**WASHINGTON STATE MANAGEMENT PLAN FOR:**

# Wild Turkey

November 2005 – June 2010

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## State of Washington
**CHRISTINE GREGOIRE**
**GOVERNOR**

## Washington Department of Fish and Wildlife
**Jeff P. Koenings, Ph.D.**
**Director**

## Wildlife Program
**Dave Brittell**
**Assistant Director**

## Game Division
**Dave Ware**
**Division Manager**

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# AN ADDENDUM TO THE GAME MANAGEMENT PLAN ENVIRONMENTAL IMPACT STATEMENT

**July 2003 – June 2009**

Washington Department of Fish and Wildlife
600 Capitol Way North
Olympia, Washington 98501

Prepared by:
Mick Cope
Upland Game Section Manager
And
Donna Gleisner

Approved:

_____ _____

**Director, Washington Department of Fish and Wildlife** **Date**

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# EXECUTIVE SUMMARY

Efforts to introduce wild turkeys into Washington have been made since the early 1900s. Since 1960, when the first wild-trapped turkeys were introduced into the state from Arizona, New Mexico, and Wyoming, turkeys have maintained naturally reproducing populations in much of the forested portion of eastern and southwestern Washington. Currently, three sub-species of wild turkey (Merriam's, Rio Grande, and eastern) can be found in Washington with some Merriams/Rio Grande crosses likely in some areas of eastern Washington.

As the result of an aggressive introduction program that began in the mid-1980's, Washington's wild turkey populations have experienced substantial increases in density and distribution. Recreational interest in the wild turkey has increased along with the populations. The number of turkey hunters in Washington has increased from 689 in 1984 to over 15,000 in 2004. Wild turkeys are also popular with bird watchers and photographers who also take advantage of the turkey calling experience.

Wild turkeys are adaptable to a broad range of habitats and weather conditions. In Washington, management efforts have focused on matching sub-species to the habitat types that most closely approximate that of their native range. Available food resources, nesting and roosting habitat, and precipitation regimen are some of the factors that have been considered through time.

Wild turkeys eat many different kinds of plants, seeds and fruits, and invertebrates (insects, spiders, snails), usually focusing their diets on the food items that are most available. In general, the diet of an adult turkey is made up of 75% plants and 25% insects while the diet of a poult ranges from 75% to 90% insect matter. During the winter, turkeys in eastern Washington gather into large flocks, sometimes of 100 or more birds, and are commonly found around a source of artificial feed like oat hay or other grain.

Throughout their range, wild turkeys are vulnerable to various diseases and parasites. This is complicated by the fact that they are susceptible to many of the same diseases that domestic chickens and turkeys carry. In efforts to keep these avian diseases from impacting both wild and domestic stock, the Washington Department of Fish and Wildlife (WDFW) tested all of the turkeys that were imported from other states prior to release. In addition, many of the turkeys that have been trapped within the state have also been tested. To date, there have been no positive results reported for any of the birds tested.

The number of turkey nuisance complaints has increased over the past 10 years, especially in parts of northeastern Washington where the populations have expanded the most. WDFW response to these complaints has ranged from telephone conversations with landowners to trapping offending birds. In very few situations, lethal removal of a specific number of birds has been authorized.

The first turkey hunting season was conducted in the fall of 1965 (one and a half days in northeastern Washington). The length of the season increased over time and in 1970, the first male only spring hunting season was conducted. In the late 1980's, the spring season was three weeks long and a one-week fall either sex season was also held. In 1994, the current 30 day spring season was established and the bag limit was increased to three. In addition, a special youth hunt was established in 2003 which contributed to the more than 63,000 days hunters spent afield hunting turkeys that year.

Currently, WDFW relies on turkey hunter harvest reports to provide an index to turkey population status. In an effort to provide a harvest-independent measure of population growth, WDFW is proposing to enlist the help of volunteers to implement a wintertime road transect count. WDFW is not recommending a harvest-independent survey in western Washington because the eastern sub-species does not typically gather in large flocks and it is difficult to obtain adequate turkey counts in the dense forest habitat with low turkey densities.

Establishing and managing self-sustaining populations of wild turkeys in the most suitable habitats continues to be a primary objective of the wild turkey management program. Since a vast majority of the most suitable habitats currently support turkeys, very few areas are designated as potential introduction areas. Also, there are no plans to release additional birds in areas where significant introduction plans were recently implemented.

Damage and nuisance issues will continue to arise, however, trapping will not be a primary mitigation response. A nuisance response "toolbox" that focuses on alternative actions has been developed. When alternative methods fail to address the nuisance problem, trapping is still an option. Turkeys trapped in response to nuisance and damage complaints will be released within the Primary Wild Turkey Management Area in or adjacent to currently occupied areas. In addition, trapped turkeys may also be released in the potential introduction area if the sub-species is identified as the most appropriate for that area.

Since wild turkeys are not native to Washington, questions arise about the impact that wild turkeys might have on native wildlife and plants. There have been many wild turkey studies completed across the United States (in both native and introduced range), and none of these studies have indicated that wild turkeys have negative population-level impacts on plants, animals, or other birds.

Before turkeys can be released in the Potential Introduction Area, the proposal must be evaluated by local, regional and program staff. The evaluation will include, at a minimum, examination of current and potential nuisance and damage issues, impacts to existing management actions, impacts to the long-term survival of state and federally listed species (e.g., endangered and threatened) as well as candidate and sensitive species, and recreational and economic benefits. Measures to mitigate potential negative impacts, if they exist, will be identified. If impacts cannot be mitigated or no mitigation measures can be found, turkeys will not be released on that site.

Additional biological and management information is needed to help manage turkeys in the state of Washington. Specifically, WDFW is interested in conducting or helping conduct investigations to address the issues of inter-specific competition and wild turkey nutrition throughout the state, and habitat utilization and limiting factors analysis in western Washington.

Conducting habitat improvements for the wild turkey is going to receive greater emphasis in the future of the wild turkey management program. Habitat improvements can be done in cooperation with other state or federal agencies as well as non-governmental organizations (e.g., the National Wild Turkey Federation). In many cases, habitat improvements made for the wild turkey will also improve habitat conditions for other species in the area. Habitat projects that provide these multiple values will be a priority.

Providing quality hunting opportunities will continue to be a priority for the turkey management program. Information gathered from surveys of hunters has identified hunter access to private property as one of the most important issues to Washington hunters. As a piece of an overall hunter access program, efforts will be made to improve access for turkey hunters in much of the state. In addition, WDFW will continue to collect the best harvest information available through the current mandatory reporting system. This information is critical to providing the appropriate level of recreational opportunity.

No program is complete without a concerted effort provide the public with information about the wild turkey program in general as well as specific information about avoiding negative interactions, ongoing turkey management activities, and the variety of recreational opportunities available. There may be opportunities to partner with various organizations and agencies to develop and distribute many of these materials.

# SECTION ONE: NATURAL HISTORY

## Physical Characteristics

Wild turkeys (*Meleagris gallopavo*) belong to the gallinaceous bird family Phasianadae along with other fowl-like birds. They have typical game-bird features including strong, scaly feet, short, rounded wings, and a short, strong beak. There are observable physical differences between males and females, especially when looking at the head. Males (gobblers) can have various shades of red, white and blue on their heads, but females (hens) have darker, duller colored heads. Both sexes have very few feathers on their head and upper neck (Pelham and Dickson 1992).

Adult male plumage is dark and striking with its metallic iridescence in shades of red, green, copper, bronze and gold. Breast and upper back feathers are black tipped giving it a darker appearance. The female's plumage is duller, appearing brown or lighter, due to the buff or chestnut colored tips on breast and upper back feathers. Subspecies can usually be distinguished based on feather color of lower back and tail margins. Eastern turkeys have chestnut tail feather tips, Rio Grande's have cinnamon or pinkish buff tips, and Merriam's have lighter, ashy-white tipped feathers.

Gobblers continuously grow a tuft of hair-like fibers (beard) from the upper chest, averaging 9 to 11 inches long. Hens can also grow a beard, but only about one-third of them sprout any 'hair' (Williams and Austin 1988). Hen beards are shorter and thinner, usually less than 7 inches long (Pelham and Dickson 1992). Gobblers typically develop a sharp, curving bony growth, or spur, on the lower leg that can sometimes grow longer than two inches.

Adult males usually weigh between 17 and 21 pounds, but can exceed 25 pounds, depending on the subspecies. Females normally weigh between 8 and 11 pounds. Gobblers, at attention, can stand 40 inches tall; hens stand about 30 inches tall (Mosby and Handley 1943). Both sexes can run swiftly at more than 12 miles/hour (Mosby and Handley 1943) and adults have been reported flying at speeds up to 55 miles/hour. They prefer running to flying to escape danger even though they're one of the fastest flying game birds.

The turkey's laser-sharp vision, although not three-dimensional, is legendary. It can swiftly assimilate visual details and with eyes located on each side of its head, slight movements allow a turkey to quickly scan 360 degrees (Pelham and Dickson 1992). Turkeys also have keen hearing, but like most birds, a poorer sense of taste and smell.

## Geographic Distribution

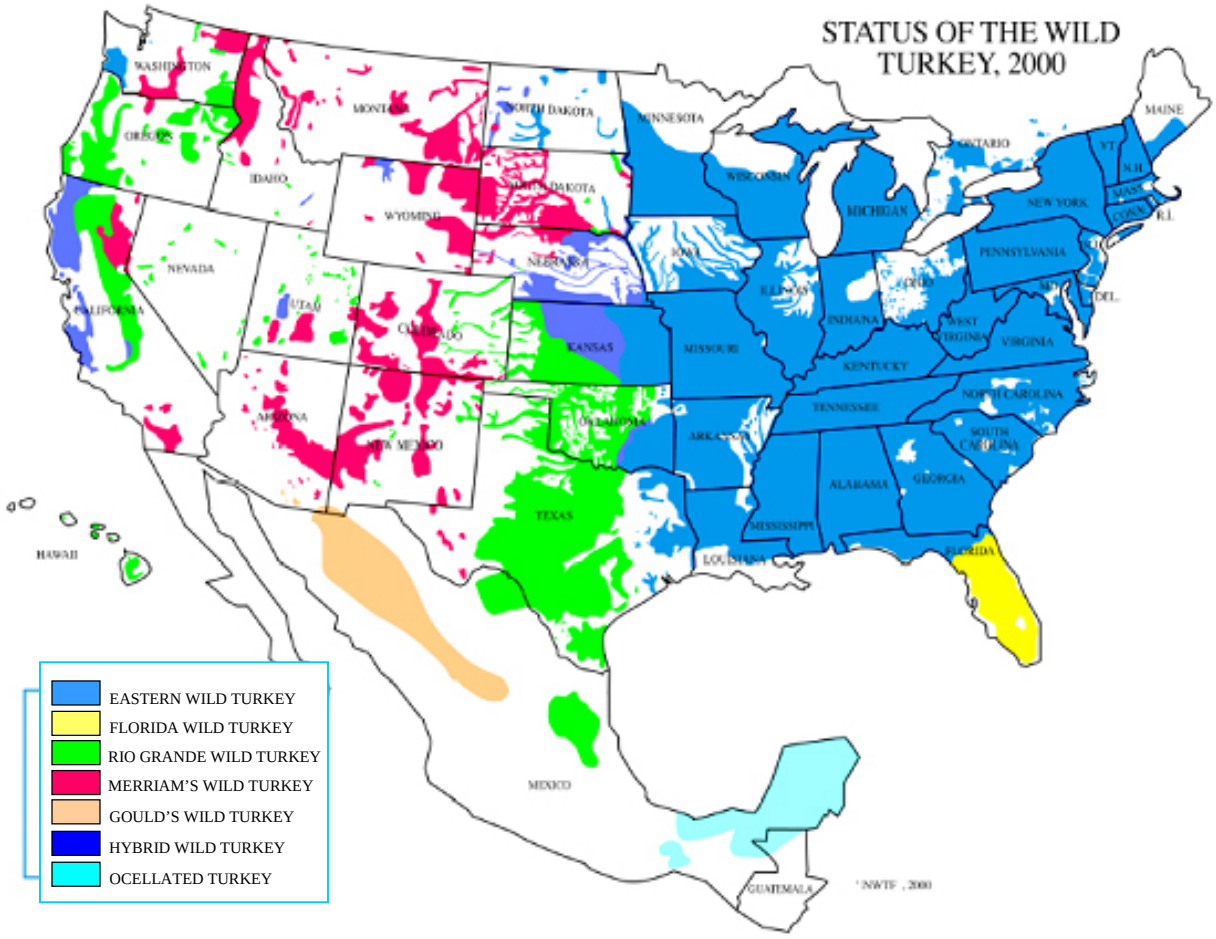
There are five subspecies of wild turkey in North America. They are the eastern wild turkey (*M. g. silvestris*), native to the eastern half of the United States; the Merriam's (*M.g. merriami*), native to the mountainous regions of the south-central U.S; the Rio Grande turkey (*M.g. intermedia*), native to the south-central Great Plains states and

northeast Mexico; the Florida wild turkey (*M.g. osceola*), native to the southern half of Florida; and the Gould's (*M.g. mexicana*) turkey, native to northwest Mexico and parts of southern Arizona and new Mexico. The Ocellated turkey is a species of turkey found in Mexico (Kennamer et al. 1992).

Wild turkeys were abundant and widely distributed throughout much of North America when settlers first arrived. Native Americans and early settlers depended on turkeys as a reliable and important source of food. However, by the early 1900s, wild turkey populations were wiped out or reduced to dangerously low levels, except in the more inaccessible portions of their original range. It is theorized that there were two major factors responsible for nearly extinguishing wild turkeys—excessive hunting by early settlers for table and profit, and logging and clearing forests (Kennamer et al. 1992).

Recovery of wild turkey populations from near extinction to present levels is a success of modern wildlife management. In addition, wild turkeys have been introduced into many states, like Washington, that did not historically support turkeys. Kennamer and Kennamer (1990) estimated wild turkey populations to be 3.5 million birds in 1992 in the United States, Canada and Mexico. Wild turkeys are now found in every state but Alaska (Figure 1) (Tapley et al. 2000).

Figure 1. Distribution map for the 5 sub-species of wild turkeys in the United States and Mexico in 2000.



Although several attempts to introduce captive-bred turkeys into Washington in the early 1900's were unsuccessful, three of the five subspecies of North American wild turkey have been introduced into Washington. Merriam's turkeys were the first to arrive in 1960, from Arizona, New Mexico and Wyoming. They were released into the oak (*Quercus spp*.) and pine (*Pinus spp*.) forests of south central and NE Washington (Ferry, Klickitat, Lincoln, Okanogan and Stevens counties). Rio Grande turkeys from Texas were next, released in 1984 into the transition zone between arid rangelands and forests in of eastern Washington (Asotin, Chelan, Columbia, Garfield, Lincoln, Walla Walla, Whitman, Kittitas, Chelan, and Yakima counties). In 1987 eastern wild turkeys from Pennsylvania arrived and were placed in the mixed forest areas in western Washington (Cowlitz, Grays Harbor, Lewis, Pacific and Thurston counties).

Since the original introductions, Merriam's turkeys have been introduced in areas along the eastern foothills of the Cascade Mountains. Merriams/Rio Grande crosses probably exist in areas of eastern Washington. Figure 2 shows the current wild turkey distribution in Washington based on existing Game Management Unit (GMU) boundaries. However, not all portions of identified GMUs currently support turkeys.

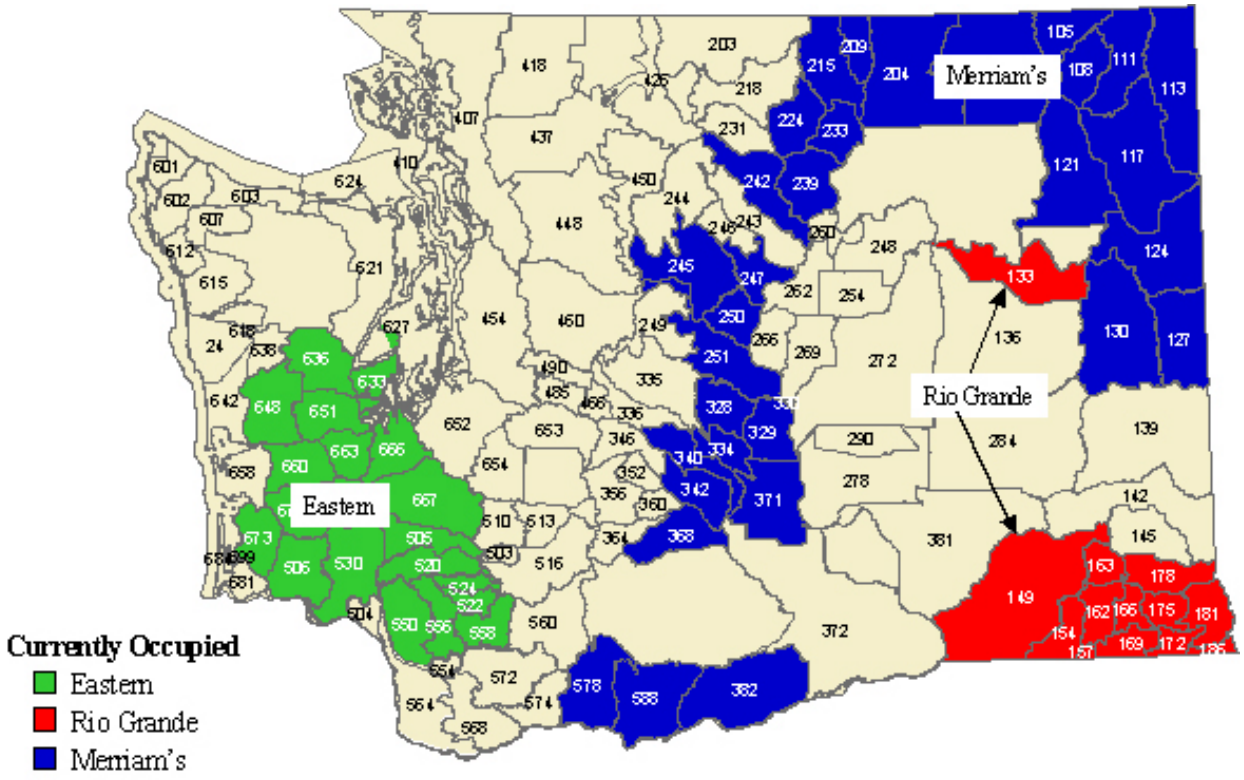



Figure 2. Distribution of Washington's three sub-species of wild turkeys in 2004 using existing Game Management Unit boundaries.

## General Habitat Requirements

Wild turkeys are adaptable to a broad range of habitats and weather conditions, as their ability to currently live in more than three-quarters of the United States (and many other countries) attests. Optimum wild turkey habitat generally includes a diverse landscape that contains a wide variety of trees, shrubs, perennials, forbs, ground covers and grasses at different stages of growth (Dickson et al. 1978). This diversity provides turkeys with the different types of nesting, rearing, resting, roosting and hiding places they need as they grow from egg to adult, and includes a variety of food sources that likely ensures there will be adequate food when overall abundance of some foods is low (Dickson et al. 1978).

From two decades of intense research throughout the U.S., we now know that: (1) too much water (marshes, deep persistent snow) or too little (intermittent streams and ponds, arid land that can't grow trees) ultimately determines the turkey's distribution; and (2) suitable habitat must contain appropriate trees and grasses in addition to enough precipitation. Trees provide nuts and fruits, daytime rest and escape areas, and most importantly, nighttime roosts. Grasses and forbs provide food for adults and homes for insects, which are very important for newly hatched turkeys (Mackey 1982, Porter 1992).

Having all these elements within a turkey's home range is what creates ideal habitat (Brown 1980). The thinking 60 years ago was that turkeys needed the vast majority of their home range in forest, but research in Missouri, Iowa, and Minnesota suggests that the optimum mix is closer to 50 percent forested to 50 percent open land (Little 1980). Extensive areas of cleared land are not suitable as turkey habitat (Porter 1992).

### Nesting Habitat

Even though hens nest in such divergent locales as forests, hayfields and power right-of-ways, researchers in the 1980s found that in each case, well-developed grasses, ground covers and shrubs to 3 feet high typically surround the nest (Porter 1992b). This kind of undergrowth conceals the nest from ground-based predators, but allows the hen a commanding view above the vegetation to identify potential threats (Holbrook, Vaughan, and Bromley 1987). Hens often select nest sites with overhead forest canopy of 50 to 90 percent (Goerndt 1983) and show a preference for sites with moderate soil moisture (Goerndt 1983, Lazarus and Porter 1985). Nests themselves are often found at the base of trees or dense shrubs, or against fallen logs, rock outcrops or hillsides so as to be completely hidden from one side (Healy 1992, Porter 1992).

### Rearing Habitat

Open grassy areas with scattered trees provide the best environment for raising turkey broods (Hayden 1979, Metzler and Speake 1985). Studies from 11 states all describe brood habitat as completely covered with forbs and grasses averaging 20 inches high, with a 10 to 50 percent overhead cover (Porter 1992). The grasses and other non-woody vegetation provide seeds and greens for hens and abundant insects and spiders for protein-hungry poults (young turkeys) (Hurst and Poe 1985). At the same time, this type of vegetation offers excellent protection from predators. Hens can easily see over grasses and herbs between 12 and 28 inches high to scan for predators, while poults

remain hidden and can move freely (Porter 1980, Exum et al. 1985, Songer 1987). At 12 to 15 days old, poults can fly and are too big to gather under the hen, so nearby trees provide shelter from heat and inclement weather, as well as a safe place to escape predators (Porter 1992).

### Fall and Winter Habitat

During fall and winter, the wild turkey's priorities are food and roosting areas. In the fall, food remains critical for yearling growth and for adults adding fat reserves, so forests that offer seeds, nuts and fruits as well as some green vegetation are sought out (Kennamer, Gwaltney, and Sims 1980). In some areas where snow more than 6 inches deep covers the ground for two to 16 weeks, spring seeps that don't freeze over become life-saving elements. They provide invertebrates and green vegetation for turkeys throughout the winter (Goerndt, Schemnitz, and Zeedyk 1985). Where agriculture predominates, a mix of cropland and forest appears highly suitable (Clark 1985, Kulowiec and Haufler 1985).

Turkeys don't seem picky about summer roosting spots, using almost any horizontal spreading structure 30 to 100 feet high near where they've been foraging (Porter 1992, Shaw and Mollohan 1992). However, turkeys are more particular about winter roosts – especially Merriam's and Rio Grandes, which tend to gather in large flocks and use traditional nighttime roosts (Hoffman 1968). Mackey (1984) and Lutz and Crawford (1987b) found that turkeys preferred the largest trees in the grove and roosted as high up as they could comfortably perch. When the temperature often dips below freezing, turkeys congregate where protected from prevailing winds, typically on the upper half of northeast facing slopes (Hoffman 1968, Boeker and Scott 1969, Goerndt 1983).

## Subspecies Habitat Requirements

### Eastern Turkey

Along the east coast of the United States, this dark colored subspecies resides in fairly moderate climates with warm, humid summers and moderate-to-cold winters. Rainfall amounts are about equal each month, and average 45 inches a year, similar to southwestern Washington's 50 inches annually (Wunz and Pack 1992).

The eastern turkey's native habitat is primarily oak-hickory and other hardwood forests containing sugar maple (*Acer saccharum*), red maple (*Acer rubr*um), American beech (*Fagus grandifolia*), yellow birch (*Betula alleghaniensis*), black cherry (*Prunus serotina*), eastern hemlock (*Tsuga canadensis*), white pine (*Pinus monticola*) and white oak (*Quercus alba*) (Wunz and Pack 1992). The mixed evergreen and deciduous forests of western Washington are similar, consisting of Douglas fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), red alder (*Alnus rubra*) and bigleaf maple (*Acer macrophyllum*) (Washington Department of Fish and Wildlife, unpublished report).

Easterns will nest in almost any habitat type - uncut hay fields, weed fields, dense shrub cover and open-understory forests (Hayden 1980). However, hens in the eastern states prefer, and are more successful in, extensive (rather than isolated) stands of brush with edges of herbaceous vegetation (Wunz and Pack 1992), while hens in the Midwest

prefer timber and semi-open woodlands, with a diverse moderate-to-dense understory (Kurzejeski and Lewis 1990). Western Washington's forests contain interspersed clearcuts and slash areas, which can provide the ground-level visual obstruction and semi-open feeding areas needed for nesting and raising broods.

In native areas Easterns use pastures, hayfields, clearings, log landings, forest access roads and if suitable, even forests, to raise their young (Ross and Wunz 1990, Wunz and Pack 1992); similar habitats are available in Washington. During fall and winter months, easterns tend to stay in the forest but will range into crop fields and clearings to eat grains and seeds (Wunz and Pack 92). A mix of cropland and forest cover seems to be highly suitable habitat (Porter 1992), and in both the northern and southern U.S., optimal fall/winter conditions may be a one-to-one ratio of forest cover to agricultural land (Little 1980).

## Merriam's Turkey

The native area of this light colored subspecies is the coniferous mountains and canyons of Colorado, New Mexico and Arizona, much of it relatively steep. These birds can handle extreme temperatures from – 35 to 100 degrees F (Shaw and Mollohan 1992). Precipitation in their native range averages more than 15 inches a year and is mainly heavy winter snowfall and summer thunderstorms. Northeastern Washington and areas in central Washington have a climate and topography that closely resemble this turkey's native conditions, including extreme temperature fluctuations, heavy snows and storms, and an average annual precipitation of 24 inches (Mackey 1982).

Native habitat for Merriam's turkey is primarily mixed conifer communities, consisting of ponderosa pine (*Pinus ponderosa*), Gambel oak (*Quercus gambellii*), pinon pine (*Pinus edulis*), Douglas fir (*Pseudotsuga menziesii*), white fir (*Abies concolor*), western white pine (*Pinus monticola*), limber pine (*Pinus flexis*), junipers (*Juniperus spp*.), spruces (*Picea spp.),* cottonwoods and aspens (*Populus spp.*) (Shaw and Mollohan 1992, Hoffman et al. 1993) Likewise, eastern Washington's forests contain ponderosa pine, Douglas fir*,* western white pine, Engelmann spruce (*Picea engelmannii*), plus other pines (*Pinus spp.)*, firs (*Abies*), Douglas maple (*Acer glabrum*), willows (*Salix spp*.), cottonwoods and aspens (*Populus spp.*).

Merriam's turkeys in New Mexico prefer to nest in mixed stands of ponderosa pine, spruce (*Picea spp*.), white fir, Douglas fir, aspen (*Populus tremuloides*) and white oak, Kamees 2002). The nest is often on a slope greater than 30 percent (Shaw and Mollohan 1992). In Washington, Merriam's nest among ponderosa pine, Oregon white oak (*Quercus garryana*) (Mackey 1982) as well as in mixed conifer stands with dense shrubs adjacent to deciduous riparian zones (Lutz and Crawford 1987).

The Merriam's commonly travels up to 20 miles between suitable summer and winter ranges, but have been known to move 40 miles or more (Kamees 2002). In Chelan County, Washington, Merriams typically traveled one to seven miles between summer and winter ranges (Washington Department of Fish and Wildlife 2002). Their winter habitat consists of moderately dense stands of evergreen trees and must not be

isolated from adjoining feeding and loafing habitat (Scott and Beoker 1975). In Washington, Mackey (1984) found turkeys preferred to roost in Douglas fir and grand fir (*Abies grandis*), perhaps due to better thermal cover and perching branches.

### Rio Grande Turkey

Originating from the Great Plains of Kansas, Oklahoma and Texas, this subspecies is also very adaptable to landform and climate changes. Topography varies from grasslands and prairies to shrubby and wooded rangelands to deep canyons and draws. Rainfall is between 15 and 35 inches while temperatures vary from – 32 to 120 degrees F (Beasom and Wilson 1992). They were released in portions of northeastern and southeastern Washington that are most similar to their native habitat (Washington Department of Fish and Wildlife, unpublished report).

On the Great Plains, woody plants, such as cottonwoods (*Populus spp*.), willows (*Salix spp*.), elms (*Ulmus spp*.), sycamores (*Platanus spp*.), hackberries (*Celtis spp*.), pecans (*Pecan spp*.), junipers (*Juniperus spp*.) and mesquites (*Prosopis spp*.) are crucial to this bird—30 species of trees and shrubs provide mast, 21 tree species are used for roosting, and others are used for nesting, loafing and escape cover (Beasom and Wilson 1992). Some of these species also exist in the areas where Rio Grandes were released in Washington.

Unlike the two previous subspecies, Rio Grandes do appear to select nest sites that are relatively close to permanent water—within 0.4 kilometers (0.25 miles) (Beasom and Wilson 1992). Their nests are typically in dense grasslands near streamside areas and are well concealed in grasses and brush (Kamees 2002). Typically, openings and mowed pastures are used for mating; mixed grass-shrub areas for brood rearing and summer feeding, although woody escape cover is always nearby (DeArment 1959). During the fall, wooded habitats are used more frequently, and winter roost sites are usually wooded streamside areas or in deep valleys near water (Beasom and Wilson 1992). In southeast Washington, the forest/rangeland transition areas interspersed with wheat fields and riparian drainages appear to provide ideal fall/winter habitat (Washington Department of Fish and Wildlife, unpublished report).

## Food and Eating Habits

Wild turkeys eat many different kinds of seeds and fruits, invertebrates (insects, spiders, snails), plants (including roots, stems and flowers) and even the occasional small lizard or frog. Their year-round diet closely resembles what plants and animals are most abundant in each season (Hurst 1992). No matter the subspecies, wild turkeys all eat the same general food types—greenery of grasses, sedges and forbs; seeds of grasses and forbs; agricultural crops; hard and soft nuts (mast); and animal matter (Hurst 1992). In spring and summer, turkeys eat mainly herbaceous vegetation—grasses and forbs plus fruits, insects, and other invertebrates. In the fall and winter, the primary food is nuts, supplemented with seeds, berries, green vegetation and invertebrates.

A study of turkey droppings in Missouri found that seeds, leaves, fruits and hard nuts made up about 75 percent of the adult annual diet, and the remaining 25 percent consisted of insects (Dalke et al. 1942). For poults, insects generally make up 75 to 90

percent of their diet the first week after hatching; this declines each week as poults grow in strength and skill, and more vegetation becomes available (Hurst 1992). Succulent plant matter, particularly grasses, is considered essential in providing vitamins to hens during the breeding season (Hurst 1992), while invertebrates provide breeding hens with much higher protein, calcium, and phosphorus than plants (Beasom and Wilson 1992).

Turkeys seem to have two feeding times—one soon after leaving the night roost and another around mid-afternoon (Mosby and Handley 1943). However, they may spend most of the day eating depending on the time of year, what's available, and the weather (Mosby and Handley 1943). Turkeys are strong scratchers that can dig through deep litter and soil to quickly spot tiny morsels with their keen vision (Hurst 1992).

## Eastern Subspecies

Preferred foods in eastern turkey's native habitat include: acorns; beechnuts; dogwood fruit; seeds and leaves of grasses and sedges; corn; fruit and seeds of grapes, cherries, sumac and poison ivy; and the fruits and leaves of forbs and vines (Mosby and Handley 1943). When other food sources fail, easterns will eat ferns, mosses, lichens and even hemlock (*Tsuga spp.*) needles (Bailey and Rinell 1967). In Washington, eastern turkeys eat the soft mast of Pacific dogwood (*Cornus nuttallii*), hawthorn (*Crataegus spp*.), Oregon grapes (*Mahonia spp*.), huckleberries (*Vaccinium spp.*), blackberries (*Rubus spp*.), cherries (*Prunus spp*.), and crab apple (*Malus fusca*) (Washington Department of Fish and Wildlife, unpublished report). However, western Washington forests have a much lower abundance of the hard mast produced in eastern U.S. forests.

## Merriam's Subspecies

Preferred foods in Merriam's turkey's native habitat include ponderosa pine seeds, acorns, pinon nuts, grass seed heads, juniper (*Juniperus spp*.) berries, kinnikinnick (*Arctostaphylos uva-ursi*) berries, currants (*Ribes spp*.), wild oats (*Avena spp*.), clover (*Trifolium spp.*), watercress (*Nasturtium spp*.) and grasses; feedlot grains are also eaten (Hurst 1992, Shaw and Mollohan 1992, Kamees 2002). In Washington, Merriam's eat grass leaves and seeds, ponderosa pine seeds, acorns, grasshoppers, forbs, and fruits such as wild strawberry (*Fragaria spp.*) (Mackey and Jonas 1982, Washington Department of Fish and Wildlife, unpublished report).

## Rio Grande Subspecies

Preferred foods in the Rio Grande's native habitat include pecans, acorns, fruit and seeds of prickly pear (*Opuntia spp*.), hackberry (*Celtis spp.*), cedar elm (*Ulmus crassifolia*), grass and forb seeds, insects, snails, and grain (corn and sorghum) (Hurst 1992). In Washington, Rio Grandes likely eat grass and sedge seed heads, hackberry (*Celtis spp.*), prickly pear (*Opuntia spp*.), the fruits and seeds of various shrubs, and the foliage of forbs and grasses (Washington Department of Fish and Wildlife, unpublished report).

## Population Dynamics

### Reproduction

Increasing daylight between late winter and early spring triggers the beginning of breeding season, although unusually cold or warm weather may delay or advance it (Healy 1992). Gobbling and strutting start well before mating while turkeys are still on their winter range, anywhere from February (Texas, New Mexico) to April (Vermont and other northern range states), and run through May (Healy 1992). There are normally two peaks of gobbling—the first when males are calling females, and the second, a few weeks later, when most hens are incubating eggs (Bailey and Rinell 1967).

Turkeys have well-developed pecking orders within and between their separate male and female flocks, so the dominant male of each flock breeds with as many females in a nesting area as possible (Healy 1992). Gobblers take no part in nesting or raising young.

Hens disperse to find nesting areas and some of them return to the previous year's site (Healy 1992). Juvenile hens often wander two to three times as far as adult hens and frequently nest outside their previously established home range (Ellis and Lewis 1967, Exum et al. 1985). Hens nest in just about any habitat as long as there is low cover dense enough to camouflage the nest. Nests are basically shallow depressions scratched in the ground. Generally, females will lay about one egg a day, ending with a clutch of nine to 12 eggs in about two weeks. Eggs are light buff to pale brown or purple in color with brown spots that vary in size. Incubation takes 25 to 29 days, during which time the female leaves for only an hour or two at a time to eat (Healy and Nenno 1985).

Anywhere from 75 to 100 percent of hens attempt to nest at least once; for juvenile hens the percentage is somewhat lower (Table 1). Many hens (32 to 63 percent) will re-nest if their initial nest is destroyed. The proportion of hens hatching one or more poults (hatchlings to 4 week old birds) in at least one nesting attempt varies widely—25 to 82 percent for adults and zero to 61 percent for juveniles, depending on subspecies (Table 1). The percent of eggs that hatch in a successful nest is typically greater than 80 percent.

Table 1. Wild turkey nesting success rates from various studies in the United States (Vangilder 1992).

| Subspecies | Nesting Rate | | Hen Success | | Eggs Hatched per Nest |
|---|---|---|---|---|---|
| | Adult | Juvenile | Adult | Juvenile | |
| Eastern | 88-100% | 42-100% | 38-82% | 15-61% | 80-92% |
| Merriam's | 75-100% | 8-31% | 43-75% | 0-25% | 87% |
| Rio Grande | No data | No data | 25-29% | 0-13% | 89-90% |

At hatching, the average poult weighs about 1.6 ounces and will gain about 1 pound every month for the next three months (Healy 1992). Poults are covered with a yellowish down and within 24 hours can run, feed on their own and keep up with the hen. Typically, they can fly on about the eighth day, and by the third week they are

roosting in trees at night (Healy 1992). Most of their time is spent feeding, and the young eat an enormous amount of food. Broods typically stay with the hen four to five months, but female poults may stay until the next year's breeding season (Healy 1992).

The life expectancy for wild turkeys has been documented at nine or more years (Mosby and Handley 1943), although the average is four years for Merriam's (Hoffman et al. 1993) and at least six years for easterns (Porter 1992). Under favorable conditions, when at least 40 percent of the young survive to breeding age, the population can easily more than double in a year (Porter 1992).

## Mortality

The annual mortality rate of wild turkeys, including hunting, can fluctuate dramatically from 25 to 85 percent, although lengthy studies in some areas of the U.S. showed an average mortality range of 36 to 61 percent (five-year study in Minnesota) and 42 to 67 percent (nine-year study in Iowa) (Vangilder 1992). Mortality rates vary between years, seasons, males and females, and juveniles and adults. Hen mortality is highest when they are nesting. Poults are most vulnerable the first two weeks after hatching, when their mortality rate can be 60 percent or higher (Williams and Austin 1988).

The major causes of mortality include predation, harvest (legal and illegal), accidents, disease, parasites, and the weather. While poults may die if exposed to inclement weather, adult turkeys can adapt to widely varying weather and temperature conditions (Vangilder 1992). However, lengthy exposure to deep, persistent snow and extremely cold temperatures does kill some adult turkeys (Healy 1992).

### Predation

Predation can be a significant factor at any age, as more than 20 species across the U.S. prey on turkeys, their poults or their eggs (Table 2). Predation was responsible for most wild turkey deaths (29 to 100 percent) in nine studies from six states (Vangilder 1992). Predators in Washington include mountain lions (*Felis concolor*), bobcat (*F. rufus*), black bear (*Ursus americanus)*, coyotes (*Canis latrans*), red foxes (*Vulpes vulpes*), opossums (*Didelphus virginiana*), raccoons (*Procyon lotor*) and skunks (*Mephitis mephitis*) (Washington Department of Fish and Wildlife, unpublished report).

Table 2. Major and minor wild turkey predators in the U.S. (Miller and Leopold 1992)

| **Mammals** | | **Birds** | | **Reptiles** |
|---|---|---|---|---|
| *Major* | *Minor* | *Major* | *Minor* | *Major* |
| Bobcat | Armadillo | Broad-winged hawk | Bald eagle | Pine/bull snake |
| Cougar | Black bear | Crow | Eastern screech owl | **King snake** |
| Coyote | Badger | Goshawk | Short eared owl | **Rat snake** |
| Dog | Groundhog | Great horned owl | Magpie | Eastern coachwhip |
| Fisher | Wild or feral hog | Golden eagle | | |
| Lynx | Feral house cat | Red-tailed hawk | | |
| Opossum | Ringtail | Raven | | |
| Raccoon | Rock squirrel | | | |
| Red/gray fox | | | | |
| Skunk | | | | |

### Harvest

Legal and illegal hunting can also be substantial sources of mortality. Studies in the Midwest showed that illegal hen kill (hens harvested during a tom-only spring season) was higher during years when spring gobbler season began before the peak of incubation (Kimmel and Kurzejeski 1985). However, if spring hunts are managed properly, they do not have a long-term impact on population numbers (Vangilder 1992). Fall hunts, however, can have a significant influence and are the most useful for managing population numbers. Populations are likely to decline if more than ten percent of adult hens are removed in the fall hunt, especially if they were successful nesters (Healy and Powell 1999).

### Diseases

Turkeys are subject to a number of viral and bacterial infections common to most fowl—domestic and wild. One of the most prevalent viral diseases is avian pox (genus *Avipoxvirus*)—a contagious infection common in much of the eastern turkey's range and perhaps other subspecies as well (Davidson and Wentworth 1992). Transmission is by direct contact or mosquito bites and the external, prominent lesions can impair eating, respiration or vision. A common bacterial disease is mycoplasmosis (genus *Mycoplasma*), of which *Mycoplasmosis gallisepticum* causes severe respiratory distress, swollen sinuses and reproductive problems in wild turkeys (Davidson and Wentworth 1992).

Wild turkeys are also subject to infestations by a number of internal and external parasites including flatworms (flukes), tapeworms, roundworms, thorny-headed worms (acanthocephalan), and protozoan blood parasites (*Haemoproteus, Leucocytozoon, Plasmodium*) transmitted by blood-feeding insects and spiders. Most parasites are only a nuisance, although particularly heavy infestations may cause physical impairment or secondary infections (e.g. Histomoniasis, or blackhead disease) (Davidson and Wentworth 1992).

A documented case of a wild turkey that contracted Histomoniasis from domestic chickens occurred in 1985. A farmer near Colville, Washington was feeding wild turkeys in his chicken yard when he discovered a dead hen turkey. Washington Department of Fish and Wildlife biologists, who examined the carcass, determined that this otherwise healthy bird died from Histomoniasis, carried by the chickens (Washington Department of Fish and Wildlife, unpublished report).

Disease is a major concern with any species introduction. To help address this concern, birds transplanted into Washington from other states were examined and tested by a veterinarian prior to introduction. To date, there have been no significant diseases detected in turkeys trapped within the state.

## Potential Impacts To Other Species

Wild turkeys are not native to Washington, but they are not considered to be an invasive species. While the majority of studies that have examined wild turkey food habits and general ecology have taken place in areas where the communities coevolved with

turkeys, some similar ecological relationships exist in Washington. Turkeys have been released in Washington since the early 1900's and established since 1960 and no detrimental biological effects have been documented. There may be a potential for turkeys to adversely affect some native animals and plants, however, a review of existing research and discussions with wild turkey managers in other states do not indicate that wild turkeys have a negative population level impact on other wildlife or rare plants.

## Plants, Animals, and Other Birds

Plants: Grasses and leafy plants make up a large portion of the wild turkey diet; however, there is no existing research that identifies a strong preference for a particular species. Since turkeys are a generalist feeder, they typically eat plant species that are most abundant during any particular time of year (Hurst 1992). This feeding strategy would likely prevent wild turkeys from impacting populations of rare or endangered plants.

Western Gray Squirrel: Concerns have been raised about whether wild turkeys are in competition with western gray squirrels. Wild turkeys and squirrels eat some of the same foods (e.g., pine nuts and acorns) but no research has been conducted on whether turkeys have a population level impact on western gray squirrels. Western gray squirrels currently coexist with turkeys in Oregon and California and other species of squirrel coexist with turkeys in other parts of the United States without apparent problems; however, additional research in Washington would be beneficial.

Amphibians and Reptiles: Amphibians and reptiles have been found to be a very small percentage of the wild turkey diet (Appendix 4 National Wild Turkey Federation Unpub. Report). Since they represent such a small portion of the diet, impacts to populations of amphibians and reptiles are likely low.

Sharp-tailed Grouse: Typically, wild turkeys and sharp-tailed grouse do not occupy the same habitat types for large amounts of time. Turkeys may use the shrub-steppe habitat preferred by sharptails, however, not to a substantial degree. It is possible that turkeys will use riparian areas that sharptails use during the winter months, however, grouse are largely utilizing tree buds during that time and turkeys are typically foraging on the ground. Physical contact between turkeys and grouse is minimal which would limit transmission of disease.

Forest Grouse (Ruffed, Blue, Spruce): Wild turkeys coexist with forest grouse (especially ruffed grouse) throughout much of their native range; however, the potential for competition is limited. In general, forest grouse rely on early seral stage forest habitat, which is not typically favored by wild turkeys. In addition, during the winter (i.e., the time when food resources are most scarce), turkeys and grouse typically utilize different food sources (Whitaker, 1998). No literature exists that indicates that wild turkeys compete with forest grouse for food or other resources.

# SECTION 2: POPULATION AND HABITAT STATUS

## Population Management

### Early Transplant Efforts

The first known attempt to establish wild turkeys in Washington occurred in 1913, 20 years prior to the establishment of the Washington Department of Game. During this time, fish and wildlife management fell under the jurisdiction of each county. These turkeys are thought to have been the eastern subspecies raised on game farms (Washington Department of Fish and Wildlife 1996).

The Department of Game, established in 1933, continued to release pen-raised birds sporadically in various counties throughout the 1950s, but these releases did not result in established populations. This is not surprising, given that pen-raised turkeys do not learn where to find food, what predators are and how to respond to them, or how to live in a flock—all essential skills that ensure their survival in the wild (Leopold 1944).

The use of cannon nets in the 1950s finally made capturing wary wild turkeys feasible and efficient. In 1960, 36 wild-trapped Merriam's turkeys from Arizona and New Mexico were released at four sites in the eastern half of the state. Only the 12 Merriam's released in the ponderosa pine forests of south-central Washington (Klickitat County) succeeded. This created the oldest turkey population in Washington, and until 1990, the largest. Sixty Merriam's turkeys from Wyoming were released into similar habitat in northeast Washington (Stevens County) in 1961, again establishing a population. This was the beginning of the state's largest current population. However, many other releases of Merriam's turkeys into other areas of Washington during the1960s and 1970s apparently did not take hold. By the late 1970s, these populations had declined and either remained at low levels or disappeared altogether.

### Population Augmentation and Expansion

From 1984 through 2003, major transplant projects were undertaken in the eastern half and the southwest parts of the state. In 1988 and 1989, almost 500 wild-trapped Merriam's turkeys were transplanted into previously stocked and new areas in eastern Washington. Additional Merriam's were released in eastern Washington from 1990 through 2003. Northeastern Washington was the source for many of these releases as the Department used trapping and transplanting to help landowners deal with increasing turkey populations.

Since the mid-1980s, more than 500 Rio Grande turkeys from Texas (and later additional birds from thriving in-state populations) have been transplanted to 50 sites in eastern Washington's more arid canyons and streamside areas. During the same time period, over 400 eastern turkeys were transplanted from Iowa, Pennsylvania, and Missouri into southwestern Washington's mixed forest habitats. Overall, approximately 2,400 wild turkeys have been released in Washington through 2003. To more effectively manage these three subspecies, the state was divided into seven Population Management Units (PMUs), with names that match that portion of the state (Figure 3).

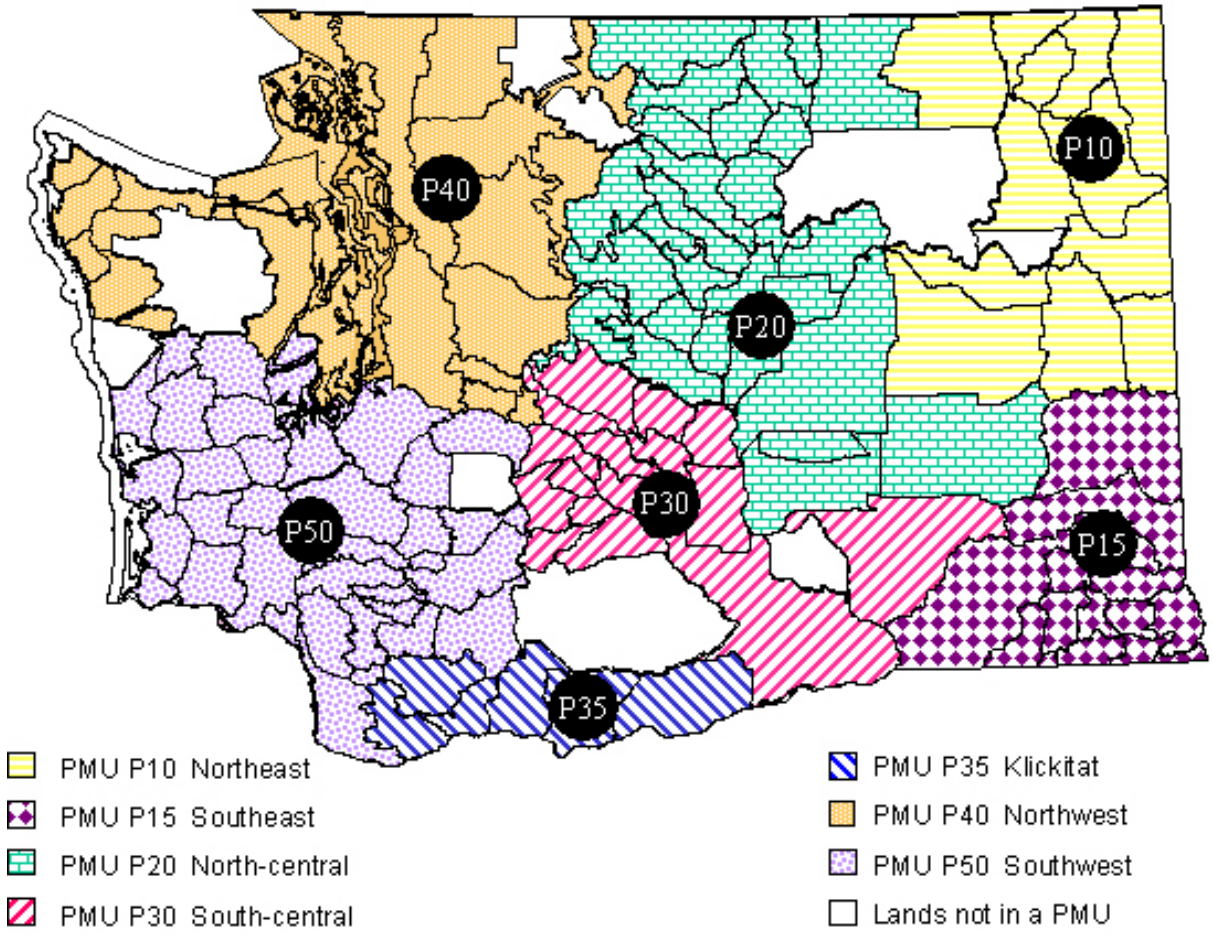



Figure 3. Wild turkey Population Management Units.

## Nuisance and Damage Problems

Wild turkey populations have, over time, expanded into populated rural and suburban areas, seeming to adapt easily to humans and their more urbanized settings. Beginning in 1996, large flocks of turkeys that were a nuisance or became destructive were looked at as source stock to initiate new flocks and supplement existing ones. Excess birds were trapped and moved to areas within the same county that had no turkeys, to other eastside population management units, or were traded to other western states. The number of turkeys, mainly Merriam's, trapped and relocated per year has varied from 119 (in 1996) to 745 (in 2000).

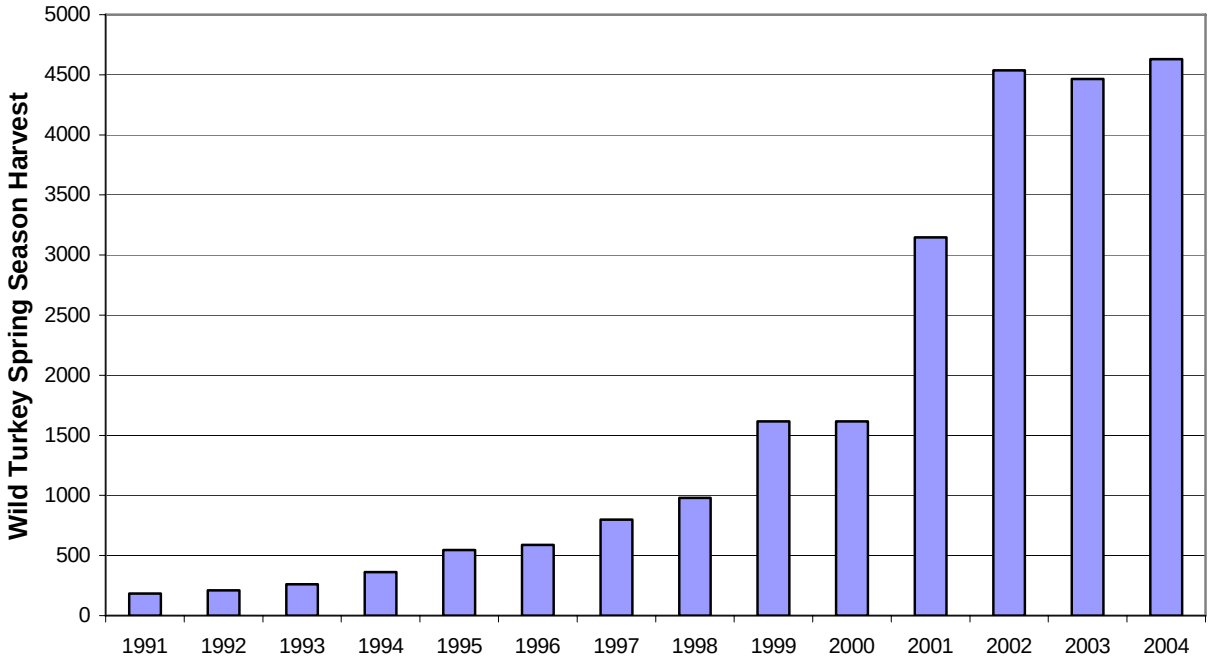
The vast majority of complaints have come from several counties in the Northeast PMU, which currently has the highest turkey density in the state. Region 1 WDFW staff handle 50 to 70 turkey-related complaints a year. In most cases, these complaints have centered on birds being artificially fed in some manner. To date, the WDFW has used deterrent as well as removal methods to successfully deal with these complaints (see Appendix 1).

## Current Population Status

To date, population surveys have not been conducted for any turkey subspecies in Washington. Because turkeys are so elusive and widely distributed among a variety of different habitats, many survey techniques are unreliable, impractical or cost prohibitive (Donohoe et al. 1983, Mosby 1967). Instead, annual hunter harvest surveys have been relied on in Washington to determine population trends over time.

According to harvest trend information from 1991 to 2003, the statewide turkey population has substantially increased (Figure 4). The majority of this increase has occurred since 1996, most noticeably in eastern Washington. Stevens County (in NE Washington) presently has the highest density of turkeys. Other eastern Washington counties with substantial turkey populations are Pend Oreille, Ferry, Lincoln, Columbia, and Walla Walla. In western Washington the largest populations, although much smaller than in eastern Washington, can be found in parts of Cowlitz, Grays Harbor, Mason and Thurston counties.

Figure 4. Spring season wild turkey harvest 1991-2004.




There are also small, local turkey flocks in other western Washington counties. These birds are likely hybrid varieties of mostly game farm origin that were likely released by well-intentioned wild turkey enthusiasts. Because many of these birds live near populated areas or on private land, hunting opportunity is limited. It is likely that other small, scattered flocks of turkeys of similar origin exist elsewhere in the state (Washington Department of Fish and Wildlife, unpublished report).

## Subspecies Management

Habitats suitable for different subspecies of wild turkey exist in close proximity in many locations across the United States and hybridization can and does occur in some populations. The WDFW policy has been to manage for three subspecies in the habitats that best suit each. In some parts of the state, this goal has likely been compromised, as habitats suitable to two subspecies exist and hybridization has occurred.

**Northeast Population Management Unit (PMU P10)**

Merriam's turkeys flourished here after being established in 1961 but then slowly declined. Since a large transplant from South Dakota in 1988-89, this population has steadily expanded its range and density. Turkeys have been expanding into more urbanized Spokane County from in-state and Idaho populations for the past several years. Rio Grande turkeys were introduced (into Lincoln County) in the late 1980s and appear to be doing well there.

**Southeast Population Management Unit (PMU P15)**

After early attempts to establish pen-raised eastern turkeys here failed, Rio Grandes were tried in the 1960s. Their population expanded significantly after a concerted Texas transplant effort from 1988 to 1990. The Blue Mountain foothills area seems to provide excellent habitat conditions and Rios continue to expand into available habitat.

**North-central Population Management Unit (PMU P20)**

Both Merriam's and Rio Grande turkeys were transplanted repeatedly throughout this unit in the 1980s and 1990s. Some releases were unsuccessful, while other releases have held on. The 800 Merriam's released from 2001-2003 have established flocks in several areas and data collected from radioed hens has shown fluctuating poult production (1.0 – 2.7 (mean = 2.2) poults/hen) (Washington Department of Fish and Wildlife 2002). Turkeys are expanding into drainages west and south of traditional range. While Merriam's/Rio Grande hybrids undoubtedly exist in this PMU, the Department has continued to focus on Merriam's.

Due to the lack of extensive mast or berry crops, the habitat in this unit is less productive than some other areas of eastern Washington. In Okanogan County, much of the habitat is intensively grazed and the lack of grain farming may limit population growth.

**South-central Population Management Unit (PMU P30)**

All three subspecies were transplanted here at one time or another without success—94 pen-raised easterns between 1913 and 1931, 24 Merriam's in the 1960s, and 38 Rio Grande turkeys in the 1980s. Most of this unit is probably only marginal turkey habitat. The forested zone, which is of fairly high elevation, receives significant snowfall. Deep snows in 1992-93 and 1996-97 may have hurt turkey survival, whereas recent mild winters possibly benefited the birds.

This habitat is perhaps best suited for the Merriam's subspecies, although pockets of Rio Grande habitat occur throughout. With that in mind, 574 wild-trapped Merriam's from in state were released from 1999-2001; 30 of them were equipped with radios. Radio-tracking, observations, and harvest reports indicate that this effort was successful and birds have become widespread, especially in Kittitas County. There are likely areas in this unit where Rio Grande and Merriam's turkeys have hybridized. The long-term outlook for populations in this PMU will likely be dependent on winter survival.

**Klickitat Population Management Unit (PMU P35)**
The Merriam's population first released here in 1965 expanded until 1970 and then appeared to be relatively stable into the 1980s. By the mid 1980s, however, harvest dropped off. In the hopes of rejuvenating this population, over 200 Merriam's were released between 1989 and 1999. This, along with improved weather conditions after the hard winter of 1996-97, seems to have reversed the downward trend. Recent reports from hunters, biologists and county harvests records indicate that this population is increasing slowly.

**Northwest Population Management Unit (PMU P40)**
Various releases since 1925 have failed to establish populations on the mainland or the San Juan Islands. Most releases utilized pen-raised stock, were limited in number, and were widely scattered. Between 1998 and 2000, 38 turkeys were introduced into the Pilchuck Tree Farm (Snohomish County). While occasional sightings of one or two birds have been reported as far as five miles away, suggesting the birds have reproduced to some degree, populations remain very low.

**Southwest Population Management Unit (PMU P50)**
Releases totaling over 400 eastern wild turkeys from 1987 to 2000 have not resulted in population expansion as seen in PMU 10. A gradual increase in harvest and increasing observations of birds seen away from release sites provide indications of population expansion, however, additional investigations are needed to help determine if eastern wild turkeys have formed sustainable populations in this PMU.

## Recreation Management

### Hunting Seasons

Wild turkeys were classified as game birds (legally huntable) as early as 1937 by the Washington State Game Commission (State of Washington 1937). The first official hunting season (a one and one-half day fall season) occurred in October 1965 in Stevens County - four years after wild turkeys were first released there. Just two years later, all of eastern Washington was open to fall turkey hunting (one turkey per year). Spring hunts didn't begin until 1970, for gobblers only, and gradually increased from one to two weeks in length. By 1989, the wild turkey hunting season was three weeks long in the spring (for turkeys with visible beards only) and about one week in the fall (for either sex and only in some counties). The current statewide, April 15 to May 15, spring season was established in 1994.

Also in 1994, the one turkey per year bag limit was increased to three, allowing hunters to harvest one of each subspecies. In 2000, fall hunting was expanded to include more counties and was changed from a general season to a permit-only hunt to ensure a conservative hen turkey harvest. The fall hunt date was also moved from late November to late September and early October to minimize overlapping other hunting seasons. In 2002, regulations changed again, allowing hunters to take two turkeys in designated portions of eastern Washington as part of their three total. A special youth hunt began in 2003 in specific game management units throughout the state. In 2006, the youth hunt will be open statewide.

**Hunter Participation and Harvest History**

The first hunting season in 1965 brought out approximately 400 hunters who harvested 120 Merriam's turkeys. Two years later, hunters were required to buy a turkey tag ($2) and return it if they harvested a bird. That year 687 hunters bought tags and claimed 85 birds. After 1970, when hunters reached a peak of 2,600 (and bagged a record 245 birds), the turkey hunting ranks slowly thinned. The bottom came in 1987, when only 428 hunters harvested 61 turkeys.

After augmentation efforts began in the late 1980s, spring season harvest steadily increased—from 183 birds in 1991 to 1615 birds in 2000. There was a dramatic increase in spring season wild turkey harvest from 1996 to 2003, when 4,465 turkeys were harvested (Figure 4). During this time, hunter numbers have also increased—by more than 850 percent—from 1,632 hunters in 1991 to 15,783 hunters in 2003.

The Northeast Population Management Unit typically accounts for more than 80 percent of the state's annual turkey harvest. Correspondingly, the number of fall permits issued for this PMU was raised from 405 in 2000 to 2,117 in 2003. In addition, a one-week general fall season was implemented in specific areas in 2004. These additional recreational opportunities also help address turkey nuisance and damage concerns in that part of the state.

Beginning in 2001, the Department began requiring hunters to report their turkey hunting activity and harvest, whether they bagged a bird that season or not. As part of mandatory reporting, hunters cannot not buy the next year's turkey license and tag without first fulfilling this requirement. This has improved the accuracy and confidence of the annual turkey hunter and harvest figures, as well as giving the WDFW detailed information on where hunting takes place and for how long. During this time, the statewide harvest success rate has ranged from 21 to 30 percent during the general spring hunt and 42 to 50 percent for the fall permit hunt.

Since 2001, more than 30,000 turkey tags have been sold every year. In 2003, hunters spent more than 68,000 days in the field hunting turkeys, averaging almost four and a half days per hunter. A survey conducted in 2002 found that 75 percent of turkey hunters were satisfied with their hunting experience.

## Economic Impact

Turkey hunting is the fastest growing type of hunting in the country. A 2003 study found that spring turkey hunters in Washington spent a total of $9.394 million in 2003. Hunters spent the most on food and beverages ($1.485 million), transportation ($1.361 million), trucks and other vehicles ($983,000), and firearms ($851,000). Turkey hunters also seem to value membership, conservation and advocacy efforts, contributing $413,000 in dues and contributions, and $111,000 for habitat improvements in 2003 (Southwick and Associates 2003).

This study found that the amount spent per spring turkey hunter averaged $595 for Washington State. For other types of hunting in Washington, the average in-state expenditure was $561 per big game hunter, $313 per small game hunter, $468 and per migratory bird hunter (U.S. Dept. of Interior 1996).

Washington State sales taxes, including general sales tax as well as motor fuel (gasoline) taxes, created $459 thousand in revenue. Revenue from turkey license and tag sales in 2003 totaled $493 thousand. Recognizing that turkey hunter dollars are often spent in rural or lightly populated areas, their economic contributions can be especially important to the rural economic base, especially when you consider turkey hunters spent over $2 million on food, lodging, and transportation.

## Public Interest

Approximately 1.8 million people watched, photographed or fed wildlife in Washington in 1996, spending $9.6 million in the process (U.S. Dept. of the Interior, 1996). This figure accounted for 61 percent of all wildlife-related spending in the state that year. By 2001, almost 2.5 million people enjoyed watching wildlife in Washington and spent $9.8 million in the state doing so (U.S. Dept. of the Interior, 2001).

In 2001, a U.S. Department of the Interior survey showed that nearly 2.5 million people enjoyed watching wildlife in Washington, and turkeys can provide a unique wildlife viewing opportunity. During the winter, turkeys congregate in large flocks, often providing excellent viewing, photographic and video opportunities. During the spring, gobblers exhibit a magnificent breeding display and may be observed and photographed by patient individuals who learn how to call them into close range. If Washington turkey populations continue to expand, so will opportunities to view and enjoy them. This will be especially true as the Department increases its efforts to inform and educate the public about this distinctive bird.

# Habitat Management

## Fragmentation and Degradation

Washington has the second largest human population of the western contiguous states (more than six million in 2003) but is the smallest in size. The long-term outlook is for continued population growth. As Washington's human population increases, its demand for land, water and other natural resources will continue to erode the quality

and quantity of habitat for wildlife, including wild turkeys. Research efforts across the United States have shown that roads, human developments, timber harvesting, grazing, farming and fire suppression often reduce or degrade turkey habitat (Beasom and Wilson 1992, Hurst and Dickson 1992, Shaw and Mollohan 1992).

### Roads

Building roads and improving existing roads can negatively or positively affect turkey populations. Road construction removes valuable roosting trees and makes others too visible and thus unusable (Beasom and Wilson 1992). When roads are frequently and heavily used by humans, turkeys often avoid or abandon adjacent habitat (Wright and Speake 1975, Still and Baumann 1989). In addition, roads can provide easy access and promote higher levels of legal and illegal harvest (Holbrook and Vaughan 1985).

On the other hand, undeveloped roads can serve as travel corridors and feeding areas. Road rights-of-way often contain many insects, seeds, fruits and other foods. Also, if undeveloped roads are planted and/or maintained in non-woody vegetation, this can create quality brood and feeding habitat (Hurst and Dickson 1992). Land management agencies continue to realize the importance of properly planning and managing roads to balance human and wildlife needs.

### Residential Development

Since 1965, Washington's human population has more than doubled to over 6 million. According to census information, nearly 2.4 million people live in unincorporated areas of Washington (80% of the 1965 statewide population) (State of Washington 2004). This movement of people into rural and formerly undeveloped lands has significantly impacted wildlife habitat. All across Washington, private and commercial developments occur within streamside and forest areas that wild turkeys and other wildlife prefer. Urbanization can eliminate existing turkey habitat, while suburban sprawl fragments it, leaving only disjointed, isolated areas.

### Timber Harvest

Timber harvest, including pre-commercial thinning, that removes trees or reduces tree densities from large areas can negatively impact turkey populations by reducing travel corridors, escape cover and the mature trees needed for roosting sites. Kurzejeski and Lewis (1990) found that eastern turkeys seldom used fields if not bordered by mature timber stands. While the piling of post-harvest slash provides good cover for nesting hens, especially in western Washington forests, burning slash piles greatly reduces available nesting cover as well as nearby herbaceous growth. However, if done properly, logging can enhance habitat for the Merriam's subspecies (Shaw and Mollohan 1992) and may improve some facets of wild turkey habitat for other sub-species. Changes in state natural resource policies and new ecosystem management strategies implemented since 1989 have resulted in significant reductions in timber harvest on private (26 percent) and public (69 percent) lands (Washington Department of Fish and Wildlife 2003). The effects of these changes are undetermined.

## Habitat Enhancement

The Upland Wildlife Restoration Program began in the 1940s and since then has enhanced upland game habitats within wild turkey range. Several habitat and hunter access agreements have been signed with private timber companies and with the Washington Department of Natural Resources. Some of these landowners have a great interest in working with the WDFW to enhance habitats and have huntable populations of wild turkeys on their land (Washington Department of Fish and Wildlife 1999).
In the North-central Population Management Unit, the release of Merriam's turkeys in Chelan and Yakima Counties created so much enthusiasm from local hunters that they formed a chapter of the National Wild Turkey Federation in 1999. In addition to assisting the WDFW with releases, radio-tracking and feeding birds during the winter, they are also exploring habitat improvements to provide more permanent winter food solutions.

# SECTION 3: FUTURE DIRECTION AND GOALS

## Population Monitoring

### Issue Statement

Accurately determining turkey population trends is difficult throughout much of the United States. This is especially true in more forested habitats, such as those found in much of the eastern U.S, the northern tier states, and those in western Washington. Currently, the WDFW relies on annual hunter harvest estimates to provide population trend information. An additional survey method that is repeatable and statistically valid could improve trend monitoring in some Washington turkey populations.

Having population trend data that is independent of harvest estimates would help to more accurately monitor populations, determine appropriate hunting seasons, and identify population management needs. There are various turkey population monitoring techniques including mark-recapture studies, direct counts of wintering populations, brood surveys, mail-delivery personnel surveys, gobbling counts, hunter check stations, and landowner turkey production surveys. The applicability of these methods varies with habitat type, observability, and the overall objectives of the survey (Healy and Powell 1999).

**Objective:** Improve wild turkey population monitoring by conducting harvest and/or non-harvest surveys on a yearly basis.

***Strategies***

1. Eastern Washington:
    a. Where feasible, implement annual wintertime road transects using volunteers to identify population trends by documenting total birds seen, flock size, and flock composition.
        i. Appendix 2 has proposed protocols for a pilot survey in northeastern Washington.
    b. Evaluate potential use of fall brood count surveys and implement surveys where appropriate.
2. Western Washington: Due to dispersed populations and forest density's effects on turkey observation, continue to use the annual harvest monitoring data from mandatory reporting by turkey hunters. Other methods of monitoring will continue to be evaluated for applicability.
3. Continue to identify means of improving the rate and accuracy of harvest-reporting for turkey hunters statewide.

## Population Management

### Issue Statement

Establishing self-sustaining populations in the most suitable areas of the state has been, and continues to be, one of the primary objectives of the wild turkey management program. Various population management options have been considered, ranging from terminating population enhancement or establishment efforts to conducting experimental releases in all parts of the state.

For the term of this plan, population management activities will continue within the Primary Wild Turkey Management Area (Map, Appendix 3). The Primary Management Area has been divided into two designations – Currently Occupied and Potential Introduction. Not all sites within the Currently Occupied designation have resident flocks, however, turkeys are expected to naturally expand into most of these areas given enough time.

Wild turkeys do exist outside of the designated Primary Management Area. These areas are not considered priority areas due to a combination of factors including habitat type, precipitation, elevation, human population expansion, and other management considerations (e.g., national parks). These are not the most suitable habitats and population expansion will not be encouraged in these areas. The Primary Wild Turkey Management Area map and the designated "occupied" and "potential" areas will be updated every five years with the involvement of district and regional biologists and other interested parties.

**Objective:** Conduct yearly management activities designed to establish and manage self-sustaining populations of wild turkeys in the most suitable areas of Washington.

***Strategies***

1. Manage for three sub-species of wild turkeys in the most appropriate habitats (Appendix 3):
    a. Merriam's sub-species: Pend Oreille, Stevens, Spokane, Ferry, Okanogan, Chelan, Kittitas, Yakima, and Klickitat counties
        i. It is likely that hybridization has occurred in some of these areas, however, future management activities will focus on Merriam's.
    b. Rio Grande sub-species: Lincoln, Asotin, Garfield, Columbia, and Walla Walla counties;
    c. Eastern sub-species: southwestern Washington counties.
2. Turkey Trapping:
    a. Unless needed for Strategy 3(b), turkeys will only be trapped in areas experiencing nuisance and damage as a means to reduce or eliminate those complaints and as part of an overall nuisance management process defined in Appendix 1.

b. To address Strategy 3(b) turkeys may be trapped in areas with a healthy, increasing turkey population.
c. Trapped birds may be used as a population management tool as described in Strategy 3.

3. Population Augmentation and Establishment:
   a. Currently Occupied Area:
      i. With WDFW Regional direction, release turkeys in areas appropriate for that sub-species and in locations where there is a minimal chance of causing damage.
      ii. Turkeys will not be released within PMU P20 and PMU P30 (Figure 3).
         - These populations are under evaluation to determine if they will be self-sustaining over time.
   b. Potential Introduction Area:
      i. Before turkeys can be released in the Potential Introduction Area, the local WDFW district team, the regional wildlife program manager and the upland game section manager must review and approve the introduction proposal. Evaluation of these proposals will begin at the district level within the Department, will involve appropriate land management entities, and, at a minimum, will examine the following:
         - Current and potential nuisance and damage issues
         - Impacts to existing or potential management actions, such as habitat restoration efforts.
         - Impacts to the long-term survival of state and federally listed species (e.g., endangered and threatened) as well as candidate and sensitive species.
         - Recreational and economic benefits
      ii. Potential negative impacts will be based on credible and defensible methods, such as niche overlap analysis, habitat suitability analysis and scientific literature review. The analysis will be interpreted at a "reasonable person standard". Measures will be identified to mitigate potential negative impacts. If impacts cannot be mitigated or no mitigation measures can be found, turkeys will not be released on that site.
      iii. The sub-species of wild turkey used in this area is currently undetermined. Prior to introductions taking place, an evaluation of the most appropriate sub-species must take place. Analysis of reproductive strategies, natural history, and economics will be part of any evaluation.

Additional Direction:

- It is illegal for the general public to release turkeys into the wild (Washington Administrative Code 232-12-271).
- To prevent the spread of diseases that may exist among domestic and wild fowl, the WDFW will work with the Washington State Department of Agriculture to develop testing protocols for wild turkeys. Testing will include birds trapped for release and birds from established populations.

- All trapped wild turkeys will be aged, sexed and banded prior to release. This information will be provided to the Upland Game Section Manager and the Regional Wildlife Program Manager, along with the number of birds released, release coordinates (Township, Range, and Section), area name and county, and the release date or dates. These records will be added to the database of Washington turkey releases.
- All release sites must provide future opportunities for general public hunting and wildlife viewing.
- If wild turkeys become established in areas outside of the Primary Turkey Management Area (Appendix 3) and become a public nuisance or a biological concern, then the WDFW will take actions to address the problem.
- From 1984 through 2003, the WDFW, with support from the National Wild Turkey Federation, conducted an aggressive introduction program across the state. That effort has been completed and any further efforts will be in accordance with this or future management plans.
- As recently as 2003, WDFW has augmented populations that had periodically declined through time (mainly along the eastern foothills of the Cascade Mountains (PMUs P20 and P30)). There are currently no plans to augment these populations if they decline again.

4. The WDFW does not encourage artificial feeding of wild turkeys. While feeding may have benefits for some turkeys, it will likely concentrate turkeys in a given area. With large concentrations comes an increased likelihood of nuisance and damage complaints as well as increased chances of disease transmission.
    a. The WDFW may use artificial feeding as a management tool to address nuisance and damage issues.

## Research Needs

### Issue Statement

Research on wild turkeys in the western United States is not common. To improve wild turkey management, the WDFW needs additional data on both biological and management fronts.

These include:

- Inter-specific competition or impacts to rare plants or animals
- Nutritional resources for turkeys in Washington
- Habitat utilization in western Washington
- Limiting factors analysis in western Washington

If research funding can be identified for western habitats, managers will have more precise tools to manage this species and its harvest more effectively.

**Objective:** Initiate, participate in, or support research projects that increase our knowledge of wild turkeys in western habitats.

***Strategies***

1. Conduct a literature review of wild turkey research in the western U.S..
2. Develop and/or participate in inter-specific competition and food habit research projects funded through the National Wild Turkey Federation and other public or private entities.
3. Cooperate with public and private entities to develop habitat use and limiting factors analysis for western Washington wild turkey populations.
4. Implement strategies to address research findings.

## Nuisance and Damage Problems

### Issue Statement

Since wild turkeys concentrate into large flocks and eat a wide variety of vegetation, they have the potential to be a nuisance, or even cause property damage. The Department receives a considerable number of nuisance and damage complaints from residents in some areas of eastern Washington where turkey numbers have expanded substantially over the past ten years. Most of the problems occur during the winter when they concentrate in flocks of 100 birds or more. Generally these problems can be effectively dealt with by removing food sources, allowing hunting, hazing, building exclosures, providing alternate food sources, or by using special kill permits issued by the Department. Through time, the most serious and habitual complaints have been handled by trapping a number of the offending birds and transplanting them to new locations. The Department is committed to provide the public with the tools to address nuisance and damage wild turkey issues.

**Objective:** Implement effective nuisance/damage management strategies to help resolve issues as they arise.

***Strategies***

1. WDFW regional staff will document the location of complaints on a yearly basis.
2. Evaluate WDFW responses to past complaints and their effectiveness.
3. Determine major factors causing complaints and work with volunteers to help landowners address problems on their property.
4. Use multiple methods to resolve complaints, including liberalized or specific hunting seasons, deterrent activities, habitat enhancements, removal by trapping, and depredation permits (see Appendix 1 for details).
5. Provide public education materials that address feeding wildlife, which can attract unwanted turkeys to their property, via print and other media outlets.
6. Explore planting alternate food sources (e.g., grain plots) to keep nuisance or damage-causing turkeys away from habitual problem areas.

## Habitat Management

### Issue Statement

Throughout the habitats that currently support wild turkey populations in Washington, opportunities for enhancement exist on both private and public lands. Improving habitat conditions for turkeys has additional value for some wildlife species that use the same resources.

**Objective:** Conduct habitat improvements in key wild turkey management areas to accomplish multiple goals including addressing nuisance issues, improving public recreational opportunities, and improving habitat conditions for multiple species.

***Strategies***

1. Identify and prioritize key areas for habitat improvement.
2. Use available enhancement grants to improve key habitat features used by wild turkeys (water, winter and evening roosts, winter food sources).
3. Facilitate habitat enhancement projects on private and public properties.
4. Develop habitat enhancement projects to help address issues related to winter nuisance complaints.
5. Prioritize enhancement projects on or adjacent to public or private property open to public hunting.
6. Prioritize enhancement projects that benefit species of concern and those that improve habitat for a wide variety of wildlife species.

## Hunting Seasons and Hunter Access

### Issue Statement

Turkey populations in some portions of Washington have increased to the point where their behavior has become problematic for local landowners and residents. One method of resolving these situations is to create, implement, and evaluate expanded hunting opportunities.

**Objective:** Increase fall hunting opportunities where existing nuisance issues warrant expanded hunting opportunity.

***Strategies***

1. Evaluate the potential impacts of fall hunting season options, including open season, increased number of permits, increased season length, and changes in season timing.
2. Provide season recommendations to the Wildlife Commission every three years with year-to-year adjustments when needed.

## Issue Statement

A definitive method of determining when a hunting season change would be appropriate does not currently exist. This method needs to be statistically valid as well as flexible enough to incorporate other factors, such as changes in weather patterns, habitat, and hunter numbers.

**Objective:** Develop a set of criteria that, when met, would direct a change in season structure or hunting opportunity.

***Strategies***

1. Continue to collect harvest information via mandatory hunter reporting.
2. Implement harvest-independent population monitoring. Conduct investigations to validate this population index.
3. Use harvest-independent population and harvest reporting indexes to develop a set of criteria that, when met, will trigger a change in season structure or hunting opportunity.

## Issue Statement

Turkey hunters and district biologists report that turkey-hunting opportunities in some areas of eastern Washington are limited due to large acreage owned by private landowners. Private land access has also been identified as an important issue in hunter opinion surveys conducted by the WDFW.

**Objective:** Increase the number of acres of private land available for public turkey hunting by 10% within the wild turkey management area.

***Strategies***

1. Increase public access to private lands through the efforts of the WDFW's Private Lands Program. Initial focus should be in the privately held timberlands of northeastern and southwestern Washington.
2. Investigate potential incentives (e.g., payment, liability protection, hunter access management) for public hunting access on private property. Implement those incentives that are determined to be most beneficial to the public and the landowner.
3. Partner with local chapters of the National Wild Turkey Federation and other sportsman's groups to find landowners who would allow public hunting.

# Public Education

## Issue Statement

The WDFW recognizes a need to improve educational outreach addressing wild turkey management in Washington. The public needs accurate, timely information that increases their knowledge and understanding of wild turkeys, their ecology and history in Washington, as well as past management activities and future management objectives. One of the key issues that needs to be addressed is the negative effects of feeding wildlife.

**Objective:** Create educational pamphlets and news releases describing past management activities and future management objectives on a yearly basis.

***Strategies***

1. Create a pamphlet on wild turkey life history that includes the negative effects of feeding turkeys, how to avoid negative turkey interactions, past and future WDFW management activities, differences between male and female turkeys, and watchable wildlife opportunities.
2. Create an informational web page that addresses common interests and concerns regarding wild turkeys.
3. Enter into cooperative educational ventures with resource-oriented groups, such as local chapters of the National Wild Turkey Federation, National Audubon Society, and city and county tourism agencies.
4. Publicize the economic benefits created by the increase in turkey related recreation, especially in rural economies.
5. Produce timely news releases that cover substantial new turkey management activities.

## Enforcement Needs

### Issue Statement

Illegal activities such as trespass are a common problem in some areas of the state, especially in parts of northeastern Washington where turkey hunter numbers are rising annually. If left unaddressed, private landowner relationships may be impacted and hunter access will decline.

**Objective:** Concentrate efforts on illegal harvest, public education, and landowner relations during appropriate times of the year.

***Strategies***

1. Increase enforcement patrols in area where turkey hunters are concentrated.
2. Work with landowners to address their concerns and needs.
3. Use media outlets (including the Internet) to provide guidance for hunting on private property.

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# APPENDIX 1: Nuisance and Damage Response

# Wild Turkey Damage / Nuisance Control Options in Washington

***Methods not requiring a permit***

| *Method* | *Description* | *Considerations* | *Restrictions / Recommendations* | *Region of use* | *Cost* |
|---|---|---|---|---|---|
| **Fear Provoking Stimulus:** | | | | | |
| Flagging | Mylar tape or balloons, pie plates and other types of visual stimulus set up around resource being protected. | Alternate food source is required for success during winter months.<br><br>Can be effective with exclusion, diversion, or other fear-provoking stimulus. Habituation is an issue. | All fear provoking stimuli work better in combination with other control options. | Statewide | Low |
| Predator models | Scarecrow, Scaryman®, or other predator model | Can be effective with exclusion, diversion, or other fear-provoking stimulus.<br><br>Some motion will be required to keep birds from becoming habituated to the model too quickly. Ultimately birds may become habituated anyway. | All fear provoking stimuli work better in combination with other control options. | Statewide | Med. - High |
| Exploders | Shell crackers, propane cannons, sirens, fire crackers, etc. | Birds can become habituated to noisemakers.<br><br>It may require some experimentation to determine the best way to use cracker shells. | Some local restrictions may apply, check with local government before attempting. | Statewide | Med. - High |
| Distress & Alarm | A tape recording of the distress or alarm call to deter turkeys. | Use distress call in association with a predator model for most effectiveness.<br><br>Birds can habituate to distress call but not as quickly as other noisemakers. | All fear provoking stimuli work better in combination with other control options. | Statewide | Med. |
| Dogs | Moving the family dog closer to damage area or training a guard dog. | Neighbors | All fear provoking stimuli work better in combination with other control options. | Statewide | Low -Med. |
| Hazing | Hazing birds with motor vehicles or other methods. | | All fear provoking stimuli work better in combination with other control options. | Statewide | Low-Med. |
| Roost Disturbance | Repeatedly disturbing roost sites near dark to encourage turkeys to use a different area. | Best used in combination with other fear provoking stimuli or alternate control method (e.g., fencing or alternate food source) | All fear provoking stimuli work better in combination with other control options. | Statewide | Low |

| *Method* | *Description* | *Considerations* | *Restrictions / Recommendations* | *Region of use* | *Cost $* |
|---|---|---|---|---|---|
| **Exclusion or Food Removal:** | | | | | |
| Remove Attractant | Have landowner remove available birdseed or other food attractant. | This should be one of the first options pursued. This method would be more successful if combined with other control techniques. | No restrictions. Landowner educational materials about living with wildlife should be made available. | Statewide | Low |
| Obstacles | Hay bales, equipment, other obstacles | Storing hay bales or equipment around food source coupled with fear provoking stimuli can be effective. | None | Statewide | Med. - High |
| Fencing | Snow fence, fine mesh, other fence material | Erected around resource of concern to keep turkeys out. Use with other control techniques (e.g., fear provoking stimuli) for better results. | WDFW will not purchase fences for landowners. WDFW should help facilitate fence construction when possible. | Statewide | High |
| **Repellents:** | | | | | |
| Chemical Application | ReJex-it Bird Aversion, Bird Shield, etc. | Limited success on birds in general. Research on bird repellents is ongoing in the private sector | Permit may be required depending on chemical used. Check labeling before chemical application. | Statewide | Med. |
| Audio Repellents | Audio devices designed to deter birds from a specific area | May have limited long term success | Likely best suited in combination with other control methods | Statewide | Med |
| **Diversion:** | | | | | |
| Supplemental Feed Sites | Alternate food sources provided off site to attract birds away from resource being protected | Diversion may initially reduce wildlife damage but effectiveness will wane over time. Consequently, diversion is least suited for problems that occur during seasons when natural food is scarce.<br><br>If the program is discontinued, damage could be worse than before initiation.<br><br>Use in conjunction with other control method for best results. | A National Wild Turkey Federation program may assist with this type of project.<br><br>Paying for feed using WDFW management funding will not be a high priority. | Statewide (especially in eastern WA) | High |

| *Method* | *Description* | *Considerations* | *Restrictions / Recommendations* | *Region of use* | *Cost $* |
|---|---|---|---|---|---|
| **Habitat Manipulation:** | | | | | |
| Change resource or the way it is managed | Change crop that is planted, time of planting and harvest, etc. | Changing what is planted to a less palatable plant or when it is planted and harvested can reduce damage.<br><br>However, this may not be an alternative due to economic or seasonal restraints. | This option will have limited application, but should remain a consideration if appropriate. | Statewide | Low |
| Modify habitat at resource | Changing ground cover or habitat within short distance from the resource of concern. | Making the site unattractive to wildlife can help reduce damage. Removing cover from around resource will make the area unattractive to most wildlife. | This option will have limited application, but should remain a consideration if appropriate. | Statewide | Med. |
| Change landscape | Plant similar crops close together, change habitat away from resource to attract wildlife there (i.e., put in food plots in other areas). | Planting crops close together both spatially and temporally should reduce damage from animals using the crop at a specific time. | This option will have limited application, but should remain a consideration if appropriate. | Statewide | Med. - High |
| ***Methods requiring a permit or authorization*** | | | | | |
| **Lethal/Removal Methods: Prior to removal, a determination of wild vs domestic must be made so domestic turkeys are not translocated unknowingly** | | | | | |
| Hunting | Encouraging hunters to remove animals during the open hunting season.<br><br>Recommend fall turkey hunting opportunity in areas where turkey populations need to be decreased.<br><br>Recommend an early spring hunting season in areas where wintering bird populations need to be controlled. | WDFW representatives to work closely with the landowner to develop restrictions on the sex and age of the birds or animals being removed, where the hunters can hunt, and any other restrictions they wish to place to ensure that hunting has the desired effect. | Hunters must observe state regulations and seasons.<br><br>Fall turkey hunting does not ensure removal of turkeys from the offending population.<br><br>Early spring seasons (depredation seasons) are not currently available. **Rule revision would be required**. | Areas open to hunting | Low |

| | | | | | |
|---|---|---|---|---|---|
| Out of season kill permit | A local enforcement officer can issue out of season kill permits.<br><br>The landowner will be responsible for the removal of birds. | Other methods should have been attempted and failed.<br><br>Issuing officer, local biologist, and landowner should consider ecological and social ramifications if a permit is issued. | The officer, in consultation with the local biologist, will establish conditions of the permit. | Statewide | Low |
| ***Method*** | ***Description*** | ***Considerations*** | ***Restrictions / Recommendations*** | ***Region of use*** | ***Cost $*** |
| Licensed Nuisance Wildlife Control Agent | Similar to out of season kill permits. May also be an option for areas where discharging firearms is prohibited or unsafe. WDFW can authorize a Nuisance Wildlife Control Agent to remove turkeys causing damage. | Same as above. | Same as above. | Urban or non-huntable areas of the state. | High |
| Trap and Transfer | Problem birds are trapped and transferred to an area designated by the local biologist in conjunction with the population management plan. Approval from the Regional Program Manager and/or Upland Game Section Manager is needed. | This is a tool of last resort only if all else has been tried and does not work.<br><br>Should be used in conjunction with diversionary method. | Tool of last resort.<br><br>WDFW will conduct trapping or will coordinate with volunteers for the removal and translocation of birds. | Statewide | High |

## APPENDIX 2: Wild Turkey Monitoring (NE Washington Pilot)

# Wild Turkey Monitoring

(A Pilot Northeast Washington (District 1) Survey)

**Overall Goal: Create a harvest-independent population index for wild turkeys**

## Protocol:

### General:

- Surveyors may be WDFW staff or volunteers.
    - District biologist will coordinate completion of survey routes.
- Surveys will be vehicle-driving routes.
    - Surveyors must adhere to established protocols and will not leave routes to access more birds (farms, yards).
- Surveyors should not exceed 35 mph during the route.
- Surveyors to stop the vehicle to count turkeys, making sure to look for other birds in the immediate vicinity or hidden in vegetative cover.
    - The drivers will make stops only when and where it is safe to do so. Safety first – count the birds second.
- Two surveyors per vehicle are needed.
- Weather must meet the following criteria:
    - Visibility not less than 1/2 mile
    - Wind speed must be less than 10 mph (leaves and twigs in constant motion).
    - Days where it is not raining or snowing are preferred.
- Surveys will be conducted between 7:00 am and 10:00 am. Surveys will begin ½ to 1 hour after sunrise. Depending on season: 7:30 to 9:00 am.
- Adequate binoculars and/or spotting scopes are required.
- Survey forms will be provided and must be completed and submitted to the coordinating district biologist.

### Routes:

- Routes will be developed by the appropriate district biologist in consultation with the Upland Game Section staff.
- Identification of Routes:
    - Minimum of 15 miles, Maximum of 30 miles
        - No more than 3 hours to complete.
        - Routes will be continuous (not segmented).
    - Routes shall be located to avoid double sampling.
    - Distribute a greater number of routes in areas of high population with fewer in medium population areas and the fewest in areas of low population.
    - Maps for each survey route will be developed and provided to surveyors.
        - Routes will be developed using WDFW and volunteer input.
        - Route descriptions may be developed for each route.

- Survey Route Replicates:
    - Goal: 3 replicates per route per year during the survey period (this may change in subsequent years).
        - Replicates will take place during a 3 week time period between January 1 and the end of February.
        - NOTE: During this pilot project, surveys may be conducted during late September or late December to evaluate the most effective survey time period.
    - If replicates cannot be completed 3 times, get as many replicates as possible within the 3 week window of opportunity.
    - Replicates must be separated by at least 3 days.
    - Individual routes will be driven in the same direction and manner in every case.

**Data Collection / Storage:**

- Data sheets will be provided.
- Data Collected:
    - Snow cover and approximate depth (data sheet will have choices)
    - Weather (including sky, wind, precipitation: possibly with choices provided on the data sheet).
    - Visibility (data sheet will have choices provided)
    - Odometer reading from starting point for each turkey group location.
    - Total group count
    - Group composition (adult males:"others")
        - NOTE: This may not be possible, or practical, but it will be attempted during the pilot phase.
    - General habitat type at location (data sheet will have choices provided)
    - Groups will be sequentially numbered and group locations will be placed on the route map for transfer to GIS database.
- When possible, routes will be sampled by at least one of the same surveyors in successive replicate counts and successive years.
- Data to be collected from surveyors (whether WDFW staff or volunteers) by the local district biologist.
- Data to be compiled into a WDFW supported spreadsheet or database by District or Regional staff and submitted to the Upland Game Section manager within 30 days of the completed survey period.
- At a minimum, compiled data will be stored in a corporate system.
- Once interpreted, information developed from the collected data will be provided to the public through Status and Trend publications, direct communication with the surveyors, and other means as needed.

Washington Department of FISH and WILDLIFE

# WILD TURKEY WINTER SURVEYS

## ROUTE NAME: _____

**Surveyor Names:**_____ (1) | _____ (2)  **Survey Date:** _____

**Weather:**  **Temperature:** _____

**Wind Speed:** Calm 1-5 mph 5-10 mph 10+ (circle one)
**Sky:** Clear Partly Cloudy Cloudy (circle one)
**Precipitation:** none snowing raining
**Visibility:** Unlimited 1 mile 1/2 mile < 1/2 mile

**TIME:** Begin Survey:_____
End Survey:_____

**ODOMETER MILEAGE:** Begin Survey:_____
End Survey:_____

| GROUP | ROUTE MILE# | TOTAL TURKEYS | TOTAL ADULT MALE | HABITAT TYPE* | SNOW COVER** | SNOW DEPTH*** | | GROUP | ROUTE MILE# | TOTAL TURKEYS | TOTAL ADULT MALE | HABITAT TYPE* | SNOW COVER** | SNOW DEPTH*** |
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*** HABITAT CHOICES:** **P** = *Pasture* ; **CF** = *Conifer Forest* ; **CF/PE** = *Conifer Forest/Pasture Edge* ; **RF** = Riparian Forest ; **RF/PE** = Riparian Forest/Pasture Edge ; **FY** = Farm Yard ; **R** = Residential

**** Approximate Snow Cover (How much of the area has snow?):** ***None ; 0 - 33% ; 34 - 66% ; 67 - 100%***

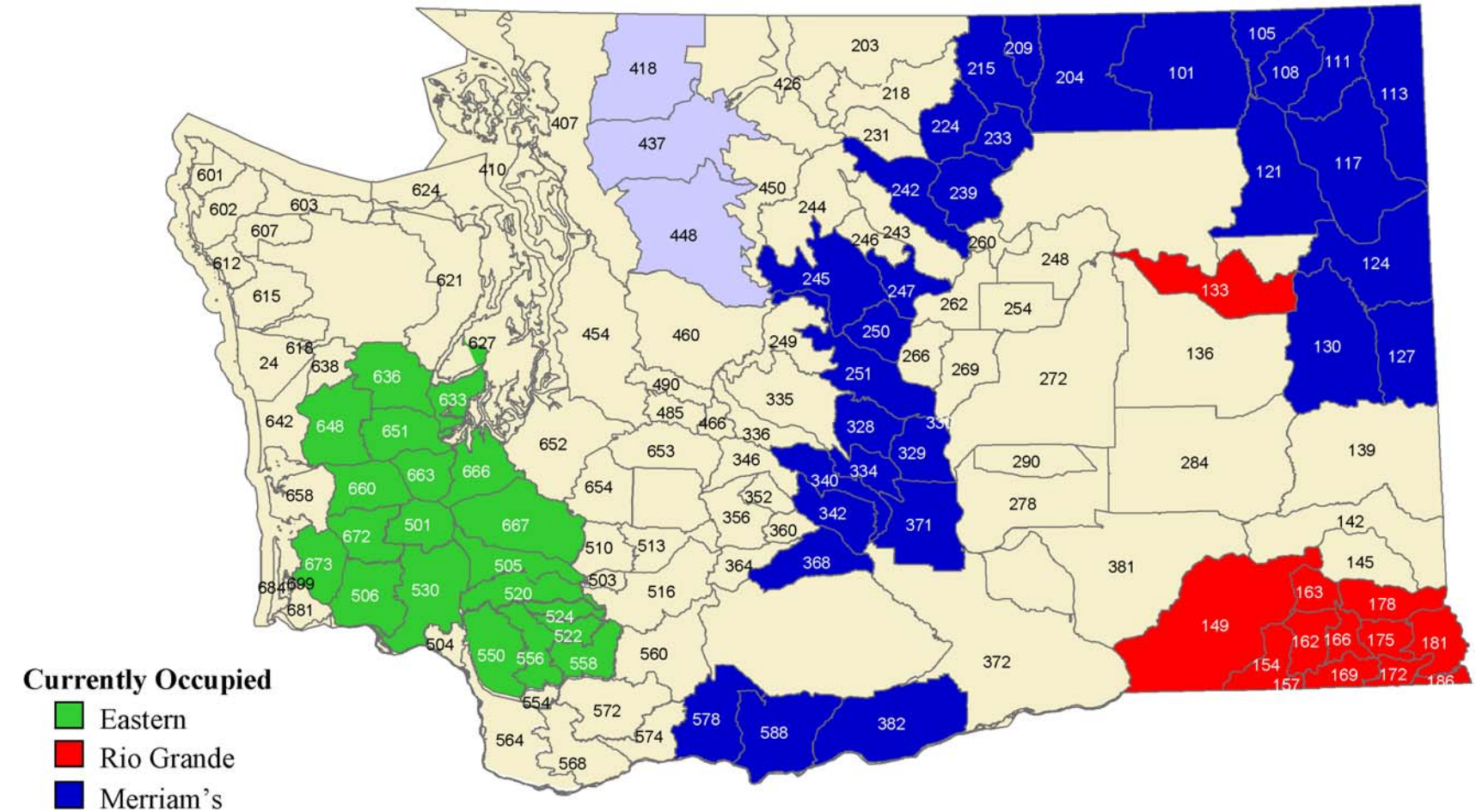
***** Approximate Average Snow Depth:** ***None ; Trace-1" ; 1" - 5" ; 6" - 10" ; 11" - 20" ; 21"+***

**# Route Mile: Record odometer or tripometer reading to nearest 1/10 mile**

**SURVEYOR COMMENTS:** _____

## APPENDIX 3: Primary Wild Turkey Management Area Map

# Primary Wild Turkey Management Areas
## (By Game Management Unit)




**Currently Occupied**

- Eastern
- Rio Grande
- Merriam's

**Potential Introductions**

- Sub-species to be determined

# APPENDIX 4: Turkey Food Habit Studies

# A LIST OF TURKEY FOOD HABITS STUDIES

| Age | Season | Location | # Samples | Type | % Animal (mostly insect) | % Reptile/ Amphibian | Reference |
|---|---|---|---|---|---|---|---|
| adult | fall | Florida | 8 | crop | 0 | 0 | Lovett Williams 1988 |
| adult | fall | Montana | 226 | crop | 0 | 0 | R. Jonas 1966 |
| adult | fall | New York | 30 | crop | 10.46* | 0 | Eaton & Saylor 1962-pers. Comm. In Hewitt 67 & Williams 81 |
| adult | fall | Pennsylvania | 15 | crop | 2.3 | 1 lizard | Bennett & English 1941 in Williams 81 |
| adult | fall | Texas | 31 | crop | 5.62 | 0 | Beck & Beck 1955 |
| adult | fall | South Dakota | 30 | crop | 0 | 0 | Laudenslager & Flake 1987 |
| adult | fall | Florida | 32 | crop | 2.9 | 0 | Schemnitz 1956 |
| adult | fall | Arizona | 126 | crop | | | Burget 1957 in Schorger 66 |
| adult | fall | Washington | 21 | crop | 45.4* | 0 | Mackey 82, Mackey & Jonas 82 |
| adult | fall | Wisconsin | 250 | crop | 12 | 0 | Paisley, Wright, & Kubisiak 96 |
| adult | fall | Arizona | 13 | crop | 0 | 0 | Ligon 46 |
| adult | fall | Wyoming | 88 | crop | 3 | trace—bone fragments | Unpub. Report |
| adult | spring | Texas | 25 | crop | 34.02 | 0 | Beck & Beck 1955 |
| adult | spring | New Mexico | 14 | crop | | 0 | |
| adult | spring | Arizona | 3 | crop | 0 | 0 | Murie 1946 |
| adult | spring | Tennessee | 87 | crop | 1.1 | 0 | Tabatabai & Kennedy 1984 |
| adult | spring | New Mexico | 24 | crop | 13.1* | 0 | Schemnitz 1983 & et al. 85 |
| adult | spring | New Mexico | 26 | crop | trace* | 0 | Schemnitz 1983 & et al. 85 |
| adult | spring | Washington | 14 | crop | 0.5* | 0 | Mackey 82, Mackey & Jonas 82 |
| adult | spring | Wisconsin | 100 | crop | 3** | 0 | Paisley, Wright, & Kubisiak 96 |
| adult | spring | Missouri | 823 | cr & giz | ? | 0.4-snakes | Korschgen 73 |
| adult | spring | Missouri | 22 | cr & giz | 3.2 | 0 | Korschgen 73 |
| adult | spring | Arkansas | 22 | crop | ? | 0 | Meanley 1956 in Hewitt 67 |

| Age | Season | Location | # Samples | Type | % Animal (mostly insect) | % Reptile/ Amphibian | Reference |
|---|---|---|---|---|---|---|---|
| adult | summer | South Dakota | 31 | crop | 0 | 0 | Petersen & Richardson 1973 |
| adult | summer | Texas | 27 | crop | 5.55 | 0 | Beck & Beck 1955 |
| adult | summer | Wisconsin | 3 | crop | 21 | 0 | Wright, Paisley & Kubisiak yr? |
| adult | summer | Wisconsin | 6 | crop | ? | 0 | Paisley, Wright, & Kubisiak 96 |
| adult | summer | Alabama | 21 | crop | 30 | 0 | Hamrick & Davis 71 |
| adult | summer | South Dakota | 63 | crop | ? | 0 | Petersen & Richardson 75 |
| adult | winter | Montana | 15 | crop | 0 | 0 | Jonas 1966 |
| adult | winter | South Dakota | 33 | crop | 0 | tr-small bones | Petersen & Richardson 1973 |
| adult | winter | Florida | 32 | crop | 1.6* | 0 | Schemnitz 1956 |
| adult | winter | Florida | 221 | crop | 1a | 0 | Powell 1962-unpubl. In Hewitt 67 |
| adult | winter | Florida | 191 | crop | 0.8a | 0 | Powell 1962-unpubl. In Hewitt 67 |
| adult | winter | Florida | 136 | crop | 0.3a | 0 | Powell 1962-unpubl. In Hewitt 67 |
| adult | winter | Virginia | 101 | crop | 6 | 0 | Culbertson 1948 in Williams 81 |
| adult | winter | Texas | 25 | crop | 1.96 | 0 | Beck & Beck 1955 |
| adult | winter | Florida | | | | small snake | Howell 1932 in Schorger 66 |
| adult | winter | Arizona | 38 | crop | 6.87*** | 0 | Unpub. Report |
| adult | winter | Mississippi | 10 | crop | 0.02* | 0 | Parker 67 |
| adult | winter | Mississippi | 10 | crop | 3.6 | 0 | Kennamer & Arner 67, Kennamer 66 |
| adult | fall/wint | Virginia | 115 | crop | 6.74 | 0 | Martin, et al 1939 in Hewitt 67 |
| adult | fall/wint | Florida | 548 | crop | 8.1 | 0.05-lizard | Powell 1962 in Hewitt 67 & 1965 |
| adult | wint/spr | Texas | 40 | crop | 18.7* | 0 | Pattee & Beasom 81 |
| adult | all | Florida | 221 | crop | | 0 | Unpub. Report |
| adult | all | Florida | 191 | crop | | 0 | Unpub. Report |
| adult | all | Florida | 136 | crop | | 0 | Unpub. Report |
| adult | all | California | 58 | crop | 2.8* | 0 | Smith & Browning 1967 |

| Age | Season | Location | # Samples | Type | % Animal (mostly insect) | % Reptile/ Amphibian | Reference |
|---|---|---|---|---|---|---|---|
| adult | all | Arizona | 29 | crop | 13.1 | 0 | Scott & Boeker 73 |
| adult | all | Arizona | 20 | crop | 17.9 | 1 horned lizard | Scott & Boeker 73 |
| adult | all | Arizona | 36 | crop | ? | 0 | Scott & Boeker 75 |
| adult | all | South Carolina | 147 | crop | 11.2/.24a | 0 | Warlick 70 |
| adult | | Colorado | 200 | crop | 16 | 0 | Hoffman 1962 in Williams 81 |
| adult | | Colorado | 85 | crop | 20 | 0 | Burget 1957 in Williams 81 |
| adult | | Arizona | 24 | crop | trace | 0 | Murie 1946 |
| adult | | Arizona | 23 | crop | 11 | 0 | Reeves & Swank 1955 in Williams 81 |
| adult | | Texas | 38 | crop | 1.5 | 0 | Walker & Blakey no yr in Williams 81 |
| adult | | Texas | 16 | crop | 26.4 | 0 | Glazener--pers. Comm. In Williams 81 |
| adult | | Texas | 25 | crop | | 0 | Beck & Beck 55 |
| adult | | Texas | 25 | crop | 33 | 0 | Beck & Beck 55 |
| adult | | Texas | 27 | crop | 3.5 | 0 | Beck & Beck 55 |
| adult | | Texas | 31 | crop | 4.9 | 0 | Beck & Beck 55 |
| adult | | New Mexico | 1 | crop | ? | 1 horned toad | Ligon 46 |
| ? | ? | Florida | 10 | crop | | | Garrison 54 in Schorger 66 |
| adult | fall | Missouri | 1,604 | fecal | 16.1 | 0 | Dalke, Clark, & Korschgen 1942 |
| adult | fall | Pennsylvania | 176 | fecal | 6.2 | 0 | Kozicky 42 in Williams 81 |
| adult | fall | Michigan | 75 | fecal | 8.5 | 0 | Lewis 62 in Williams 81 |
| adult | fall | New York | 70 | fecal | | 0 | Eaton & Saylor 62-unpubl. In Hewitt 67 & Williams 81 |
| adult | fall | Pennsylvania | 174 | fecal | | 0 | Unpub. Report |
| adult | fall | Arizona | 43 | fecal | | 0 | Schorger 66 |
| adult | fall | Alabama | 117 | fecal | 0 | 0 | Barwick & Speake 73 |
| adult | fall | South Carolina | 559 | fecal | 22* | 0 | Exum 85 & Exum et al 87 |
| adult | fall | Wyoming | 88 | fecal | 7 | 0.13--bone | Hengel 90 |

| Age | Season | Location | # Samples | Type | % Animal (mostly insect) | % Reptile/ Amphibian | Reference |
|---|---|---|---|---|---|---|---|
| adult | spring | Alabama | 1,706 | fecal | ? | 0 | Kennamer, Gwaltney & Sims 80 |
| adult | spring | Missouri | 993 | fecal | 0.5 | 0 | Dalke, Clark, & Korschgen 42 |
| adult | spring | Michigan | 208 | fecal | | 0 | Lewis 62 in Williams 81 |
| adult | spring | New York | 90 | fecal | | 0 | Unpub. Report |
| adult | spring | Pennsylvania | 90 | fecal | 0.7 | 0 | Kozicky 42 in Williams 81 |
| adult | spring | New York | 117 | fecal | 0.6 | 0 | Eaton & Saylor 62-unpubl. In Hewitt 67 & Williams 81 |
| adult | spring | South Carolina | 249 | fecal | 25 | 0 | Exum 85 & Exum et al 87 |
| adult | spring | Wyoming | 53 | fecal | 42 | 0.12--bone | Hengel 90 |
| adult | summer | Michigan | 305 | fecal | 5.6 | 0 | Lewis 62 in Williams 81 |
| adult | summer | Missouri | 292 | fecal | | 0 | Dalke, Clark, Korschgen 42 |
| adult | summer | Pennsylvania | 140 | fecal | | 0 | Kozicky 42 in Williams 81 |
| adult | summer | NY/PA | 286 | fecal | | trace-salamander vertebrae | Eaton, Moore & Saylor 70 |
| adult | summer | West Virginia | 4,249 | fecal | 1.6 | 0 | Glover & Bailey 49 |
| adult | summer | South Carolina | 140 | fecal | 22* | 0 | Exum 85 & Exum et al 87 |
| adult | summer | Wyoming | 74 | fecal | 32 | 0 | Hengel 90 |
| adult | winter | Missouri | 750 | fecal | trace | 0 | Dalke, Clark, Korschgen 42 |
| adult | winter | Michigan | 273 | fecal | | 0 | Lewis 62 in Williams 81 |
| adult | winter | New York | 169 | fecal | | 0 | Eaton & Saylor 62-unpubl. In Hewitt 67 & Williams 81 |
| adult | winter | Pennsylvania | 364 | fecal | | 0 | Kozicky 42 in Williams 81 |
| adult | winter | South Dakota | 51 | fecal | | 0 | Rumble 90 |

| Age | Season | Location | # Samples | Type | % Animal (mostly insect) | % Reptile/ Amphibian | Reference |
|---|---|---|---|---|---|---|---|
| adult | winter | South Dakota | 100 | fecal | | 0 | Rumble 90 |
| adult | winter | Arizona | 77 | fecal | * | 0 | Wakeling & Rogers 96 |
| adult | winter | Arizona | 43 | fecal | 0 | 0 | Murie 46 |
| adult | winter | Mississippi | 46 | fecal | 30* | 0 | Kennamer & Arner 67, Kennamer 66 |
| adult | winter | South Carolina | 881 | fecal | 16* | 0 | Exum 85 & Exum et al 87 |
| adult | winter | Wyoming | 33 | fecal | 2.1 | 0.06--bone | Hengel 90 |
| adult | wint/spr | Mississippi | 80 | fecal | 1-19% | 0 | Parker 67 |
| adult | all | Missouri | 3,639 | fecal | 6.4 | 0 | Dalke, Clark, Korschgen 42 |
| adult | all | Michigan | 860 | fecal | 3.7 | 0 | Lewis 62 in Williams 81 |
| adult | all | Pennsylvania | 770 | fecal | 3.5 | 0 | Kozicky 42 in Williams 81 |
| adult | all | New York | 356 | fecal | 0.2 | 0 | Eaton & Saylor 62-unpubl. In Hewitt 67 & Williams 81 |
| adult | all | Florida | 2,775 | fecal | 4* | 0 | Schemnitz 56 |
| adult | all | Montana | 2,192 | fecal | 39.6 | 0 | Rose 56 in Williams 81 |
| adult | all | New Mexico | 42 | fecal | | 0 | Unpub. Report |
| adult | all | Missouri | 3,244 | fecal | 24 | 0 | Dalke et al 42 & 46 |
| adult | all | New Mexico | 240 | fecal | 4.1* | 0 | Potter, Schemnitz, & Zeedyk 85 |
| adult | all | Alabama | 748 | fecal | 33.3 | 0 | Sims 79 |
| adult | all | South Dakota | 44 | fecal | 0 | 0 | Rumble & Anderson 96 |
| adult | all | South Carolina | 1,576 | fecal | 8.5 | 0 | Baughman & Guynn 93 |
| adult | all | Arizona | 866 | fecal | ? | 0 | Scott & Boeker 75 |
| adult | all | New Mexico | 339 | fecal | * | 0 | Schemnitz 83 & et al. 85 |
| adult | all | Arkansas | 1,026 | fecal | ? | 0 | Meanley 56 in Schorger 66 |
| adult | all | Arizona | 249 | fecal | 2.8 | 0 | Reeves & Swank 55 in Williams 81 |
| adult | all | Montana | 2,192 | fecal | 39.6 | 0 | Rose 56 in Williams 81 |

| Age | Season | Location | # Samples | Type | % Animal (mostly insect) | % Reptile/ Amphibian | Reference |
|---|---|---|---|---|---|---|---|
| adult | all | Colorado | 1,545 | fecal | 40.2 | 0 | Hoffman 55 & 62 both in Williams 81 |
| adult | all | New Mexico | 42 | fecal | 2.4 | 0 | Spicer 59 in Williams 81 |
| adult | all | Arizona | 23 | fecal | 11 | 0 | Reeves & Swank 55 in Williams 81 |
| adult | spring | New Mexico | 8 | gizzards | | 0 | Unpub. Report |
| adult | fall | Alabama | 116 | stomach | 11.71 | 0 | Good & Webb 40 in Williams 81 |
| adult | fall | New York | 30 | stomach | | 0 | Eaton & Saylor 62 in Hewitt 67 & Williams 81 |
| adult | fall | Pennsylvania | 15 | stomach | | 0 | Bennett & English 41 in Hewitt 67 & Williams 81 |
| adult | spring | Alabama | 116 | stomach | 11.6 | 1 lizard | Good & Webb 40 in Williams 81 |
| adult | spring | Alabama | 154 | stomach | 10.3 | 0 | Wheeler 48 |
| adult | winter | Alabama | 38 | stomach | 15.1 | 0 | Webb 41 in Williams 81 |
| adult | winter | Missouri | 25 | stomach | 2.3 | 0 | Blakey 37-unpubl.-includes fall in Williams 81 |
| adult | winter | Alabama | 33 | stomach | 17.6 | 0 | Wheeler 48 |
| adult | all | Virginia | 524 | stomach | 4.7 | 0.07-3 salamanders | Mosby & Handly 43 |
| adult | summer | Arizona | 14 | other | | 0 | Unpub. Report |
| poult | fall | Florida | 22 | crop | | 0 | Unpub. Report |
| poult | fall | Virginia | 15 | crop | ? | 0 | Martin & McGinnes 75 |
| poult | spring | Mississippi | 49 | crop | | 0 | Unpub. Report |
| poult | spring | Alabama | 3 | crop | 90* | 0 | Hurst & Poe 89 |
| poult | summer | Wisconsin | 15 | crop | 87 | 0 | Wright, Paisley & Kubisiak yr? |
| poult | summer | Wisconsin | 39 | crop | 68 | 0 | Paisley, Wright & Kubisiak 96 |
| poult | summer | Mississippi | 160 | crop | 15.5 | 0 | Hurst 78 |
| poult | summer | South Dakota | 1 | crop | ? | 0 | Petersen and Richardson 75 |
| poult | summer | Alabama | 5 | crop | ? | 0 | Kirk 74 |
| poult | | Florida | 21 | crop | 25* | 0 | Barwick, Hetrick, & Williams 73 |

| Age | Season | Location | # Samples | Type | % Animal (mostly insect) | % Reptile/ Amphibian | Reference |
|---|---|---|---|---|---|---|---|
| poult | | Florida | 54 | crop | | 0.1-reptile bone fragments | Barwick, Hetrick, & Williams 73 |
| poult | summer | Alabama | 217 | fecal | 10 | 0 | Blackburn, Kirk, Kennamer 75 |
| poult | summer | Florida | 32 | fecal | | 1.9 | Unpub. Report |
| poult | summer | Alabama | 15 | fecal | 59.9 | 0 | Kirk 74 |
| poult | summer | South Carolina | 469 | fecal | 45* | 0 | Exum 85 & Exum et al 87 |
| poult | summer | Wyoming | 9 | fecal | 70 | 0 | Hengel 90 |
| poult | spring | Mississippi | 74 | stomach | | 0 | Hurst & Stringer 75 |
| poult | winter | South Dakota | | other | | 0 | Unpub. Report |
| poult | spring | Mississippi | 312 | other | | 1 ground skink | Stringer 77 |
| poult | summer | West Virginia | 30 | observ | 84 | 0 | Healy 85 |
| poult | summer | West Virginia | 8 | observ | * | 0 | Rogers 85 |
| poult | summer | West Virginia | 55 | observ | ? | 0 | Healy and Nenno 83 |
| poult | spring | Pennsylvania | 8 | observ | * | 0 | Anderson & Samuel 80 |
| poult | spr/sum | West Virginia | 36 | observ | ? | 0 | Healy 78 |
| poult | all | California | 69 | observ | ? | 0 | Burger 54 |
| ? | ? | Kentucky | | observ | ? | Tadpoles & lizards | Audubon 1831 in Schorger 66 & Judd 1905 in Bent 1932 |
| ? | ? | South Carolina | | observ | ? | fiddler crabs & shad frogs | Davis 49 in Schorger 66 |
| ? | ? | West Virginia | | observ | ? | 1 dusky salamander | Bailey & Rinell 60 in Schorger 66 |
| ? | ? | Missouri | | observ | ? | lizards | Woodruff 1908 in Schorger 66 |
| ? | ? | Indiana | | observ | ? | Garter snakes | Hay 1892 in Schorger 66 |
| ? | ? | | | observ | ? | snake | Caton 1877 in Schorger 66 |

Footnotes:
* all insects
** worms & snails
a – listed as animal foods

## APPENDIX 5: Comments and WDFW Responses

# WILD TURKEY MANAGEMENT PLAN PUBLIC COMMENT AND WDFW RESPONSE

| PUBLIC COMMENT | WDFW RESPONSE |
|---|---|
| POPULATION MANAGEMENT COMMENTS | |
| Please add GMUs 437 and 418, and 407 to the list of potential introduction GMUs. I know that these units will hold healthy populations of wild turkey. I think you should use the Merriam's sub-species | GMUs 418, 437, and 448 are identified in the plan. GMU 407 was not identified as a good area for potential introduction. The most appropriate areas are those that are sufficiently removed from agricultural, residential, urban, and national park areas. The use of Merriam's sub-species for potential introductions will be evaluated |
| Recommend adding GMU 460 and GMU 407 to the list of potential introduction GMUs. | GMUs 407 and 460 were not identified as good areas for potential introduction. The most appropriate areas are those that are sufficiently removed from agricultural, residential, urban, and national park areas. |
| Appreciate identification of potential introduction areas in northwest Washington and fully support the criteria necessary for release approval as written | Thank you for your comment. |
| We agree with the "reasonable person standard" that you propose for evaluation | Thank you for your comment. |
| Recommend using Merriam's sub-species in the potential introduction area rather than the eastern sub-species. | The designation of the potential introduction area as "Eastern Wild Turkey" has been removed. All sub-species will be evaluated and the most appropriate sub-species will be used. |
| WDFW should investigate using a different sub-species other than easterns for the potential introduction area. | The designation of the potential introduction area as "Eastern Wild Turkey" has been removed. All sub-species will be evaluated and the most appropriate sub-species will be used. |
| There have been turkeys seen on the west side of Snoqualmie Pass, presumably from the east side. We believe a plant of Merriam's would take hold . | The designation of the potential introduction area as "Eastern Wild Turkey" has been removed. All sub-species will be evaluated and the most appropriate sub-species will be used within the potential introduction area. |
| Turkey populations in PMU P20 and PMU P30 are valuable resources. Consider continued augmentation of these populations with nuisance and damage trapped birds. | WDFW's goal is to establish self-sustaining populations in the most appropriate habitats and does not want to manage turkeys with a put-and-take population management strategy. The WDFW has transplanted hundreds of birds through multiple augmentation efforts in each of these units over the past 20 years. Through the years, populations have experienced times of growth only to be followed by severe declines. Evaluation over the next 5-year period will help determine if these areas are some of the most appropriate areas for wild turkeys. |
| Release birds in P20, P30, P40 and P35 | These PMUs currently support wild turkey populations. P35 and P40 are identified as potential release sites for nuisance and damage turkeys (currently occupied by Merriam's and eastern subspecies). P20 and P30 are under evaluation during the timeframe of this management plan. |
| All turkey populations need to be actively managed wherever they exist. Please add counties that have reproducing turkey populations into your plan. | WDFW does manage turkeys on a statewide basis (e.g., setting hunting seasons), however, the area identified in Appendix 3, designated as the Wild Turkey Management Area, is where population management efforts will be concentrated. For clarification, this area is now called the "Primary Wild Turkey Management Area". |
| Continue to move captured birds in the state to other areas deemed suitable | According to the Plan, wild turkeys captured in response to damage or nuisance complaints will be released within the Primary Wild Turkey Management Area in or adjacent to currently occupied areas. These birds may be released in the potential introduction area if the sub-species is identified as the most appropriate for that area. |

| PUBLIC COMMENT | WDFW RESPONSE |
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| Urge WDFW to establish a wild turkey population along the Yakima River. | WDFW's goal is to establish self-sustaining populations in the most appropriate habitats. During the habitat analysis phase of the plan, the Yakima River area was not identified as appropriate habitat due primarily to the lack of contiguous forest habitat, the quantity of agricultural operations, and the amount of urban and suburban development. |
| Release more turkeys along the entire length and on both east and west sides of the Cascade Mountains. | WDFW's goal is to establish self-sustaining populations in the most appropriate habitats. The potential introduction areas were identified as having the greatest potential based on habitat type, urban and sub-urban development, elevation, snowfall, precipitation, and land ownership. Other areas either had existing populations or had characteristics that were not desirable. |
| Why is Fish and Wildlife introducing an exotic species that out competes native species? This program needs to be terminated before they damage the grouse and quail populations. | The WDFW has been managing turkeys in Washington for several decades in efforts to maintain and improve wildlife-related recreation. Scientific literature reviews do not reveal any negative population level wild turkey impacts on other species. However, activities are identified in Section 3, Research Needs, which will help identify any potential issues and continue scientific based management actions. As a point of clarification, most quail in Washington (California Quail) are not native to the state. |
| Close hunting seasons or limit the number of turkey tags sold to allow areas with poor flock numbers to regenerate. | Spring hunting seasons are specifically aimed at male turkeys. Research shows that, in general, these seasons do not have an impact on a population's reproductive potential. Fall seasons, which are either sex seasons, can have an effect on reproductive potential and therefore are only authorized in areas that have a large enough population to withstand a fall hunt. |
| WDFW biologists should be able to trap and move wild turkeys for damage or population concerns. The draft plan addresses new population augmentation to go through several levels of procedure and approvals before release is granted. Does WDFW do this for other fish and wildlife? | The plan provides regional biologists the flexibility to release trapped nuisance or damage birds within the currently occupied area designated in Appendix 3 (Section 3, Population Management Strategies 3, a, i ). The WDFW does have other population management plans (e.g., elk, and sharp-tailed grouse) and the approval procedure varies. |
| I live and hunt in Okanogan County. Though I would like to see more turkeys in our county, I can't disagree with your "wait and see" proposal. And I would discourage feeding of turkeys too. | Thank you for your comment. |
| The current GMU map in Appendix 3 does not accurate depict existing wild turkey distribution. A more accurate map is needed. | Wild turkeys are managed on a Game Management Unit and Population Management Unit (a group of GMUs) basis. While not all areas within all identified GMUs are occupied, the existing map does provide an appropriate management scale. |
| Small populations of birds in Yakima area likely have limited genetic diversity. Additional releases would improve the genetics. | In general, population depression due to genetic inbreeding is not common in game birds. In addition, there have been many different releases in these areas over the years, with birds coming from several different sources. Genetic diversity issues are not likely to occur unless individuals from nearby populations do not cross over for many successive generations. Other factors, like winter survival and spring production, are more likely to be controlling population growth. |

| PUBLIC COMMENT | WDFW RESPONSE |
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| Turkey trapping is currently limited to areas experiencing nuisance and damage. Therefore, all turkeys intended for release into approved introduction areas are those already habituated to cause trouble. Please consider opening the opportunity to trap from surplus areas not prone to causing damage or nuisance. | The turkey trapping section was modified to allow trapping birds from sites with healthy increasing populations if needed to address population management objectives. |
| Why is the Department proceeding with introduction into new areas when important questions have not been answered? | Existing literature does not reveal any negative population-level wild turkey impacts on other species. In addition, the population management section of the plan requires additional investigation of potential impacts at proposed release sites prior to releases taking place. |
| NUISANCE TURKEY COMMENTS | |
| Make trap and transfer the first priority in answering nuisance calls | Experience working with nuisance and damage complaints in northeastern WA show that many complaints can be addressed with other means such as removing bird feeders or other sources of food. Trapping is an expensive alternative that may not be necessary to solve the problem. |
| Partner with NWTF in funding trap and transfer operations | In the past, WDFW cooperated with the National Wild Turkey Federation on trapping operations. We are appreciative of their assistance and we do not intend on ending that partnership. |
| Increase efforts to stop the voluntary feeding of turkeys on private lands by removing financial support to landowners who feed wild turkeys and who then want financial assistance from the state for damage to crops and buildings | To our knowledge, WDFW has not paid for turkey damage to crops and buildings. There are strategies identified in the Plan to improve educational outreach regarding the negative effects of feeding wild turkeys. |
| Since turkeys are not always welcome by farmers and landowners, making relocation an option of last resort is not the right answer. | Experience has shown that trapping is not needed in many cases. In addition, it is expensive and time consuming. If situations can be remedied without trapping, that would be preferred. In addition, increasing recreational hunting of turkeys is preferable to removal through trapping. If these and other options do not work or are not available, then birds will be trapped. |
| Either sex fall turkey seasons should be used to control populations in areas where they are a persistent problem. | WDFW agrees with this concept and has been increasing fall hunting opportunities in northeastern WA over the past several years. |
| Place nuisance and damage birds from private lands to local public-accessible lands with no, or low, current populations but that are capable of supporting turkeys. | The WDFW agrees with this statement and have addressed the concept (Section 3, Population Management 3, a, i ). |
| Have two fall tags or have damage hunts to help with nuisance wintertime birds. | A variety of harvest related options are going to be considered as tools to help address damage and nuisance issues. |
| Let hunters help deal with problem turkeys. | A variety of harvest related options are going to be considered as tools to help address damage and nuisance issues. |
| The fall 2004 hunt, which was open to all hunters, has not helped control the population because there were not enough hunters. | Additional days were added to the fall general season hunt for the 2005 season. WDFW will be looking for additional ways to increase fall hunter participation and harvest. |
| We have too many turkeys on our property and they are a nuisance. Please consider landowners as well as hunters as you draft these plans. | Thank you for your comment. Strategies to help address nuisance issues are included in the plan. |
| Lethal removal of turkeys should not be an option ever! | The Department has several options available to help deal with nuisance turkeys. Non-lethal removal and removal of individuals via hunting or specific kill permits allow maximum flexibility for the agency to address problems appropriately. |

| PUBLIC COMMENT | WDFW RESPONSE |
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| What is the long-term plan for nuisance management and are nuisance problems likely to get worse? | Appendix 1 of the Plan contains a matrix of nuisance management options. It is possible that turkey complaints will increase in areas where human population is expanding into wildlife habitat. However, the Department plans to utilize the management options outlined in the Plan to manage the situation. |
| PUBLIC ACCESS COMMENTS | |
| Increase efforts to identify public hunting areas (i.e., DNR, BLM, etc) | In October 2004 the WDFW released a web-based mapping program (GoHunt) that identifies lands in public ownership. In addition, maps showing private lands open to public hunting are being developed. |
| Create fines for private landowners who post no trespassing signs on government lands. | Current law makes posting lands that you do not own or lease a misdemeanor violation. However, a lessee may be able to post government property if the lease allows for it. |
| Efforts to increase public access to private land in Stevens and Ferry counties would be very beneficial to turkey hunters. | Northeastern Washington is one of the proposed focus areas of the Private Lands Partnerships program if funding is identified for expanding the program. |
| Increase efforts to work with corporate/private landowners that want to make wild turkeys a priority | Focused efforts on private lands are tied to the number of biologists available in an area. To date, WDFW efforts have been primarily on lands that are open to public hunting, which are often public lands. In the future, turkey management activities may focus more on private lands if there is staff time available to work with interested private landowners who open their lands to public recreation. |
| Partner with the NWTF to create multiple turkey viewing areas for the public. | WDFW is committed to working with the National Wild Turkey Federation on many aspects of turkey management and turkey related recreation. Individual chapters or chapter members with ideas on how to improve the public's ability to view turkeys can contact WDFW directly or through their state chapter president. |
| Expand areas open for youth hunting. Encourage landowners to open lands for access by youth hunters | In the spring of 2006, youth hunting will be open statewide. Through our Private Lands Partnerships program, WDFW encourages private landowners to open their lands to wildlife related recreation, including turkey hunting. Strategies to improve public access to private property are identified in Section 3 of the management plan (Hunting Seasons and Hunter Access). |
| Increase the number of road closures during the hunting season so hunters must walk in to hunt. | WDFW works with many landowners on road management strategies. In general, these strategies improve hunter distribution on a piece of property. In some cases, walk-in hunting opportunities are created, while in others, opening roads increases access to more land. |
| Suggest including maps for what is and is not huntable land. Of special interest are the results of WDFW access negotiations with private landowners. | In October 2004 the WDFW released a web-based mapping program (GoHunt) that identifies lands in public ownership. In addition, maps showing private lands open to public hunting are being developed. |
| HABITAT MANAGEMENT AND FEEDING COMMENTS | |
| Increase the visibility of the NWTF in the report by making the NWTF a priority partner with WDFW, especially with habitat projects. | The National Wild Turkey Federation is, and will continue to be a key resource for turkey related habitat improvements. However, WDFW does not want to ignore potential contributions of other non-governmental organizations in Washington that may want to contribute to turkey management activities. |
| Spending money on turkey habitat or planting supplemental food sources is a waste of time and dollars. They will find their own food. | Since wild turkeys are food generalists, they are able to find many different sources of food. However, improvements to riparian corridors, natural springs, and oak forest habitat can benefit turkeys as well as many other wildlife species. In addition, improvements to wintertime food resources may help address damage and nuisance complaints in some areas. |

| PUBLIC COMMENT | WDFW RESPONSE |
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| Roads can be a positive thing for turkeys as they provide travel corridors and rock for food processing. | This is addressed in the plan (Section 2, Habitat Management, Roads). |
| Selective logging and thinning opens the under story helping to prevent predation. Clear cutting provides open areas for foraging until the cut is about six to eight years old. | The effects of logging vary depending on location and techniques involved. The Plan indicates that logging has some potential benefits for wild turkeys (Section 2, Habitat Management, Timber Harvest). |
| Make feeding turkeys more of a management strategy for marginal habitat areas. | While feeding may have benefits for some turkeys, it will likely concentrate turkeys in a given area. With large concentrations comes an increased likelihood of nuisance and damage complaints as well as increased chances of disease transmission. If turkeys only survive in marginal habitat due to feeding, then the long-term survival of the population is likely suspect. |
| Stop the on-going feeding of turkeys by homeowners without WDFW approval. | Strategies have been identified in the Plan to help educate the public about the negative effects of feeding turkeys (Section 3, Nuisance and Damage Problems and Section 3, Education). We hope that this information will help address many existing issues. |
| Wild turkey baiting policy needs to be clearer. Feeding should be either illegal or condoned, regardless of whether hunting is involved or not. | There are valid reasons that feeding turkeys is not a good idea (e.g., disease transmission), however, WDFW does not intend to create rules to regulate feeding wild birds. Hunting birds over bait is an ethical fair chase hunting issue, which is different from feeding turkeys in your back yard. |
| Prioritize improving winter habitat first. That is likely the most limiting factor and where you will get the most benefit. | The plan recognizes the value of improving winter habitat (Strategies 2 and 4 in Habitat Management section). |
| Come up with guidelines to protect critical habitat types (e.g., low elevation roost sites). | A strategy has been added to the habitat management section of the plan (Strategy 7). |
| What types of habitat alterations are being conducted (pg 20 of Draft Plan) and what are the positive and negative impacts of such development? | Typical habitat improvements such as riparian zone protection, road abandonment and replanting, and oak habitat restoration all have benefits to a great number of species. The plan specifically targets habitat improvements that benefit multiple species. |
| MONITORING COMMENTS | |
| If you are going to study the impacts of turkeys on other species, I would suggest starting with ruffed grouse in Stevens County. | Thank you for your suggestion. The species selected for investigation will be identified by gaps in existing literature and by opportunities that become available. Ruffed grouse may be one of the species that is considered for future investigation. |
| Suggest a winter-feeding station count to document western WA population trends. | Winter feeding stations are most effective in areas where large numbers of turkeys congregate during the winter where there is persistent snowfall. In western Washington, population densities are not high and snow is not persistent (or may not exist at all). These factors would lead to poor accuracy and result in poor quality data. |
| Also include organizations other than the NWTF as potential cooperators in monitoring and trapping. | The eastern WA monitoring strategy indicates the use of volunteers without specific mention of the NWTF. The help of other organizations is always welcome. |
| The proposed method of population monitoring will work better than harvest reports. | Thank you for your comment. We will continue to try to improve our harvest data. |
| More areas than main County and State roads need to be used to count the population. | The protocols do not identify which roads are to be used. However, since the counts are taking place during the winter, survey routes need to be set up along roadways that are almost always going to be open. The survey is meant to be an index to the population, not a complete count, so as long as routes are set up to be repeatable and in areas that consistently hold birds during the survey period, the identified methods should work. |

| PUBLIC COMMENT | WDFW RESPONSE |
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| Use volunteers to conduct harvest-independent surveys of turkeys in western Washington. | All wildlife surveys depend on observing individuals or groups of individuals. Several factors (including lack of persistent snowfall, habitat density, wild turkey behavior, and population density) make observation extremely difficult and very inconsistent in western Washington. Considering these factors, WDFW has chosen not to conduct harvest-independent population surveys in western Washington. |
| Suggest gobbling routes, similar to pheasant crowing counts, be done prior to hunting season as a way to assist in determining population levels. | Driving route surveys were chosen as the preferred method to collect harvest-independent population index information in eastern Washington. This was based on a comparison of ease of implementation (e.g., cost, use of volunteers, less dependency on ideal weather, etc), consistency in observation (i.e., having different people conducting gobbling counts is a much bigger problem than in counting birds during the winter), and smaller day-to-day variability in observability.<br><br>Implementing a gobbling count in western WA would be extremely difficult. A combination of low turkey population density, high habitat density (sound does not carry like it does in eastern WA), and poor listening conditions due to weather and human disturbance), the surveys would not likely provide valuable information. |
| Does the Department have a plan to regularly test the various populations of turkeys? | Changes were made to the disease testing strategy to include testing populations. |
| Has the Department considered the possibility of introduced turkeys spreading disease to and among native birds, especially threatened and endangered species such as sage grouse and sharp-tailed grouse? | The Department is aware of avian diseases that affect turkeys and other birds. The Department has a history of testing turkeys for disease and has included disease testing as a management strategy in the plan. |
| How much would it cost to determine the total population of introduced turkeys? | A specific cost analysis has not been conducted. Considering the turkey natural history and habitat use as well as the limitations of turkey population surveys, The Department's ability to determine the total population of turkeys with a high degree of accuracy is low. |
| HUNTING AND PERMITTING COMMENTS | |
| Have tags for each sub-species | Current regulations allow the harvest of each sub-species. To specifically identify each tag to a sub-species would limit recreational opportunity as hunters would have to choose which sub-species they would like to hunt. |
| Do not charge for the turkey tag, but instead, create a Washington State Turkey Enhancement Stamp with proceeds going to turkey management. The stamp could also be collectable. | The Washington State Legislature and the Governor have the authority to make this decision. A proposal to separate the first turkey tag from the small game license was sent to the 2005 legislature in January 2005. Action was not taken during the 2005 session, however, the 2006 legislature will have the option to separate the tag or not and will have the option to dedicate funding from the sale of the tag. |
| Charge a fee for the first turkey tag. Use the money collected for turkey management much like the state duck stamp money is used for ducks. | This decision is not within the Department's authority. A proposal to separate the first turkey tag from the small game license was sent to the 2005 legislature in January 2005. Action was not taken during the 2005 session, however, the 2006 legislature will have the option to separate the tag or not and will have the option to dedicate funding from the sale of the tag. |
| The first turkey tag should not be separated from the small game license. | A proposal to separate the first turkey tag from the small game license was sent to the 2005 legislature in January 2005. Action was not taken during the 2005 session, however, the 2006 legislature will have the option to separate the tag or not. |

| PUBLIC COMMENT | WDFW RESPONSE |
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| Investigate the pros and cons of issuing a turkey tag with the purchase of a hunting license. You need to outline specific plans to implement changes if the investigation warrants them. | A proposal to separate the first turkey tag from the small game license was sent to the 2005 legislature in January 2005. Action was not taken during the 2005 session, however, the 2006 legislature will have the option to separate the tag or not. If passed in its original form, revenue generated would go to the State Wildlife Fund to support fish and wildlife related activities. There are existing amendments proposed that would dedicate some of the funds to upland game bird management activities. |
| Spring seasons should be lengthened by one week on the front end. | Thank you for your comment. Your comments will be considered during the hunting season setting process that will take place during 2005, culminating at the Commission meeting in April 2006. |
| Bag limits should be 3 toms per year in eastern Washington and one tom in western Washington. | Thank you for your comment. Your comments will be considered during the hunting season setting process that will take place during 2005, culminating at the Commission meeting in April 2006. As additional information, the 2004 tag sales do not show a large desire for additional tags (approximately 28,500 first tags sold, 3,000 second tags sold, and 130 third tags sold). |
| Do not use a permit system for fall hunting in northeastern Washington. It has not helped control the population. | WDFW has progressively increased the fall harvest in northeastern Washington over the past 4 years. In 2004, the Commission adopted a general open fall season for that area with the goal of controlling the population. In 2005, an additional week has been added to the fall general season as part of the ongoing effort. |
| You have misstated the availability of a fall season in Stevens County in 1989. I think the fall season only became available in 2000. | Thank you for the comment. A change has been made to correct the error. |
| Bring back the one gobbler per day rule. Being able to harvest more than one bird leads to flock shooting and other unethical behavior. | This regulation provides additional recreational opportunity without affecting overall turkey populations. Inquiries into this matter did not reveal any reported problems with flock shooting or other unethical behavior and in fact received significant support for the 2 birds per day rule. If desired, you can provide your comments during the hunting season setting process. |
| Extend the spring season through the end of May (at a minimum) and open the youth season statewide for an entire week with a week break before the general season starts. | Thank you for your comment. Your comments will be considered during the hunting season setting process that will take place during 2005, culminating at the Commission meeting in April 2006. |
| Separate the youth and general season by one week and add a senior/disabled veteran season for one weekend after the general season in areas where flocks can support more hunting. | Thank you for your comment. Your comments will be considered during the hunting season setting process that will take place during 2005, culminating at the Commission meeting in April 2006. |
| Suggest a separate fall turkey tag be required to hunt turkeys in the fall. | Thank you for your comment. Your comments will be considered during the hunting season setting process that will take place during 2005, culminating at the Commission meeting in April 2006. |
| RESEARCH COMMENTS | |
| Allow NWTF biologists to be a part of studies funded by the NWTF. | Research projects that are funded through the National Wild Turkey Federation must go through a scientific review by both WDFW and NWTF biologists prior to funding and implementation. In addition, projects not funded by the NWTF, but still have NWTF involvement (e.g., volunteers), have NWTF biologist involvement (e.g., wintertime surveys in eastern Washington). |
| Include information about how turkeys benefit other birds and animals when considering research projects. | Research proposals designed to identify competition provide information about the role of wild turkeys in their environment. This should include potential positive and negative interactions. |

| PUBLIC COMMENT | WDFW RESPONSE |
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| Does the Department believe that organizations primarily interested in expanding populations for hunting will provide objective, non-partial research assistance on the impacts of turkeys? | Many research projects conducted by universities and state and federal governments receive financial and volunteer support from non-governmental organizations, including the National Wild Turkey Federation. Without the support of these organizations, many research projects would not be implemented. In addition, the Department has a process in place to review research projects to ensure scientific validity. |
| GENERAL COMMENTS | |
| Include more positive language for hunting and recreational resources. | Thank you for your comment. This document is designed to help the Department manage turkeys and we think there are many positive hunting-related aspects of this management plan. |
| I hate to see the Department spend so much money on such a prolific animal. | In general, the activities outlined in the plan do not require large amount of money and time for the agency. However, the fact that turkeys are so prolific in some areas requires us to implement many activities. When possible, WDFW will cooperate with volunteer groups to accomplish tasks. |
| Public education: expand your pamphlet to emphasize male/female appearance. | Text was added to the Plan to address this point. |
| Expand your comment about illegal hen kill so to differentiate between hunters and poachers (Population Dynamics – Harvest). | The term "illegal hunting" was added in place of "poaching" and some clarifying language was added. This paragraph speaks to the impacts of harvest, both legal and illegal. Since the both add to overall hen turkey mortality, they need to be mentioned together. |
| The plan is well written and full of very useful information. | Thank you for your comment. |
| Mention more about the fact that sub-species have hybridized in some areas. | The original draft did reference hybridization, however, more information has been added. Hybridization is mentioned in Section 2 (sub-species management, PMU P20, and PMU p30) and in Section 3 (population management). |
| Turkeys are living beyond their native range in Washington State – they are not "wild". Why is the term "wild" used to describe an introduced species that is stocked, cultivated, and managed? | The term "wild" in "wild turkey" is a standard way of referencing turkeys that are living in a wild state rather than being raised in captivity. |
| We do not believe it is correct to infer that turkeys have "recovered" in this state. Why does this document infer that turkeys are being recovered in this state? If that is not the intention, then why does this plan not clearly state that turkeys are a nonnative, introduced species. | Language was added to text on page 2 of the plan to remove any inference of recovery. In addition, many references to turkeys being introduced into Washington exist in the plan (e.g., the geographic distribution, habitat requirements, potential impacts, and population management sections). |
| If NEPA is necessary for the reintroduction of a native species, why are neither SEPA or NEPA proposed for ongoing management and enhancement and future introductions of nonnative turkeys? | The Wild Turkey Management Plan is an addendum to the Game Management Plan Environmental Impact Statement completed in 2003. In addition, the Wild Turkey Management Plan has completed a SEPA process of its own (current draft) where two 30-day comment periods were conducted. NEPA is not needed because the turkey plan is not a federal action. |
| Does the Department believe turkeys are invasive? What evidence does the Department have to confirm this belief? | The Department has not identified wild turkeys to be invasive. In addition, wild turkeys have not been identified as an invasive species in any other state in the United States. Please see text added in Section 1 addressing potential impacts. |
| How do turkey populations impact the populations of native grouse? | A new section was added to Section 1 addressing potential impacts. |

| PUBLIC COMMENT | WDFW RESPONSE |
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| How does turkey hunting impact native grouse populations? | Turkey hunting takes place in many states where grouse also occur (and are hunted) and no negative impacts have been documented, even in states that have over 15 times the number of turkey hunters Washington has (e.g., Pennsylvania). |
| Is there a correlation between turkey introductions in Lincoln County and the decline of sage grouse populations? | There is no evidence that turkey introductions affected sage grouse populations. During most times of year, turkeys do not occupy the same habitat as sage grouse and have minimal interaction in areas where habitat types converge. |
| What is the Department's plan and budget estimate to reduce turkey populations if necessary? | Hunting is the primary tool the Department would use to address turkey population management needs. History has shown that liberal either sex hunting can drastically affect turkey populations. This would not require a specific budget expenditure. |
| What assurance can the Department provide that introduced turkeys will not adversely impact sensitive, rare, threatened, and endangered plants, animals, and insects? | Research conducted on turkeys throughout their range has not identified turkeys as a threat to populations of plants or other animals. A section was added to the plan to address potential impacts to other species. |
| Does the Department have plans to ensure minimal or no lead shot is used in turkey hunts on both Department and non-Department land? | There are no current plans to limit the use of lead shot to hunt turkeys in Washington. In 2001, the Washington Fish and Wildlife Commission decided to designate specific problem areas as nontoxic shot zones and since that time, has adopted additional sites as they have been identified. The Department has completed a white paper evaluating the use of non-toxic shot for hunting in Washington. |