRATEGIES FOR PROPERTY MANAGEMENT

DEVELOPMENT AND ANNUAL MAINTENANCE ACTIVITIES

As discussed in the introduction, an advisory committee met and developed goals, objectives and strategies for many activities on the WMA. In addition to these, typical annual maintenance duties include weed control, fence maintenance, signage and annual farming activities in the upland game habitat area.

Specific development related strategies are listed below:

- Develop infrastructure to use DWR water rights on targeted areas. This may require changes in points of diversion and other planning, and its implementation is dependent on those changes being approved and will not be a first priority in implementation of the Habitat Management Plan.
- Assist efforts to establish debris control structures upstream of Bicknell Bottoms to reduce future debris flows into the WMA.
- Identify opportunities for and pursue installation of additional gauging stations or other water flow measurement devices. Locations include one on the Fremont River and one on Pine Creek.
- Install a footbridge across Pine Creek near the pheasant flight pens to increase ease of access to the north side of the wetland from the south access point. Depending on design, bridge installation may require a permit.
- Develop off-road parking opportunities adjacent to upland game plot(s).
- Identify in the plan that camping is not allowed on the WMA and post no camping signs at the expanded parking area(s).
- Incentivize access provided by private landowners to the extent possible (i.e. Walk-In-Access, Conservation Easements, Land Exchanges, Acquisitions, etc) and provide for improved infrastructure at access points (i.e. walk-through gates or other infrastructure at fences).

VI. STRATEGIES FOR HABITAT IMPROVEMENT

HABITAT IMPROVEMENT PLAN

The goals, objectives and strategies developed by the advisory committee and included as Appendix A are the significant driving force guiding the habitat improvement plan for this HMP.

Specific habitat improvement related strategies are listed below:

- Conduct annual vegetation treatments beginning in the summer of 2022 using herbicide and tracked Marsh Master equipment to define corridors (width to be determined by taking reference widths on existing channels in Fremont River and Pine Creek) from the Fremont River to Pine Creek and some private land springs to Pine Creek in an effort to encourage flow and establish a channel over the next 5 years. Approximate location of corridors are highlighted in map 4 of Appendix C. Exact treatment locations will be determined using dye tests and topographical drone technology. If successful, maintenance of the corridors will continue into the future.
- Pursue permits (Stream Alteration, ACOE) to establish a channel through direct actions on the WMA if the vegetation management strategy defined above is deemed unsuccessful.
- Use prescribed (Rx) fire on a rotational basis with a target of every 5-10 years within wetland areas.
- Provide support to adjacent landowners seeking to deal with recent and future debris flows. If requested, DWR aquatic staff will work with adjacent landowners to develop restoration plans and assist in pursuing the necessary permits.
- In conjunction with vegetation management corridors develop pockets devoid of vegetation to allow for standing water using the same method with the Marsh Master and herbicide.
- Use bank anchored log structures to increase overhead cover in the current existing fishable channels as well as any additional channels that establish as a result of the implementation of the vegetation management strategy.
- Expand upland game plantings in existing upland plots to the extent possible.
- Develop a second upland plot on the western edge of the property if irrigation is deemed allowable under whirling disease recommendations.

- Develop additional plantings on the north side of Pine Creek adjacent to the existing upland plot - dependent on equipment access (possibly administrative ATV access across the footbridge).

ACCESS MANAGEMENT PLAN

Access to the WMA is walk-in only. In addition to being limited to access by foot, that access is also impacted by the amount of water on the WMA and necessitates the use of waders to access much of the area. Recognizing this, as well as problems associated with limited parking and increasing interest in use of the WMA, the advisory committee developed the following strategies to address access to the WMA:

- Identify nearby private properties eligible for the Walk-In-Access program and provide application assistance to those interested in participating.
- Install a footbridge across Pine Creek near the pheasant flight pens to increase ease of access to the north side of the wetland from the south access point. Depending on design, bridge installation may require a permit.
- Incentivize access provided by private landowners to the extent possible (i.e. Walk-In-Access, Conservation Easements, Land Exchanges, Acquisitions, etc) and provide for improved infrastructure at access points (i.e. walk-through gates or other infrastructure at fences).
- Develop off-road parking opportunities adjacent to upland game plot(s).
- Identify in the plan that camping is not allowed on WMA and post at the expanded parking area(s).

FIRE MANAGEMENT PLAN

The use of prescribed fire and herbicide applications are the preferred methods for vegetation management on the WMA and will be used to maintain a diversity of age classes on a rotational basis to meet the various life cycle needs of wildlife on the WMA. All prescribed fire activities will be coordinated with staff from the State of Utah Division of Forestry, Fire and State Lands.

The advisory committee developed the following strategy to help guide the use of prescribed fire on the WMA:

- Use prescribed (Rx) fire on a rotational basis with a target of every 5-10 years within wetland areas.

VII. SUMMARY STATEMENT OF PROPOSED USES

The Bicknell Bottoms WMA will be used primarily to protect and enhance waterfowl, upland game, fish and their habitats. In addition, many other types of wildlife both terrestrial and aquatic, along with their habitats will similarly receive protection and enhancement. Human uses that will be allowed and promoted include hunting, fishing and wildlife viewing.

VIII. MONITORING AND EVALUATION

The Bicknell Bottoms WMA HMP advisory committee developed the following goals, objectives and strategies to guide the monitoring and evaluation of the implementation of the HMP:

- Monitor Effects of Implemented Actions to Further Inform Future Adaptive Management Decisions
    - Involve interested committee members in implementation of actions identified in the Habitat Management Plan.
        - Invite committee members to participate with dye tests and drone topo evaluation to determine actual corridors for vegetation management strategies outlined above.
        - Invite committee members to assist as volunteers during vegetation management treatments, additional upland plantings, parking lot development, and any other active management taking place on the WMA.
    - Provide an annual progress report each January to the committee and receive feedback for needed adaptive management strategies.
        - Use this annual reporting meeting to evaluate the successfulness of the vegetation management strategy to define corridors, including their compatibility with maintaining waterfowl habitat.
        - Identify progress in implementation of the Habitat Management Plan and determine next steps..

IX. APPENDICES

APPENDIX A - BICKNELL BOTTOMS WMA HMP ADVISORY COMMITTEE GOALS, OBJECTIVES AND STRATEGIES DOCUMENT

Bicknell Bottoms Management Goals, Objectives, and Strategies

- Provide Water and Wetland Management with Minimal Impact to Neighbors
    - Increase efficiency of water conveyance through the WMA while still maintaining waterfowl habitat characteristics and within the established regulatory frameworks provided.
        - Conduct annual vegetation treatments beginning in the summer of 2022 using herbicide and tracked Marsh Master equipment to define corridors (width to be determined by taking reference widths on existing channels in Fremont River and Pine Creek) from the Fremont River to Pine Creek and some private land springs to Pine Creek in an effort to encourage flow and establish a channel over the next 5 years. Approximate location of corridors are highlighted in map 4 of Appendix B. Exact treatment locations will be determined using dye tests and topographical drone technology. If successful, maintenance of the corridors will continue into the future.
        - Pursue permit applications (Stream Alteration, ACOE) to establish a channel through direct actions on WMA if vegetation management strategy defined above is deemed unsuccessful.
        - Use prescribed (Rx) fire on a rotational basis with a target of every 5-10 years within wetland areas.
        - Develop infrastructure to use DWR water rights on targeted areas. This may require changes in points of diversion and other planning, and implementation is dependent on those changes being approved and will not be a first priority in implementation of the Habitat Management Plan.
        - Assist efforts to establish debris control structures upstream of Bicknell Bottoms to reduce future debris flows into the WMA.
        - Provide support to adjacent landowners seeking to remedy recent and future debris flows. If requested, DWR aquatic staff will work with

adjacent landowners to develop these restoration plans and assist in pursuing the necessary permits.

- Decrease and/or mitigate for the loss of grazing on neighboring properties caused by the flooding of their pastures.
  - Conduct annual vegetation treatments beginning in the summer of 2022 using herbicide and tracked Marsh Master equipment to define corridors (width to be determined by taking reference widths on existing channels in Fremont River and Pine Creek) from the Fremont River to Pine Creek and some private land springs to Pine Creek in an effort to encourage flow and establish a channel over the next 5 years. Approximate location of corridors are highlighted in map 4 of Appendix B. Exact treatment locations will be determined using dye tests and topographical drone technology. If successful, maintenance of the corridors will continue into the future.
  - Pursue permit applications (Stream Alteration, ACOE) to establish a channel through direct actions on WMA if the vegetation management strategy defined above is deemed unsuccessful.
  - Provide support to adjacent landowners seeking to remedy recent and future debris flows. DWR aquatic staff will work with adjacent landowners to develop these restoration plans and assist in pursuing the necessary permits.
  - Identify nearby properties eligible for the Walk-In-Access program and provide application assistance to interested parties.
  - Continue to pursue land exchanges with neighboring landowners that are beneficial to the landowner and DWR.
- Achieve a greater understanding of water flow through Bicknell Bottoms.
  - Identify opportunities for and pursue installation of additional gauging stations or other water flow measurement devices. Locations include 1 on Fremont and 1 on Pine Creek.

- Protect Waterfowl, Waterfowl Habitat, and Waterfowl Hunting Opportunities
  - Achieve diversity of age structure and habitat types within the vegetative and aquatic community to provide for the life cycle needs of the various waterfowl species that use the WMA.

        - Use prescribed (Rx) fire on a rotational basis with a target of every 5-10 years within wetland areas.
        - Develop infrastructure to use DWR water rights on targeted areas if feasible. This may require changes in points of diversion and other planning and its implementation is dependent on those changes being approved and will not be a first priority in implementation of the Habitat Management Plan.
        - Evaluate effects of the vegetation management strategy to define a corridor from the Fremont River to Pine Creek thus informing future adaptive management strategies in regards to their impacts to waterfowl habitat.
        - In conjunction with vegetation management corridors, develop holes in vegetation to allow for standing water using the Marsh Master and herbicide.
    - Maintain high quality hunting opportunities for waterfowl enthusiasts.
        - Identify nearby properties eligible for the Walk-In-Access program and provide application assistance to interested parties.
        - Install a footbridge across Pine Creek near the pheasant flight pens to increase ease of access to the north side of the wetland from the south access point. Depending on design, bridge installation may require a permit.
        - Incentivize access provided by private landowners to the extent possible (i.e. Walk-In-Access, Conservation Easements, Land Exchanges, Acquisitions, etc) and provide for improved infrastructure at access points (i.e. walk-through gates or other infrastructure at fences).

- Protect Fish, Fish Habitat, and Fishing Opportunities
    - Continue to improve fish habitat and overhead cover.
        - Conduct annual vegetation treatments beginning in the summer of 2022 using herbicide and tracked Marsh Master equipment to define corridors (width to be determined by taking reference widths on existing channels in Fremont River and Pine Creek) from the Fremont River to Pine Creek and some private land springs to Pine Creek in an effort to encourage flow and establish a channel over the next 5 years. Approximate location

of corridors are highlighted in map 4 of Appendix B. Exact treatment locations will be determined using dye tests and topographical drone technology. If successful, maintenance of the corridors will continue into the future.

        - Use bank anchored log structures to increase overhead cover in the current existing fishable channels as well as any additional channels that establish as a result of the implementation of the vegetation management strategy.
    - Provide a quality fishing experience.
        - Install a footbridge across Pine Creek near the pheasant flight pens to increase ease of access to the north side of the wetland from the south access point. Depending on design, bridge installation may require a permit.
        - Develop off-road parking opportunities.

- Protect Upland Game, Upland Game Habitat, and Upland Game Hunting Opportunities
    - Increase and improve upland game habitat.
        - Expand upland game plantings in existing upland plot to the extent possible.
        - Develop a second upland plot on the western edge of the property if irrigation is deemed allowable under whirling disease recommendations.
        - Develop additional plantings on the north side of Pine Creek adjacent to existing upland plot - dependent on equipment access (possibly administrative ATV access across the footbridge).
    - Protect and enhance pheasant populations.
        - Explore possibilities for predator control using a bounty for racoon control (possibly in conjunction with the county through a UDAF grant and SFW supplement).
        - Explore possibilities to bring in wild pheasants from another state and bolster or create on-site wild populations.
    - Provide a high quality hunting opportunity for upland enthusiasts.
        - Develop off-road parking opportunities adjacent to upland game plot(s).
        - Identify in the plan that camping is not allowed on the WMA and post no camping signs at the expanded parking area(s).

        - Install a footbridge across Pine Creek near the pheasant flight pens to increase ease of access to the north side of the wetland from the south access point. Depending on design, bridge installation may require a permit.
        - Release pheasants during the hunt in the second upland game plot identified above, regardless of whether irrigation is deemed allowable.

- Monitor Effects of Implemented Actions to Further Inform Future Adaptive Management Decisions
    - Involve interested committee members in implementation of actions identified in the Habitat Management Plan.
        - Invite committee members to participate with dye tests and drone topo evaluation to determine actual corridors for vegetation management strategies outlined above.
        - Invite committee members to assist as volunteers during vegetation management treatments, additional upland plantings, parking lot development, and any other active management taking place on the WMA.
    - Provide an annual progress report each January to the committee and receive feedback for needed adaptive management strategies.
        - Use this annual reporting meeting to evaluate the success of the vegetation management strategy to define corridors, including their compatibility with maintaining waterfowl habitat.
        - Identify progress in implementation of the Habitat Management Plan and determine next steps.

Bicknell Bottoms Waterfowl Management Area Habitat Management Plan Advisory Committee

-Troy Justensen (Sportsmen)

-Dave Behunin (Blue Ribbon Council)

-Mike James (Anglers)

-Jeremy Bone (Waterfowl)

-Scott Christensen (Upland Game)

-Dennis Blackburn (Wayne County Commission and Adjacent Landowner)

-Steve Albrecht (Bicknell Town Council and Adjacent Landowner)

-Seth Taft (Adjacent Landowner)

-Boone Taylor (Adjacent Landowner)

-Kerry Cook (Conservation District)

-Phillip Pace (Downstream Water User and Adjacent Landowner)

-Mike Christensen (Downstream Water User)

APPENDIX B - BICKNELL BOTTOMS WMA HMP ADVISORY COMMITTEE CHARTER

Charter

Bicknell Bottoms Waterfowl Management Area Habitat Management Plan Committee

1) Purpose:

    a. The purpose of the Bicknell Bottoms Waterfowl Management Area Habitat Management Plan Committee is to assist the Utah Division of Wildlife Resources (DWR) in updating and revising the Bicknell Bottoms WMA Habitat Management Plan.

2) Authority:

    a. The Utah State Legislature has directed DWR to prepare a Habitat Management Plan (HMP) for each Waterfowl Management Area (WMA). The HMP is the overarching document providing guidance for management of the WMA. The current Bicknell Bottoms WMA HMP was developed in 2008. After review and recommendations from the local governments, the Resource Development Coordination Council, the Habitat Council, the Regional Advisory Council and the Wildlife Board (as needed), the Division Director has the authority to adopt the plan.

    b. The Utah State Legislature also directed DWR to invite persons who may have interest in or use the land for agriculture, mining, or other commercial interests, hunting, fishing, recreation, adjacent landowners, and local government officials to provide input. The Bicknell Bottoms Waterfowl Management Area Habitat Management Plan Committee is the vehicle the DWR will use to invite persons who may have an interest in how the land is managed and to participate in the management planning process.

    c. The Utah State Legislature further directed DWR that each HMP shall include: a statement of the proposed or anticipated uses, a description of any management limitations or conditions covering the area, an inventory of the existing conditions,

a statement of the desired future condition of the area, a list of strategies that may be implemented to achieve the desired future condition, and a description of any reallocation of forage, water, or other resource appurtenant to the land.

d. The authority of the Bicknell Bottoms Waterfowl Management Area Habitat Management Plan Committee is limited to that of advising DWR on issues and concerns regarding the management of the Bicknell Bottoms WMA. The committee is fundamental to the development of the HMP, but the content of the plan may be altered by DWR or any other authorized body prior to its approval and implementation.

3) Expectations and Time Frame:

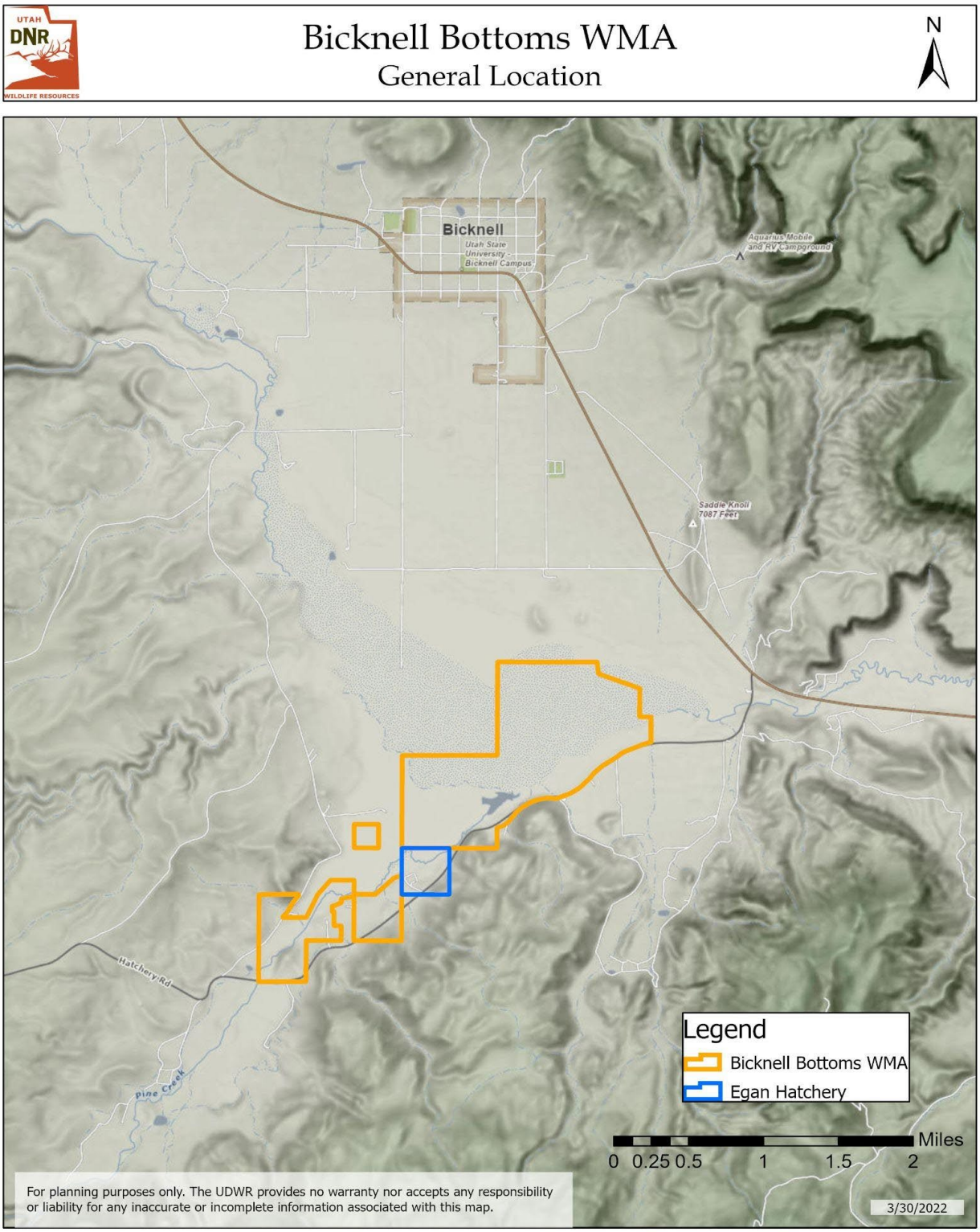
a. DWR anticipates producing a draft HMP by April 1, 2022.
b. The plan will include biological and social assessments, issues, goals, objectives, and strategies as appropriate.

4) Roles and Responsibilities:

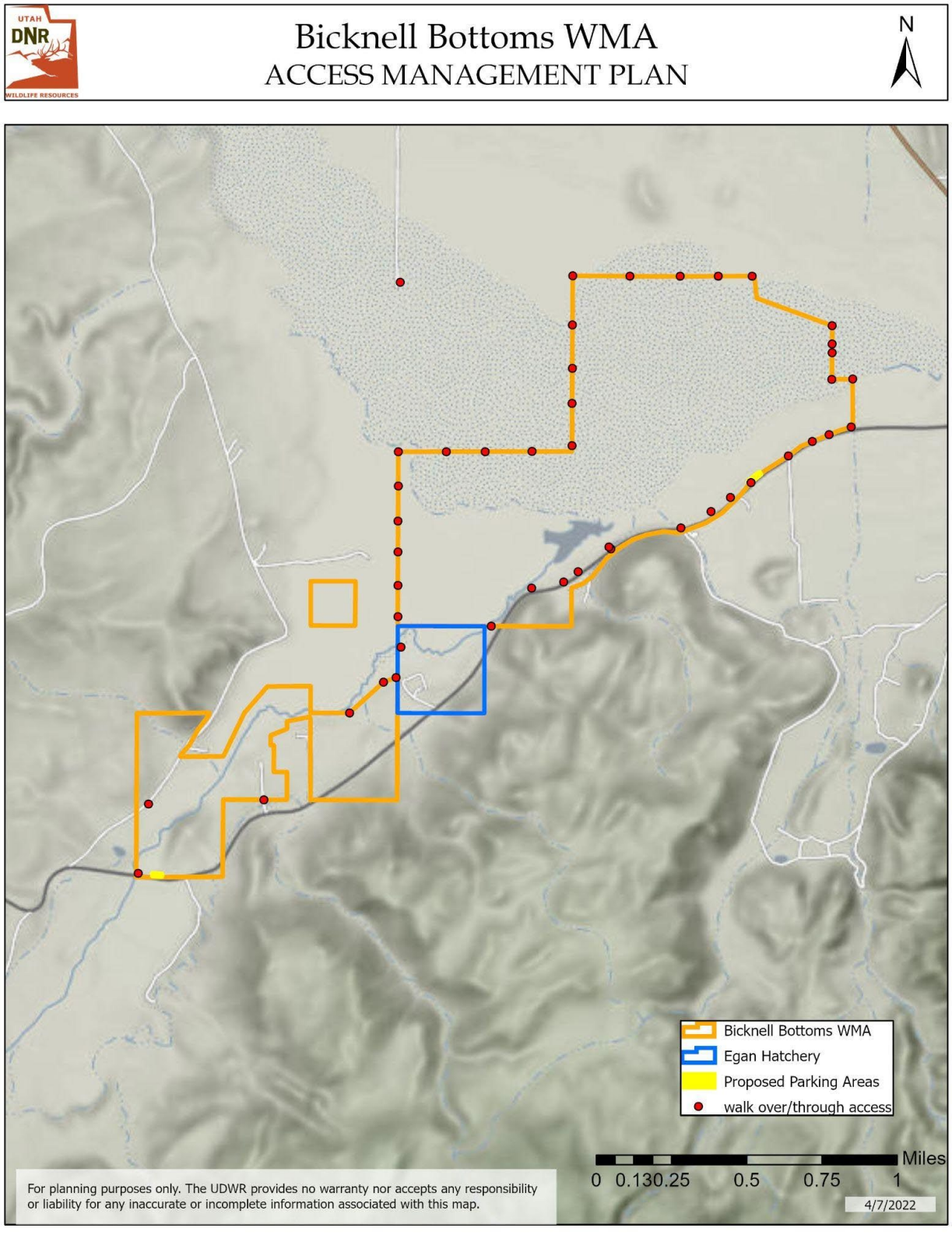
a. Members of the Bicknell Bottoms Habitat Management Plan Committee are expected to:
    i. Commit to participating through March 5, 2022.
    ii. Attend meetings regularly. Each member may designate one alternate, who may attend meetings and represent the member in their absence.
    iii. Support group decisions, which will be made through the process of consensus (meaning all will have a chance to be heard, and we can support or live with the decisions that are made).
    iv. Develop and abide by ground rules formed by the committee.
    v. Upon completion of the Bicknell Bottoms HMP, and approval by the DWR Director, the committee will be dissolved.

APPENDIX C - MAPS

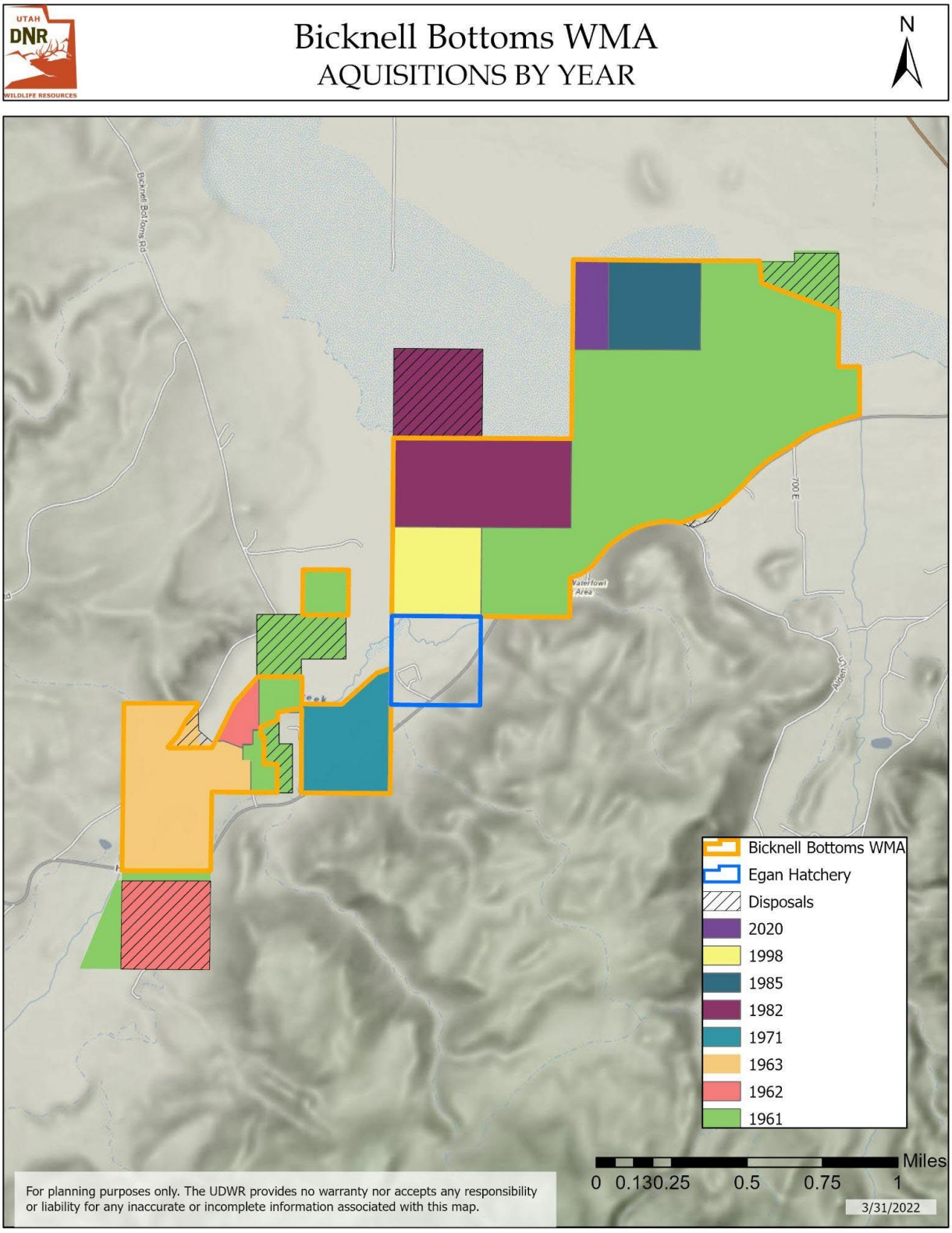
MAP 1 - LANDS COMPRISING THE BICKNELL BOTTOMS WILDLIFE MANAGEMENT AREA



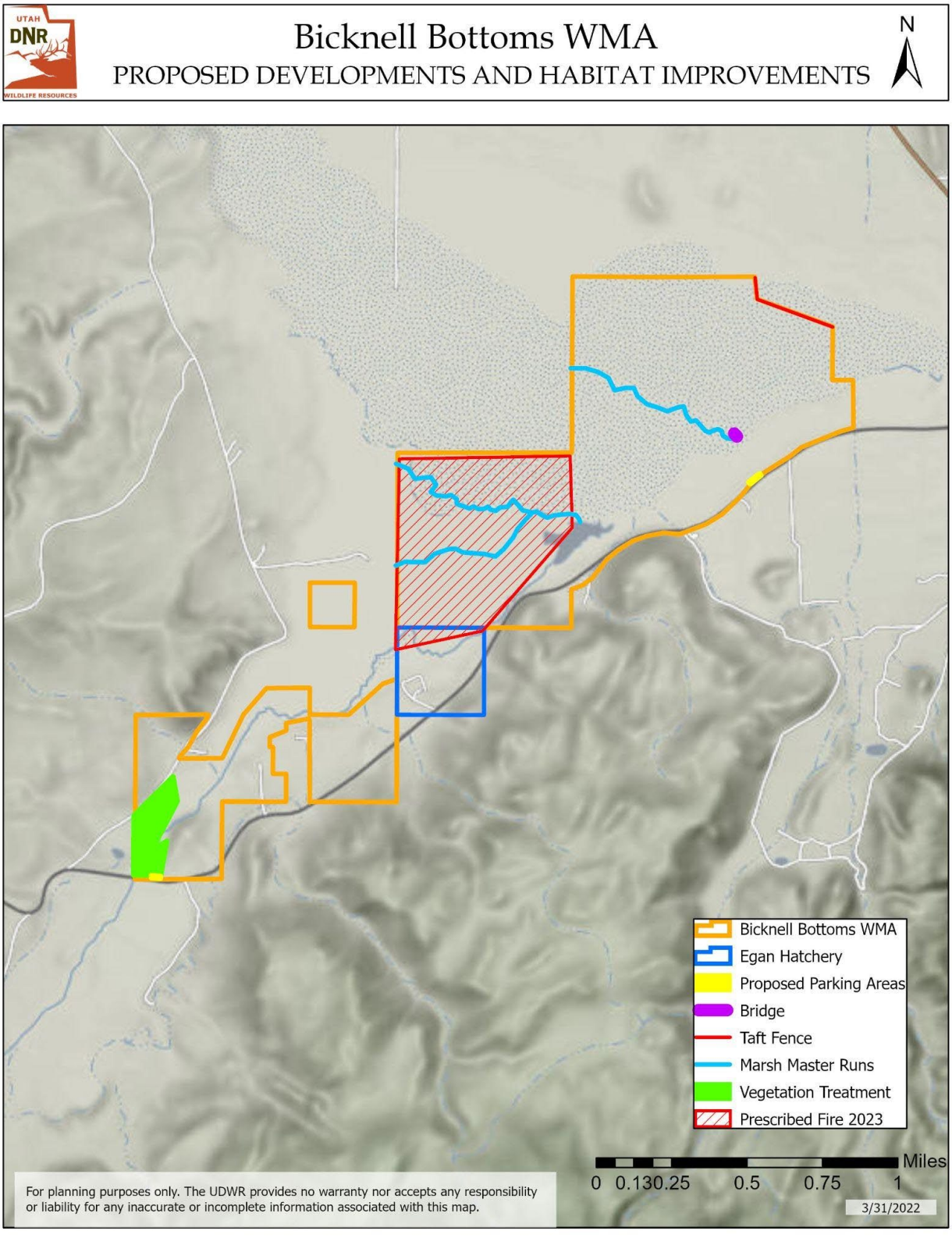
MAP 2 - ACCESS MANAGEMENT PLAN



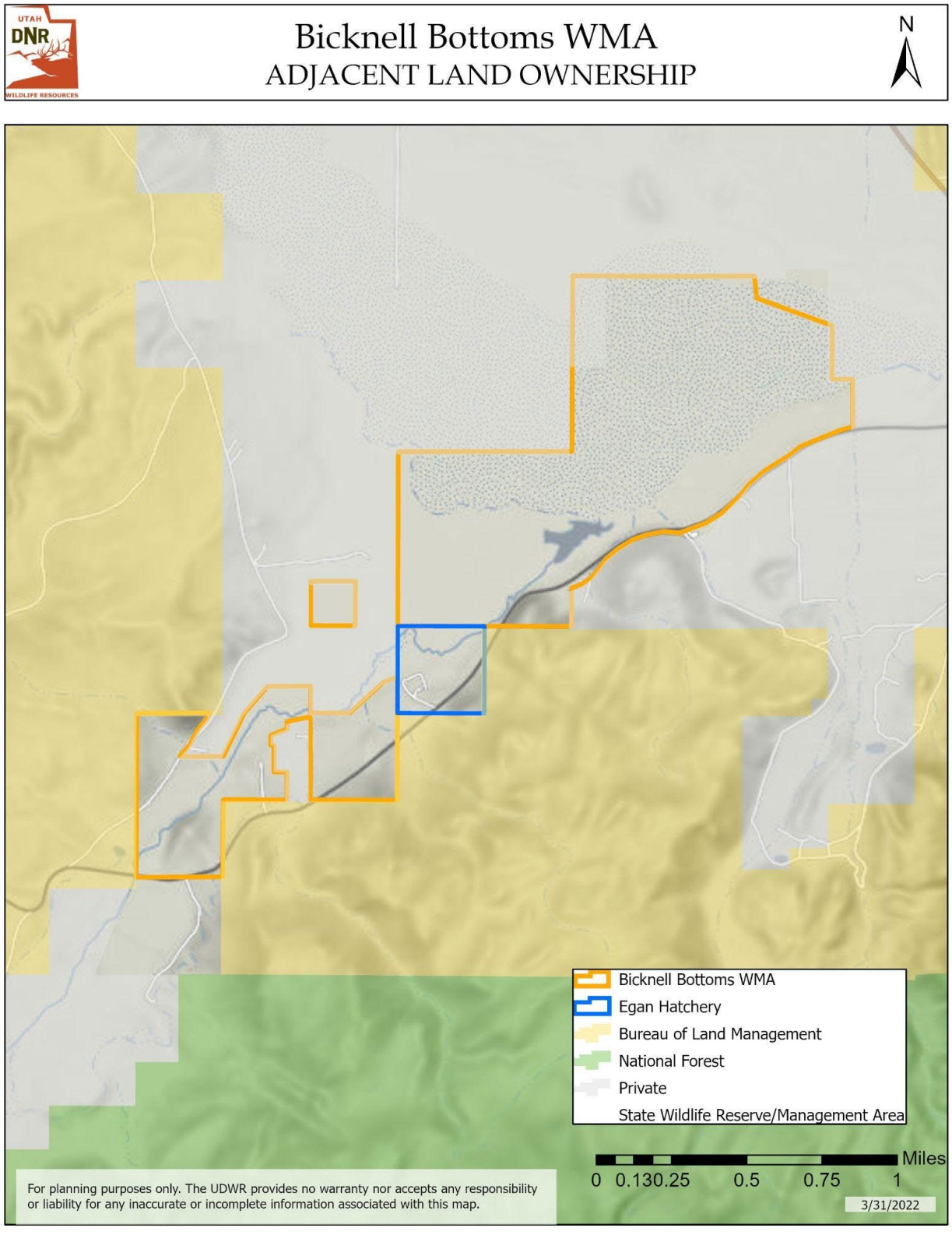
MAP 3 - BICKNELL BOTTOMS WMA ACQUISITIONS BY YEAR INCLUDING DISPOSALS



MAP 4 - PROPOSED DEVELOPMENTS AND HABITAT IMPROVEMENTS



MAP 5 - ADJACENT LAND OWNERS



APPENDIX D - DEEDS

Copies of deeds associated with the Bicknell Bottoms WMA can be found at the Southern Regional Office of the Utah Division of Wildlife Resources, 1470 North Airport Road, Cedar City, Utah 84721

APPENDIX E - WATER RIGHTS INFORMATION

Bicknell Bottoms Water Rights

Water Right #	Source	Priority	Flow	Irrigated Acres	Stockwatering	Domestic #
95-511	Pine Creek Spring	1880	3.0 cfs	54.00	40 elu's	2 families
95-515	Pine Creek	1898	2.04 cfs	30.00		
95-516	Pine Creek Spring	1898	2.30 cfs	20.00	30 elu's	
95-1648	Pine Creek Spring	1882	3.0 cfs	40.80	200 elu's	2 families
95-4785	Pine Creek	1898	1.02 cfs	28.00		
95-4895	Pine Creek	1898	0.12 cfs	3.0		

Egan Fish Hatchery Water Rights

Water Right #	Sources	Priority	Flow	Irrigated Acres	Domestic #	Fish Culture
95-583	Pine Creek & Pine Springs	3/05/1965	18.00 cfs			fish culture & propagation
95-584	Bullard Spring	3/05/1965	4.0 cfs			Fish culture & propagation
95-678	Underground Water Well	5/11/1970	1.0 cfs	0.25	2 families	fish hatchery, fish culture & 10 employees