Ninepipe Wildlife Management Area Management Plan

Montana Fish, Wildlife & Parks

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EXECUTIVE SUMMARY

Ninepipe Wildlife Management Area (WMA), held in fee title by the state of Montana, is in the Mission Valley of western Montana within the boundaries of the Flathead Indian Reservation. The immediate surrounding landscape was likely native prairie pothole created in a dry valley after glaciations. However, today native grasslands have been converted to mostly agriculture and a significant irrigation system has been developed across the valley. Agriculture with recent expansion of recreational development characterizes the Mission Valley and surrounding lands today.

The WMA was established in 1953 as a Federal Aid for Wildlife Restoration project, dedicated to conservation and enhancement of habitat for waterfowl and pheasants and to provide access for public hunting. Now 4,200 acres in size, it has grown over time through 39 separate acquisitions. It is an integral part of a more than 11,000 acre complex of wildlife habitat owned and managed by state, federal, and tribal governments.

Conservation of existing pothole wetlands and management actions to restore drained wetlands, expand natural wetlands, and create new wetlands has led to a complex of nearly 1,500 wetland basins and associated wetland habitat spread across the WMA. For many of these wetlands, irrigation inflows supplement runoff from local precipitation, providing additional wetland management opportunities. Wetland management and upland irrigation are intricately connected. Overland irrigation flows increases habitat diversity, making irrigated uplands more resistant to invasion by noxious weeds while also improving cover for nesting birds and brood habitat for pheasants.

Farming is used across the WMA to grow food for pheasants and waterfowl, and to provide vigorous stands of perennial herbaceous vegetation for nesting of many bird species and for year-round use by pheasants. Farm fields of various sizes are well distributed across the WMA and are rotated through time to protect and improve soils and to provide a diversity of vigorous vegetation. The value of food and nesting habitat for birds on Ninepipe WMA has increased as local producers have switched gradually from mixed agriculture to growing primarily forage for livestock, which has resulted in diminished cover and food resources on surrounding private lands.

The WMA supports possibly the highest level of hunter use for game birds of any WMA in western Montana. It is hunted essentially every day of the waterfowl and pheasant seasons, sometimes very heavily. A 1990 agreement between the state of Montana and the Confederated Salish and Kootenai Tribes limits hunting by non-tribal members to only waterfowl, pheasants, and Hungarian partridge within the Flathead Indian Reservation. Although bird hunters are

primary recreational users, the open space, spectacular views, and high wildlife diversity of the WMA are also enjoyed year-round by bird watchers and many others.

This Management Plan calls for Fish, Wildlife & Parks (FWP) to continue to provide food and nesting habitat for waterfowl and upland game birds as well as maintain winter cover for upland game birds. This will contribute to high levels of bird productivity and recreational opportunities for bird hunters as well as a wider spectrum of users. These management actions also take into consideration FWP's State Wildlife Action Plan (FWP SWAP) and are likely to help maintain habitat for nongame species, including species of concern, for an increasing segment of recreational wildlife watchers. FWP will continue its annual nongame monitoring program to provide information to WMA staff regarding the influence of management practices on shorebird and short-eared owl (species of greatest inventory need, FWP SWAP) productivity.

FWP will continue to employ an integrated noxious weed management program, which involves chemical, mechanical, cultural, and manual methods, on the WMA to address a wide array of weed species. Managing weeds on an environmentally sensitive site with relatively unrestricted public access and where side effects of weed treatments can have detrimental effects on wildlife habitat productivity presents substantial challenges.

OVERVIEW

Ninepipe WMA was acquired and developed by FWP to protect and enhance wildlife habitat and to address a prior lack of public access for waterfowl and pheasant hunting. The unique geologic landscape, favorable climate, and fertile soils have allowed for a mix of grassland, cropland and wetlands that is ideal habitat for waterfowl, pheasants, and other wildlife. Supplemental irrigation ensures annual wetland habitat availability and productive herbaceous vegetation. The WMA's size and proximity to the Ninepipe National Wildlife Refuge (NWR), several Waterfowl Production Areas (WPA), and Tribal Wildlife Mitigation Sites (Fig. 1) bolsters its value for wildlife and creates substantial opportunities for hunters to pursue pheasants, ducks, and geese.

This management plan provides a layout of goals, priorities, issues, and strategies for managing Ninepipe WMA. The plan describes FWP's overall management direction as well as anticipated near term and long term management actions, both for communication to interested publics and for guiding FWP staff.

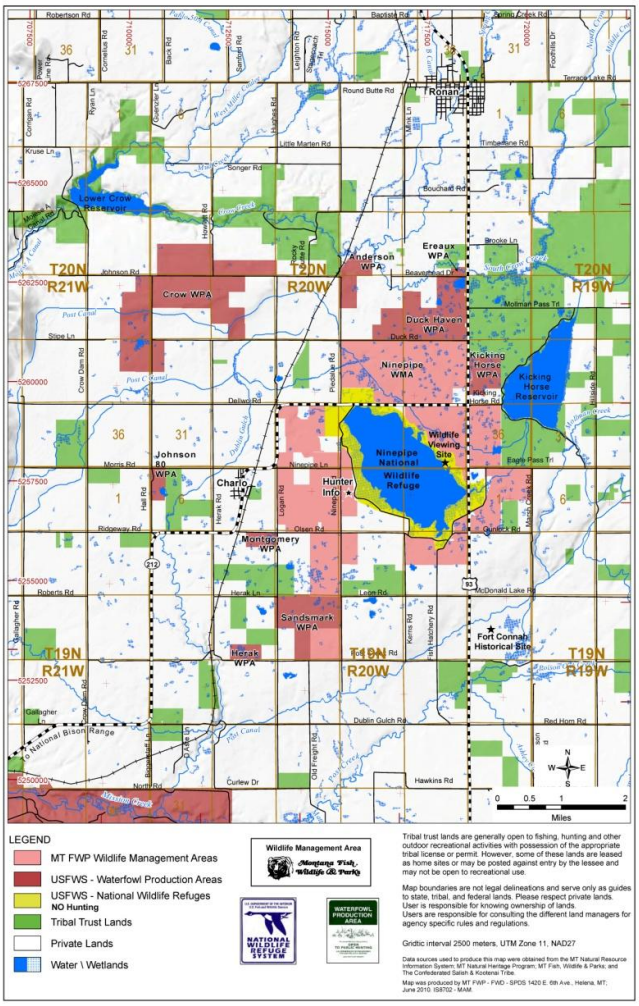


Figure 1. Map of other agency owned land in close proximity to Ninepipe WMA.

STATEWIDE GOAL FOR WMAs

Montana's Wildlife Management Areas are managed to provide effective wildlife habitat and compatible recreational opportunities.

NINEPIPE WMA GOAL

Ninepipe WMA is managed to conserve and enhance habitats that emphasize pheasants and waterfowl, while also benefiting a variety of non-game wildlife, and to promote public hunting and other compatible wildlife-related recreational opportunities.

To help achieve this multifaceted goal, FWP has written the Ninepipe WMA Management Plan. This document will provide guidance for our wildlife biologists, WMA Manager, and Regional Wildlife Manager on how the WMA will be managed and will serve as a reference for establishing annual work plans for the WMA.

DESCRIPTION

The setting of the 4,200 acre Ninepipe WMA in the Mission Valley of western Montana, with the snow-capped Mission Mountains as a backdrop, is on the Flathead Indian Reservation. The Ninepipe name is that of an indigenous family that was displaced when an irrigation reservoir was constructed in the early 1900s. Ninepipe Reservoir is entirely within the Ninepipe NWR. The NWR is, in turn, almost completely surrounded by the Ninepipe WMA (Fig. 1).

In addition to the WMA and NWR, other lands in the vicinity are also managed specifically as wildlife habitat, which are administered by federal and tribal governments. The land in this intermountain glacial valley has been severely impacted by human activities. Agricultural practices like plowing and flood irrigating have essentially eliminated the natural upland vegetation and natural water runoff patterns. These changes have been detrimental to some native species, but have been generally beneficial to waterfowl populations and have allowed for the introduced pheasant to thrive.

At approximately 3,000 feet above sea level, the WMA consists of rolling, open grasslands and numerous prairie potholes, or kettle ponds. Remnants of native rough fescue grasslands exist, but today the area vegetation is mostly introduced grasses, croplands, and exotic woody plants. Many of the upland plants now growing here are naturalized species that were accidentally or intentionally introduced. Many state-listed noxious weeds and other exotic invasive plants occur on the WMA and surrounding lands.

Primary canals and laterals, which deliver water to a significant portion of the Charlo area, traverse the WMA on linear easements that pre-date ownership of any land by FWP. Almost all water that leaves or enters the Ninepipe Reservoir crosses the WMA. Additionally, water released from Kicking Horse Reservoir flows to and/or through WMA land.

US Highway 93 and Montana Secondary Highway 212 both cross through the WMA, as do numerous secondary county roads. Almost every section line on the WMA is roaded, with pull-outs and parking lots providing easy access for the public. The only FWP road that is seasonally open to the public provides vehicle access to a multi-agency wildlife viewing/interpretive site, family fishing pond, and angler access to Ninepipe Reservoir. This road is closed to vehicles during the hunting season.

Based on cover types, parcel boundaries, and access, FWP has identified 29 individual management tracts that have then been grouped in 6 larger logical management units for specific planning and communicating purposes (Fig 2.).

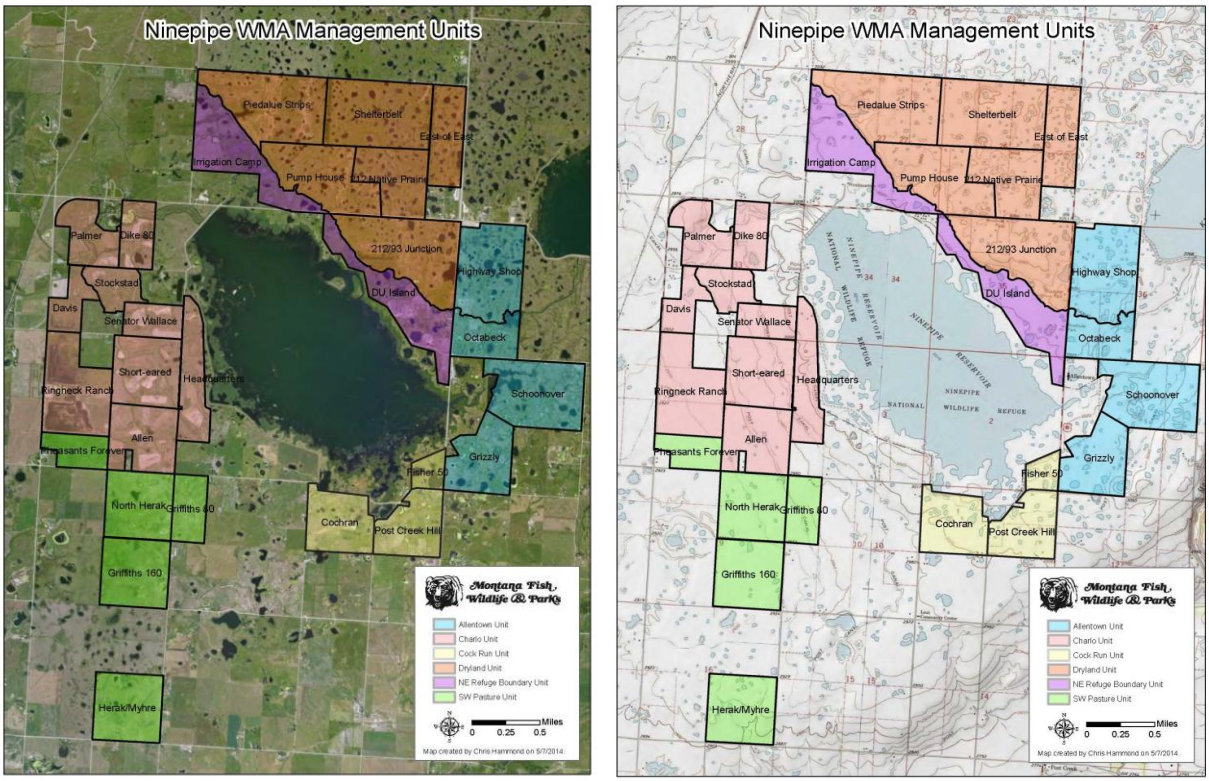


Figure 2. Aerial & Topographic Maps of Ninepipe WMA Management Units and Management Tracts.

OVERALL DIRECTION OF NINEPIPE WMA AND MANAGEMENT UNITS

The primary management direction of Ninepipe WMA continues to emphasize conserving and enhancing habitat for waterfowl and pheasants and providing harvest opportunities for hunters. These management practices also help maintain habitat for other native nongame and species of concern and provide recreational opportunities for outdoor enthusiasts.

Improving management activities, increasing efficiencies, adapting management practices to modern technologies, and identifying threats are vital to effectively managing the WMA. Lands that have been part of the WMA since its early days still have some issues relative to accessibility and clean-up. The more recently acquired lands; specifically all the tracts within the SW Pasture Unit and some within the Charlo Unit (Fig. 2) have considerably more need for improvement to transform them from production agriculture into wildlife habitat. Infrastructure improvement, particularly as relates to administrative access and water conservation within flood irrigated ground, is a management emphasis that will result in efficiencies for habitat development and improvement.

Human activities have altered the surrounding landscape through changes in agricultural practices and residential development. Wildlife populations have changed in number and distribution, as have public expectations. When the WMA was established, the management direction was toward complimenting the surroundings, which tended to be diverse and productive wildlife habitats. Management of the WMA now emphasizes essential habitat components that no longer exist to the extent or quality that they once did in the valley. The main habitat elements are abundant food resources, a diversity of good quality perennial herbaceous cover, and productive wetlands. Distributing each habitat component across the WMA, and particularly near where they may be lacking on adjacent lands, is more important than ever.

Management focus has shifted from catering mainly to waterfowl with pheasants the beneficiary of waterfowl habitat to pheasant habitat being a primary focus. Diminished habitat suited for pheasants and pheasant hunting in western Montana and a steady or growing interest in pheasant hunting has driven this subtle shift in emphasis. In general what is good for many species of waterfowl is also good for pheasants; however, waterfowl populations are far more mobile and less dependent on local conditions than pheasant populations. On a year-round basis, pheasants require dependable food resources with diverse stands of perennial upland vegetation.

Over time, controlling noxious weeds has become more of an emphasis to address concerns raised by the local agricultural community. Current management emphasis employs good land stewardship practices that keep desirable vegetation in a vigorous condition that is resistant to weed invasion while continuing to control new and existing infestations.

HABITAT EFFECTIVENESS

The five general cover types on Ninepipe WMA are wetland, managed grassland, cropland, native prairie, and woody cover (Fig. 3). The size and location of wetland, native prairie, and woody cover types are essentially constant, while managed grassland and cropland cover types, which occupy the remaining space, are converted over time from one to the other. Individually and in association with each other all cover types meet habitat needs of many wildlife species. While condition and effectiveness of habitat can be strongly influenced by weather and other environmental factors, each cover type can be manipulated through active management. Basic management practices are described for each cover type below. Specific details of scheduled management activities are outlined in a later section.

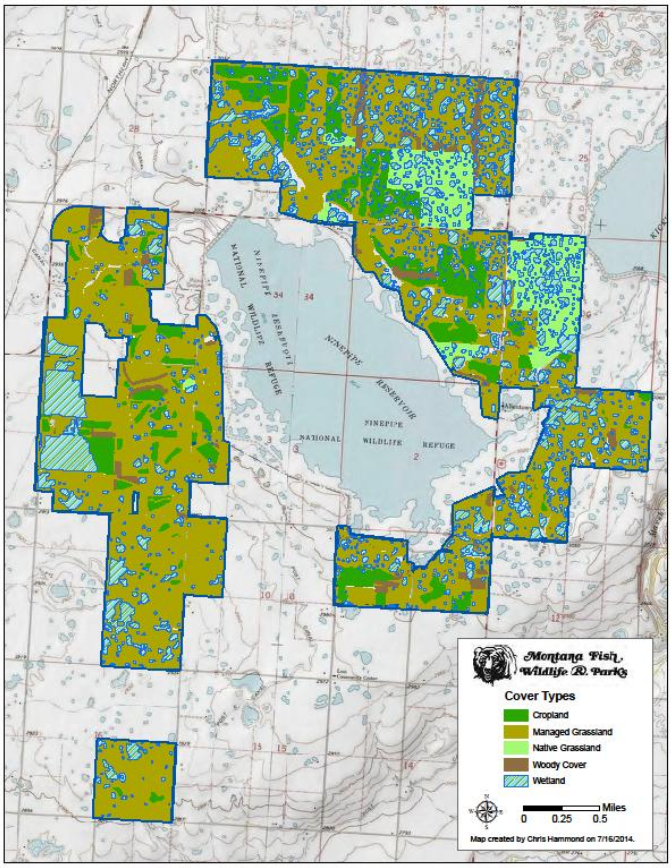


Figure 3. Map of the five general cover types located on Ninepipe WMA. GIS mapping data provided by Pheasants Forever.

Wetlands

Wetlands make up about 17% of the habitat of Ninepipe WMA. The prairie pothole wetlands of the Ninepipe area are a prominent and probably the most important feature of the Mission Valley landscape. Nearly 1,500 wetland basins have been mapped on Ninepipe WMA alone (Fig. 4)

which equates to an average of about 1 wetland basin per 3 acres. The management goal for wetlands is to conserve, enhance, and manage wetland habitat to provide well-distributed, diverse, and productive, seasonal and year-round habitat for wetland-dependent wildlife. The natural glacial potholes, which are recharged entirely via precipitation and overland runoff, and wetlands supplemented with irrigation flows are managed to protect and enhance ecological functions of these dynamic ecosystems.

When managing wetlands, FWP considers wildlife-related recreation opportunities that range from hunting to bird watching. Hunting opportunities for waterfowl are enhanced by the preponderance of open water located throughout the WMA which produce local birds and attract migrating birds as well.

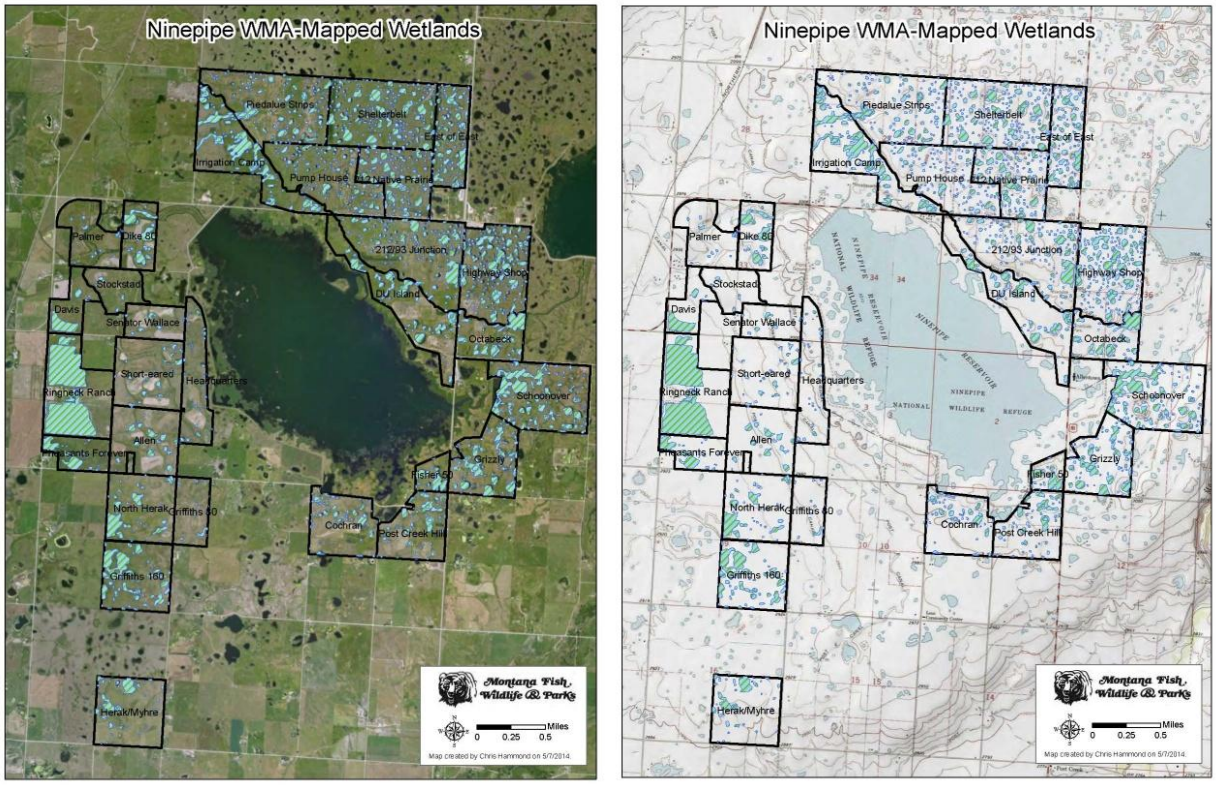


Figure 4. Aerial & Topographic Maps of Mapped Wetlands on Ninepipe WMA.

<u>Wetland Habitat Values</u>

Along with the intrinsic values of water itself, wetlands provide food and cover for many wildlife species. They provide habitat for waterfowl courtship, brood rearing, molting, and resting. They accommodate large numbers of waterfowl, as well as shorebirds and other wetland dependent birds, for breeding and for resting and refueling during seasonal migrations.

Aquatic vegetation and a vast array of invertebrates that thrive in and around wetlands are important food resources for many birds. Shallow edges and mudflats associated with the drying and filling of wetlands are extremely productive for invertebrates, an important food source for

many species of game and non-game birds. Floating and submerged plants are important foods, and are crucial substrates for aquatic invertebrates to thrive. Seeds and leaves of moist soil vegetation, especially those reliant upon mudflats for germination are heavily utilized as a food resource both while they are above the waterline and when they are flooded.

Shallow temporary wetlands provide effective pair mating habitats. The visual separation and interspersion of wetlands on the WMA provide isolation from other conspecific breeding pairs and warm quickly in the spring for abundant invertebrate production, important for egg producing hens.

Emergent plants, such as cattails and bulrushes are important shelter for pheasants and nesting habitat for some diving duck species and other birds. Pheasant populations are dependent upon emergent wetland vegetation for shelter during harsh winter weather and for security during all seasons, including during the hunting season. Expansive stands of emergents are important winter habitat for pheasants and linear fringes along water edges serve as cover and travel corridors. Flooded stands of emergent vegetation with interspersed open water are effective cover for over-water nesting species and for waterfowl brood-rearing habitat.

Wetland Habitat Management Objectives

Wetlands are managed to provide aquatic vegetation and open water sites that are well distributed on the WMA. Numerous wetland basins on the WMA are perched wetlands, having no connection to ground water, and have no capacity for water level manipulation, but are totally dependent on natural recharge. Management options on these wetlands are limited to controlling invasive plants in the basins and managing surrounding upland vegetation. Management and productivity of these wetlands is dictated by seasonal weather patterns.

Ninepipe WMA has several other wetlands that can be managed with irrigation. Irrigation flows supplement natural water levels in several hundred basins during Flathead Indian Irrigation Project operation which is normally from mid-May to mid-September. The ability to manage water flow and water levels in wetlands provides an opportunity to optimize the WMA for a host of wildlife habitat benefits ensuring that habitat for wetland dependent wildlife can be available annually in various stages, even during extended periods of drought. Twenty wetlands have variable-level water control structures that can be used to drain basins or limit their maximum surface level. The others are controlled exclusively through input flows. Periodic drying allows oxygen infiltration, organic matter decomposition, and nutrient cycling, which promotes diverse and productive vegetation and an abundance of invertebrates.

Wetland Management Actions

- Supplement water levels with flows from irrigation ditches annually. Use care such that recharge does not flood nests or that rapid recharge does not detrimentally impacts invertebrate populations. (High priority)

- Periodically schedule draw downs (or dry out periods) of wetlands for one year or more duration, rotated through all managed wetlands, subject to weather conditions. Over time this will be adapted based on vegetation response. (High priority)
- Manipulate water levels in wetlands, where and when possible, while the irrigation project is not operational during brief periods of heavy natural runoff in winter and early spring via the interior irrigation system. (Low to Medium priority)
- Map irrigation canals, headgates, and flow patterns. (Medium to High priority)
- Use mechanical and chemical disturbance where necessary to limit invasion by exotic perennial vegetation and promote mudflats and early-successional native plants. (Medium priority)
- Conduct additional topographic surveys to identify potential sites to restore, enhance, and create wetlands. (Medium priority)
- Develop new wetland habitat. Secure funding to develop additional wetlands that have been surveyed and engineered. (Medium Priority)

Managed Grassland

Managed grasslands make up about 56% of the habitat of Ninepipe WMA. Perennial tame grasses, forbs, and invasive exotic plants are the main components of managed grassland, the predominant cover type on the WMA. Managed grassland serves several habitat functions, but they are commonly referred to as nesting cover, their primary habitat function. Our management actions are intended to provide for long lasting stands of these managed grasslands.

Although it comprises greater than 50% of the total area, regular active management (except weed spraying) occurs on only a small proportion (5%) of the total. Diversity within and between managed grassland sites is due to natural variability in soil type, moisture, and microclimate. Past and current management practices, initial stand composition, stand age, recent weather patterns, rodent and insect levels, and degree of invasion by other plants are factors that affect the quality of habitat that managed grasslands provide. A variety of practices are used for managing nesting cover, each with benefits and associated risks and costs. The degree of management activities varies considerably from intensive to virtually untouched. Clipping, spraying, irrigating, burning, inter-seeding, and harrowing can have positive results if properly employed at the appropriate time. Practices that prolong stand life and maintain vigor are employed. Targeted spot treatment by WMA staff is an effective use of time and reduces risks of negative impacts. Habitat improvement practices, using local private resources, that potentially pay for themselves or generate revenue, like grazing or haying, increase program efficiency.

Managing noxious weeds in nesting cover is a continual challenge because of the dynamic nature of weed ecology and the unintended detrimental consequences to habitat and wildlife. The weeds themselves may actually serve as effective nesting cover, but by law noxious weeds must be controlled. Unfortunately, the time that treatment is most efficacious coincides with the time that birds are nesting, and weed control practices can be detrimental to nest success, either by causing abandonment by hens or destruction of the nest itself.

Application of chemical herbicides is the least impactful wide-scale method for managing weeds in nesting cover, but has the undesirable side effect of killing non-target broadleaf plants that are an important component of high quality nesting cover. The value of the cover as pheasant brood-rearing is also greatly diminished when the broadleaf plants are removed. Establishing relatively weed-free nesting cover and judiciously maintaining it in a vigorous condition is the best way to get the greatest habitat value from these stands. Periodic removal of the annual growth to prevent accumulation of excess plant litter is generally the preferred alternative. Additional alternatives include grazing with livestock, prescribed burning, and harvesting hay are practices that will extend stand life, and each has its pros and cons.

Managed grazing has not been employed on the WMA due to the juxtaposition of the wetlands, irrigation ditches, standing grain fields, and woody cover that are interspersed over much of the managed grasslands. Utilizing grazing on a prescriptive basis may be an option improving condition of nesting cover by removing excess vegetation on WMA lands encumbered with grassland easements and possibly to manage the native grasslands where other treatments to reinvigorate existing vegetation are impractical.

Prescribed burning is occasionally used, but the necessary specialized equipment and adequate size crew of trained personnel constrains a wide-spread application. Prescribed fire invigorates vegetation by removing thatch and releasing nutrients for regrowth, but may alter stand composition, sometimes unfavorably. A narrow window of time when burning is permitted and is also compatible with nesting birds in spring and hunting in fall further limit its practicality on a large scale. Liability issues from a fire that escapes containment lines also make burning a potentially risky practice.

Harvesting hay at Ninepipe to improve grassland habitat has been employed since the WMA was established. Aside from accomplishing the objective of maintaining the nesting cover in a vigorous and productive condition, thus reducing WMA management expenses, the hay value can be used for other habitat management objectives to be performed by the lease farmer, such as food plot maintenance or weed management. Additionally, vast stands of dense standing or matted vegetation are detrimental to pheasant productivity particularly during the breeding season when visibility is necessary for roosters to attract hens and during brood-rearing periods when chicks are limited in their mobility and require access to open ground to feed and dry off. The food value of new growth and the flush of invertebrates after haying and irrigating grasslands attract and support a wide array of game and non-game wildlife.

Harvesting hay has economic value to the local community and other societal benefits. Removing fields of tall grass via haying has other public safety benefits. Fine fuels of standing dead grass are extremely volatile. Openings of cut grass in summer help prevent fires from starting and are crucial, if a fire starts, to slow or stop a wildfire. Hay fields adjacent to neighboring residences and along busy roads reduce hunting pressure in those areas, thereby minimizing conflicts between pheasant hunters and our neighbors and travelers, respectively.

Cutting hay does, like other management practices, have drawbacks. Nests can be destroyed and animals killed by haying equipment. Delaying the time when haying is permitted until after July 15, when the peak hatch time is past, minimizes the risk to nesting birds. However, cutting hay too late can place the harvest during peak fire season, and may also limit follow-up management options, such as irrigation, and would reduce the time allowed for regrowth that provides hiding cover in the fall, soil protection in the winter, and residual nesting cover the following spring.

Managed Grassland Habitat Values

Nesting cover varies in composition, plant heights, stem densities, and stand variability which satisfies the different nest site preference of various species, and the quality of year-round habitat needs of pheasants. These stands are very dynamic and can serve habitat needs of many species within and between years. Early to mid seral stages of grass growth are the most beneficial for nesting and brood rearing pheasants.

Many duck species, pheasants, Hungarian partridge, and a variety of non-game birds use these grasslands for nesting. Besides nesting, pheasants depend upon this cover type for year-long survival needs including escape, night roosting, feeding, thermal cover, resting, hiding, breeding, and brood rearing activities. Many birds such as Canada geese, some ducks, and many non-game birds feed heavily in harvested hay fields in spring, summer, and fall, particularly while and after they are flooded by irrigation. Short-eared Owls and Northern Harriers nest and roost in managed grassland and their populations are strongly influenced by voles and other rodents that thrive in grassland habitat.

Managed Grassland Habitat Management Objectives

The goal for managed grassland is to establish and maintain mixed stands of perennial herbaceous vegetation throughout the WMA that are seasonally beneficial to a wide variety of species, particularly pheasants and waterfowl. A mix of species is desired, including stiff-stemmed grasses to hold up in wind, rain, and snow, sod-forming grasses to resist weed invasion, and legumes to provide overhead cover, nitrogen fixing capability, and invertebrate food resources. Stands in various stages of development and decline have different habitat values. Stands will be maintained to serve multiple life-history needs of multiple wildlife species. Some short-term sacrifice is necessary for longer-term benefits.

Managed Grassland Management Actions

- Evaluate grass cover composition and structure to identify areas for habitat improvement through management actions of establishment, renovation, and maintenance.
- Maintain noxious weed-free or weed-resistant nesting cover stands that are vigorous and productive and that provide a diversity of composition and structural conditions throughout the WMA.
- Use all compatible tools available to optimize success, minimizing potential detrimental impacts to habitat and wildlife productivity.
- Target field renovations to leave parts of the stand that remain in a healthy and vigorous condition.
- Leave some stands which may appear to not be in optimum condition because they provide unique habitat values and the costs to replace them may outweigh the benefits they provide in their existing condition.
- Manage upland interface with wetlands to provide short, lush vegetation and moist soils as feeding sites for waterfowl, shorebirds, and other birds associated with shallow wetlands.
- Collaborate with surrounding land management agencies when prescribed burning has been identified as the preferred method of management.
- Explore cooperative opportunities for grassland management.

Establishment/ Renovation

Long-term cropland/nesting cover rotations are beneficial to sustain habitat productivity into the future. Complete renovation of nesting cover can be a costly and time-consuming endeavor and is required at some point in time (preferably within 10 to 20 years) to maintain long-term productivity. Potential negative impacts to the environment, especially weed encroachment, soil damage, and detriment to wildlife populations must be considered in planning each treatment. Negative impacts to wildlife would be short-term as renovations will provide for longer-term benefits.

- Prioritize renovations of nesting cover based on field evaluations.
- Renovate monotypic, weedy, and decadent stands to enhance bird productivity potential.
- Grow grain crops for a few years to clean up sites for future nesting cover establishment.
- Plant mixtures of grasses and legumes in fields that are well-prepared, relatively free of weeds and rocks.

Maintenance
Managed grasslands require some kind of enhancing treatment to keep them vigorous and productive (preferably every 1-5 years). Time between needed management actions due to stand deterioration is affected by weather patterns, vole populations, degree of weed infestation, and desired habitat function. Targeting field renovations to leave parts of the stand that remain in healthy, vigorous condition increases efficiency. Also leaving some stands that may appear to not be in optimum condition may be desirable because they may still provide beneficial habitat values, and costs to replace them may outweigh the benefits they provide in their existing condition.

- Routinely establish new fields of nesting cover within the WMA to provide young age stands that have a strong component of desired grasses and forbs which increase their value as pheasant brood habitat and nesting habitat.
- Reduce noxious weed populations in stands requiring renovation through the judicious application of selective broad-leaf herbicides, which will leave grasses to suppress reinvasion by noxious weeds via competition until the site can be replanted to a more desirable plant composition.
- Cut young stands containing alfalfa periodically (no earlier than 15 July, no more than once per year) to retain that broadleaf component which quickly disappears from the stand when it becomes rank.
- Hay decadent grasses periodically (no earlier than 15 July) to improve vigor, productivity, and stand longevity, and to reduce the potential for invasion by noxious weeds.
- Irrigate established stands of drought-intolerant grasses after haying to dramatically extend the stand life, discourage weed growth, promote rapid regrowth of lush grass sprouts for geese and other grazers, and to provide residual cover for early-nesting species.
- Where hay has been cut, harrowing or light disking can be done to reestablish desirable forbs into grass stands.
- When haying, implement wildlife friendly practices such as reducing tractor speed and the use of a flushing bar.

Croplands

Croplands make up about 13% of the habitat of Ninepipe WMA. Growing annual crops on the WMA results in higher game bird populations, better hunting opportunities, and less wildlife impact to crops on local private lands. Cereal grain crops provide food for waterfowl and

pheasants, thus greatly enhancing the year-long carrying capacity of the area. Growing additional food resources that are scattered across the WMA ensures adequate food for resident pheasants and both resident and migratory waterfowl. It also helps to disperse birds around the WMA and helps improve hunting opportunities. Numerous types of crops have been grown on the WMA with varying success. Winter wheat, which can produce high yields in dry land situations, is particularly well-suited to the WMA because it is sown in fall when soil moisture conditions are usually more favorable for farming and it functions as nesting cover. Spring grains also produce nutritious food for birds in fall and winter, but do not provide adequate nesting cover.

Crops are grown on the WMA to enhance wildlife production, rather than for the purposes of agriculture production and business. Instead of harvesting crops, they are left to provide food for waterfowl and pheasants during fall, winter, and into spring. This requires farming practices that are unconventional and in some ways more challenging than conventional farming because in production agriculture the annual crop production is removed as soon as possible. With wildlife production as the goal, the annual production is left as long as possible. Leaving crops standing as fall, winter, and early spring food for wildlife makes getting fields ready for a succeeding spring-sown crop more challenging. This is yet another reason winter wheat is grown as the standard crop in food plots on the WMA.

Intensively managed crop fields help prepare land for subsequent seeding of perennial herbaceous cover for habitat needs other than food. Soil health and productivity can be improved with diverse mixtures of annual and short-lived plants (cover crop) to protect the surface from exposure to wind and water, to compete with weeds, to add organic matter, and to break up subsurface compaction. Adding more plant diversity to the WMA also adds more habitat options for wildlife.

Cropland Habitat Values

Cereal grains, which are well suited to local growing conditions, are a preferred food for many species and are a major factor in robust pheasant and waterfowl populations on the WMA. Fallow associated with field preparation provides accessible dietary minerals and sites for dusting. Seeds, sprouts, and invertebrates are an accessible food source for chicks and adults. Fallow fields are also important for chicks to dry and warm and for pairing and breeding activities of adults. Intensively managed crop fields can also be a step in seed-bed preparation for subsequent seeding of perennial herbaceous cover for habitat needs in addition to providing food for wildlife.

Flood irrigation is the only manner to irrigate on the WMA, but is limited because the high risk of soil erosion and the time commitment required. Irrigating small plots of highly desirable crops in appropriate locations can enhance habitat diversity and provide special conditions at critical times such as when pheasant chicks are dependent upon accessible invertebrate food resources to fulfill their dietary protein requirements.

Cropland Habitat Management Objectives

Croplands can be dedicated long-term food plots, a step in grassland renovation process, or weed control effort. Growing diverse and reliable food crops will likely provide some wildlife food regardless of variability of weather conditions. Growing plants or mixtures that provide cover and food production and that last for multiple seasons such as Lathco flat peas, small burnett, sweet clover/spring grain, or cover crop mixtures of annuals, biennials, and perennials increases habitat diversity and reduces management costs. When proper conditions exist, some crop fields produce unplanned growth of volunteer grain crops or a flush of desirable legumes, thereby providing productive habitat with no input cost.

Well-prepared seedbeds are important to reduce the chances for crop failure. Weather conditions, soil conditions, and excessive weed competition are uncontrollable environmental factors that impact annual fieldwork schedules, which in conjunction with practical matters, such as fiscal, mechanical, and conflicting priorities, mandate flexibility in what will be grown where in any particular year. Regardless, having food plots throughout the WMA every year is a top management priority. No fertilizers, fungicides, or insecticides are used by FWP and most plantings are made with untreated seed to minimize potential detrimental environmental effects.

Conserving and enhancing soil productivity is required in cropland management. Alternatives to mechanical fallow, including chemical fallow, cover crops, smother crops, and companion crops are employed when possible and desirable. Soil organic matter is increased through the use of companion crops and green manures, and by limiting burning of crop residue and deep plowing. Soil health, plant diversity, land productivity, and correspondingly habitat quality are improved through the use of cover crops. Growing perennial cover for a few years improves soil productivity for future crop production.

Winter wheat is sown in fall when soil moisture conditions are usually more favorable for farming. The window of time that it can be planted is wider than for a spring-seeded crop and soils have some over-winter protection. Because there is already above-ground growth when temperatures increase in spring, winter wheat provides competition towards weed infestations and can provide nesting cover for ducks and pheasants. The green succulent plants are a very important food source for geese in fall and spring. Time available to prepare the seedbed is also extensive in that it includes spring and summer.

Barley, this sown in spring is an excellent source of food for birds in fall and winter, but generally has not grown tall enough to provide much nesting cover. Often, plots where spring crops are to be sown must be fallow during winter to be ready for spring seeding. Sowing a companion crop of biennial sweet clover, where herbicide application is not anticipated, will add nitrogen to the soil and provide one year of dense cover on the plot in the following year.

Cropland Management Action

- Use good farming practices to manage weeds, conserve and enhance soils, and optimize chances for establishing vigorous stands of food and cover.
- Incorporate crop residue into surface soils to build organic matter.
- Plant cover crops to increase habitat diversity and improve soil health. Use practices that reduce wind and water erosion.
- Leave untilled buffer strips around wetlands and draws.
- Reduce soil compaction by minimizing vehicle travel, especially when soils are wet.
- Grow diverse food plots of various sizes well-dispersed on all management units for pheasants and field-feeding waterfowl.
- Grow spring grain where and when *winter-annual* weeds become a problem (e.g. cheat grass).
- Grow mixed crops such as wheat and peas or barley and sweet clover.
- Where farming is inefficient or difficult to accomplish for WMA staff, use sharecropping leases that require some grain to be left unharvested as well as stubble.
- Irrigate selected crops at appropriate sites to improve establishment and increase productivity of vegetation, increase habitat diversity, and to enhance feeding habitat.
- Explore cooperative opportunities for farming.

Native Prairie

The native prairie of Ninepipe WMA is considered part of the Tier One Community Type (FWP SWAP) Montane Grassland and makes up about 6% of the habitat on the WMA. The majority of land in the valley has been converted to various forms of agricultural production; consequently, remnants of native grassland vegetation exist in only a few management units. They are located on sites that are topographically, geologically, or hydrologically unsuited for cropland where irrigation was not developed. The ecological importance of remnant prairie is in part due to the rarity of native upland vegetation on the WMA and surrounding ownerships, and conserving it is a management goal. Native uplands can be used as reference sites for native species restoration, but are susceptible to invasion by noxious weeds and other introduced plants because of the clumped and scattered growth patterns of the native plants and associated bare ground.

Native Prairie Habitat Values

The function of native prairie as habitat for waterfowl and pheasants is not as significant as other cover types on the WMA because of its vegetative structure and small area it covers, although they do provide some seasonal habitat benefits and help serve as a reference for potential restoration activities. While less beneficial to waterfowl and pheasants, native grasslands provide habitat components required by several nongame species and species of concern for survival and reproduction.

Native Prairie Habitat Management

Conserve and enhance the integrity of the native prairie vegetation components of these land parcels. Weed treatment is a management challenge due to the inappropriateness of mechanical treatments and the risks to the native plants with application of herbicides.

Native Prairie Management Actions

- Map native prairie remnants.
- Evaluate vegetation plots.
- Investigate the potential benefits of periodic prescriptive grazing by livestock or prescribed fire to invigorate native prairie vegetation. Employ techniques as appropriate.
- Refrain from cultivating any site supporting native prairie.
- Control infestations of noxious weeds and other invasive exotic plants without jeopardizing the native plants.

Woody Cover

Woody cover makes up about 2% of Ninepipe WMA habitat. Several species of native woody plants grow naturally on the WMA as scattered trees and shrub thickets. Most of the trees and shrubs, however, are non-native species that have been planted by people, some before and some after the WMA was established. Native trees include black and narrowleaf cottonwoods, quaking aspen, and Ponderosa pine; common invasive trees include Russian olive and golden willow. A few fruit trees and ornamental shrubs persist at historic home sites on the WMA.

Native shrubby species are found scattered in patches across the WMA and include Rocky Mountain juniper, Wood's rose, common snowberry, black hawthorn, and chokecherry. Non-native shrubby shelterbelts were planted on the WMA with the intent of improving over-winter survival of pheasants. The most abundant non-native shrubs include caragana, lilac, buffalo berry, Nanking cherry, and others.

Habitat Values

Native and non-native trees provide limited habitat benefits to pheasants, waterfowl and other ground-nesting birds in the Mission Valley. Research has shown that trees provide excellent perches, cover, and nesting habitat for various avian predators such as red-tailed hawks, ravens, black-billed magpies, and great-horned owls. These woody patches also provide cover/travel corridors for mammalian predators such as raccoons, foxes, and occasional grizzly bear. In addition to raptors and other predators, white-tailed deer, songbirds, and non-game wildlife that would otherwise not occur on the native prairie/wetland habitats are now common on the WMA.

The WMA also supports dense stands of both native and non-native low-growing shrubs in thickets and hedgerows. These dense native and non-native shrubs provide food, cover, and shelter for pheasants without the detrimental impacts to other ground-nesting birds. Common native species include black hawthorn, Drummond's willow, Wood's rose, common snowberry, and chokecherry. Common planted species include Russian olive and caragana.

Trees provide limited habitat benefits to pheasants in the Mission Valley and are detrimental to ducks and other ground-nesting birds. Research has shown that trees benefit predators and nest predators more than they benefit game birds in many instances. Deer, raccoons, and grizzly bears use the shelterbelts along with raptors and passerines that otherwise would be less likely to be on the WMA. Low-growing shrubs in thickets and hedgerows provide food, cover, and shelter without the detrimental impacts to ground-nesting b associated with trees.

Woody Cover Habitat Management

Shrub thickets on the WMA provide summer and winter thermal cover and security for wildlife. Invasive exotic trees are detrimental to grassland and wetland habitats.

Woody Cover Management Actions

- Maintain and enhance shrub thickets that are beneficial to pheasant populations, particularly those like Wood's rose and common snowberry that produce fruits that can serve as an emergency winter food. These shrubs do not pose the risk of attracting grizzly bears like choke cherry or American plum.

- Remove water loving trees (golden willow and weeping willow) in these wetland sites to help promote wetland recharge and associated plant growth.

- Remove scattered Russian olive and willow trees from where they have pioneered onto grassland sites.

- Take a passive/hands-off approach in letting the tall shelterbelts persist, but make no attempt to re-invigorate.

- At strategic locations, plant additional hedgerows and shrub thickets of native woody species to provide thermal and security cover for game birds.

MANAGEMENT UNITS

The WMA has been divided geographically into six management units; each has several individually named tracts of land (Fig. 5). Some tracts are the entirety of a single acquisition and others consist of multiple acquisitions or a portion of a land acquisition (Appendix A). As new parcels have been added and old boundary lines removed, adjacent parcels have been blocked together into management tracts. Names of units and tracts, although somewhat arbitrary, have various connections to historic, geographic, or ecological attributes to serve internal communication needs, but need be of no consequence beyond this purpose.

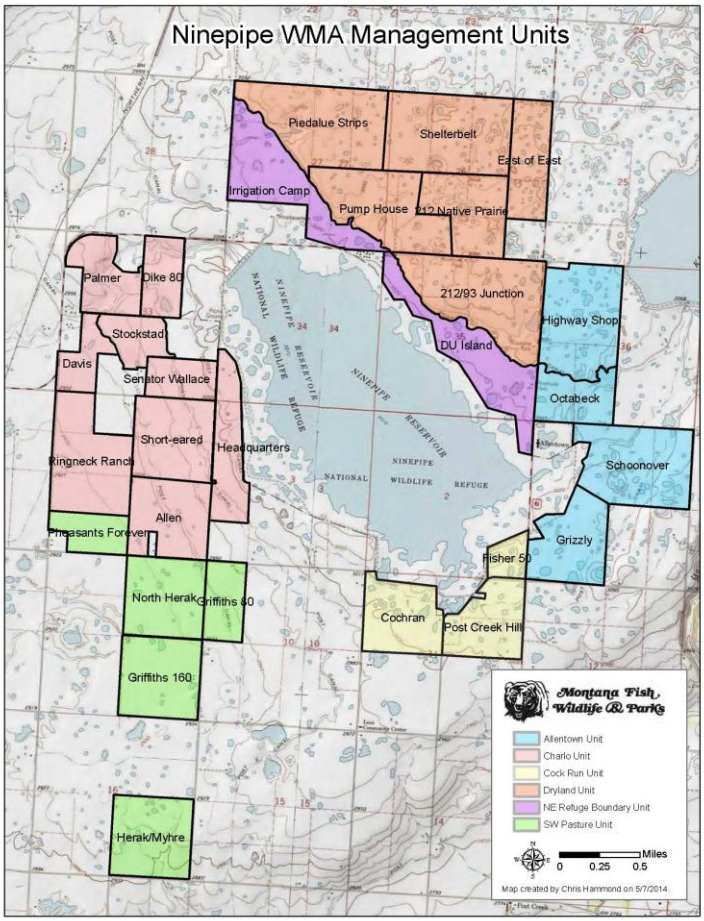


Figure 5. Topographic Map of the Six Management Units on Ninepipe WMA.

Management units contain different proportions and arrangements of cover types and are suited to different management activities. Each cover type in the various tracts has distinct management potential due to size, shape, soil characteristics, topography, and location. What may be considered ideal habitat management from a biological and recreational perspective may not be feasible due to physiographic constraints and limited management resources, particularly in regard to farming activities. Priorities that place a premium on efficiency of available staff and budget will result in some areas being more intensively managed and consequently more

productive. Safety of workers and the public is also a consideration. Moving tractors with wide implements on narrow county roads and making multiple crossings of highways is not only time consuming, it is potentially dangerous. Management objectives for each tract reflect these practical limitations and provide alternatives for expanding farming presence.

A table for each unit lists tract size, proportion of wetlands, and farmable acreage. Farmable acres are either food plots, managed grasslands, or land being prepared to plant grass or food plots. On-the-ground conditions, shape, size, and ease of access may preclude some of the acres listed as farmable to be farmed in the future. They likely never would have been farmed if natural resource conservation had been a priority, rather than agricultural production when in private ownership before becoming WMA land. The tables also contain a habitat category, *Other*, which includes fence lines, roadsides, canal banks, parking lots, administrative sites, shelterbelts, native grasslands, and other sites that are either impossible to farm or unsuited for farming, but that serve as effective habitat nonetheless.

Dryland Unit

The Dryland Unit is composed of the Piedalue Strips, Shelterbelt, East of East, Pump House, Native Prairie, and 212/93 Junction Tracts. The entirety of this unit is above irrigation canals, and thus totally dependent upon natural precipitation for plant growth and wetland recharge (with one exception, Piedalue Strips). The unit is bounded by Duck Road, Piedalue Road, A Canal, Highway 212, private property, and US Highway 93.

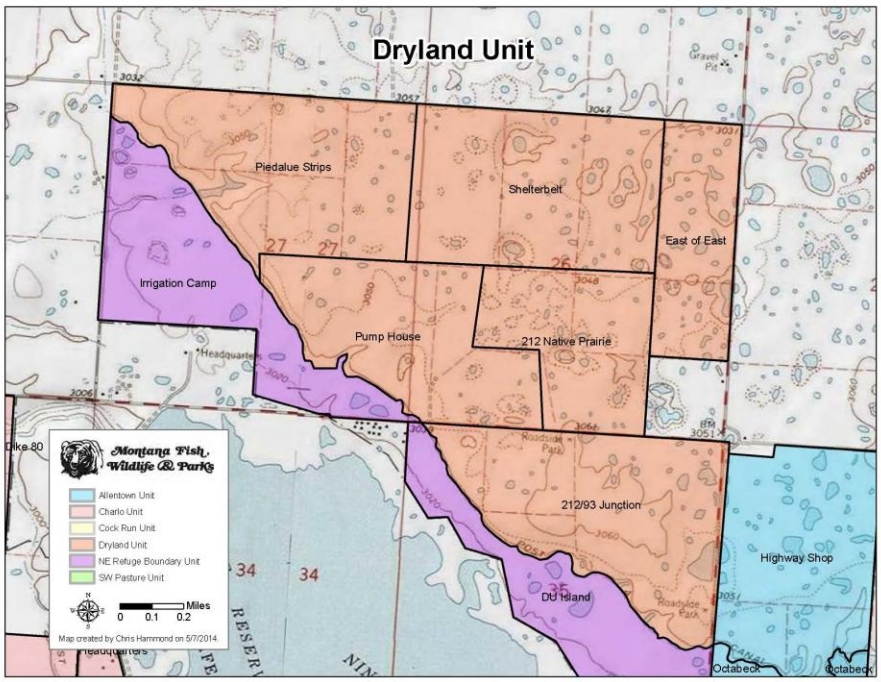


Figure 6. Topographic Map of the Dryland Management Unit and Management Tracts on Ninepipe WMA.

Table 1. Size and percentage of wetland, farmable, currently farmed, and other acreage by Management Tract within the Dryland Unit.

Tract Name	Area	Wetland		Farmable		Farmed (2013)		Other	
	Acres	Acres	%	Acres	%	Acres	%	Acres	%
Piedalue Strips	248	31	13%	175	71%	120	69%	42	17%
Shelterbelt	248	53	21%	100	40%	0	0%	95	38%
East of East	118	29	25%	40	34%	0	0%	49	42%
Pump House	199	21	11%	105	53%	80	76%	73	37%
212 Native Prairie	146	32	22%	5	3%	0	0%	109	75%
212/93 Junction	256	38	15%	140	55%	80	57%	78	30%
TOTAL	1215	204	17%	565	47%	280	50%	446	37%

Piedalue Strips Tract -- Named for the one-time owner who practiced strip farming. This tract is a relatively good area for farming, but impractical to access regularly with project equipment. Its best use is field feeding (especially for waterfowl) and nesting. Outside assistance, or increased WMA staff and budget, is required for this tract to approach its potential. Nesting cover was planted in 1988 and 1995.

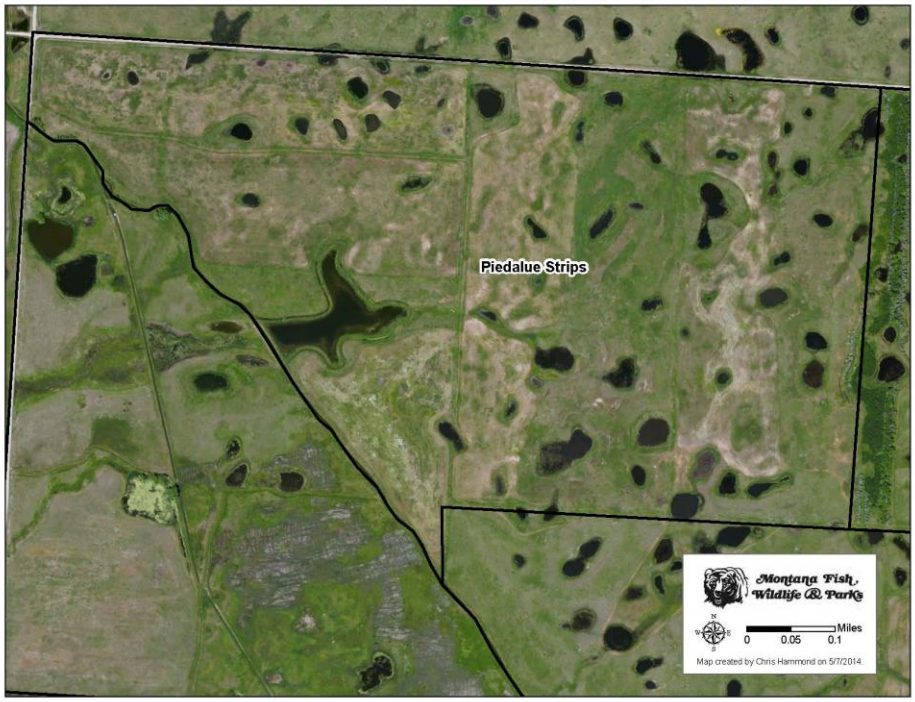


Figure 7. Aerial Map of the Piedalue Strips Management Tract on Ninepipe WMA.

Wetland Objective

- Conserve integrity of glacial potholes to protect water quality and enhance natural wetland vegetation to meet the migratory and reproductive needs of waterfowl and winter cover needs of pheasants.

- Use mechanical or chemical methods to reduce and control reed canary grass in shallow basins.

Food Plot Objective

- Maintain relatively large fields of grain (up to 35 acres each) covering about 40% of the tract to feed pheasants, accommodate large flocks of waterfowl, and improve hunting opportunities.

- Explore share farm opportunities, which would be cost neutral, and provide stubble, a preferred feeding site condition for waterfowl.

- Explore a cooperative agreement with a conservation organization, which could allow more flexibility than share farming for food plot locations and better opportunities to incorporate nesting cover renovations in association with food production.

Nesting Cover Objective

- Provide up to 75 acres (43% of the farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Invigorate up to 20 acres annually with burning and/or haying.

- Renovate 20 acres of monotypic smooth brome every 5 years via a crop rotation to prepare seedbed.

Shelterbelt Tract -- Named for the two prominent old shelterbelts (East Shelterbelt and West Shelterbelt) defining its east and west boundaries. The location is impractical for project equipment to access regularly and is marginal farmland due to topography, rocks, and high density of wetlands. Its prominent wildlife value is waterfowl production and seasonal pheasant use. No part of this tract is currently under cultivation, but food is abundant on adjacent tracts. Nesting cover was planted in 1986, 1987, 1988, 1994, and 2003.

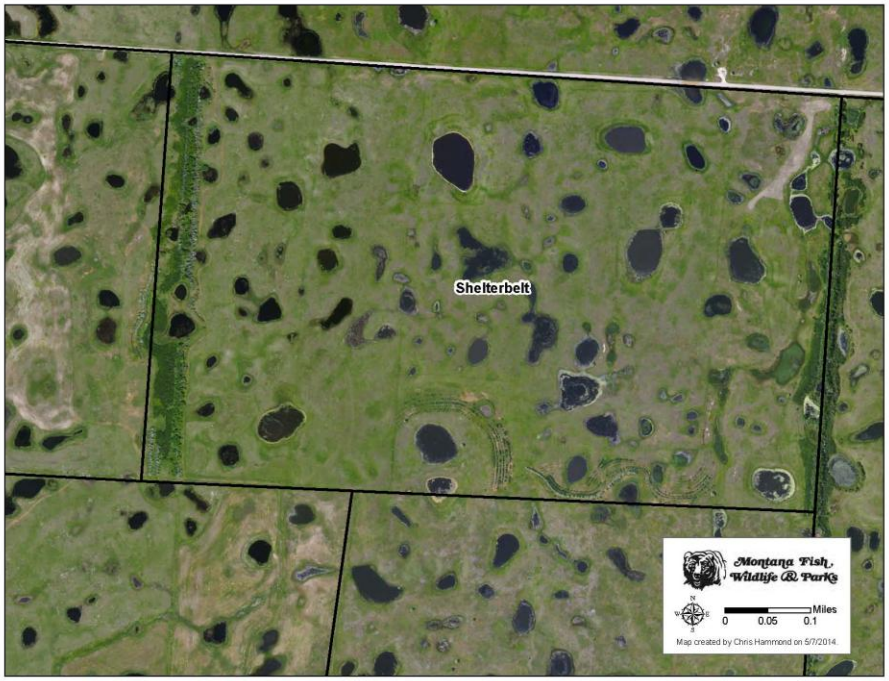


Figure 8. Aerial Map of the Shelterbelt Management Tract on Ninepipe WMA.

Wetland Objective

- Conserve integrity of glacial potholes to protect water quality and enhance natural wetland vegetation to meet the migratory and reproductive needs of waterfowl and winter cover needs of pheasants.

- Use chemical methods to reduce and manage reed canary grass when conditions allow for treatment and recolonization by desirable native vegetation.

Food Plot Objective

- Annual food production is not anticipated unless it is part of a process to renovate small segments of nesting cover over a period of years, which would be less than 10% of the tract area.

Nesting Cover Objective

- Provide up to 75 acres (75% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Remove the invading Russian olive trees that are degrading grassland habitat.

- Manage noxious weeds by spot spraying when they are in the most vulnerable stage and weather allows.

- Clip patches of weed species when risk of spreading by seed is low and when and where chemical treatment is not feasible.

- Renovate small patches of less than 10 acres over a period of 10 years using crop/fallow rotation to prepare seedbed.

East of East Tract – This tract receives its name from its juxtaposition to the eastern boundary of the Shelterbelt Tract, thus East of East. Research has shown that proximity to the shelterbelt diminishes its nesting potential for ground-nesting birds. Being adjacent to US 93 also diminishes its desirability for hunting and its attractiveness to wildlife. None of this tract is currently under cultivation. The location is not practical for WMA staff to farm and the topography, soils, and high density of wetlands limit its suitability for farming. Nesting cover was planted in 1984, 1986, and 1994.

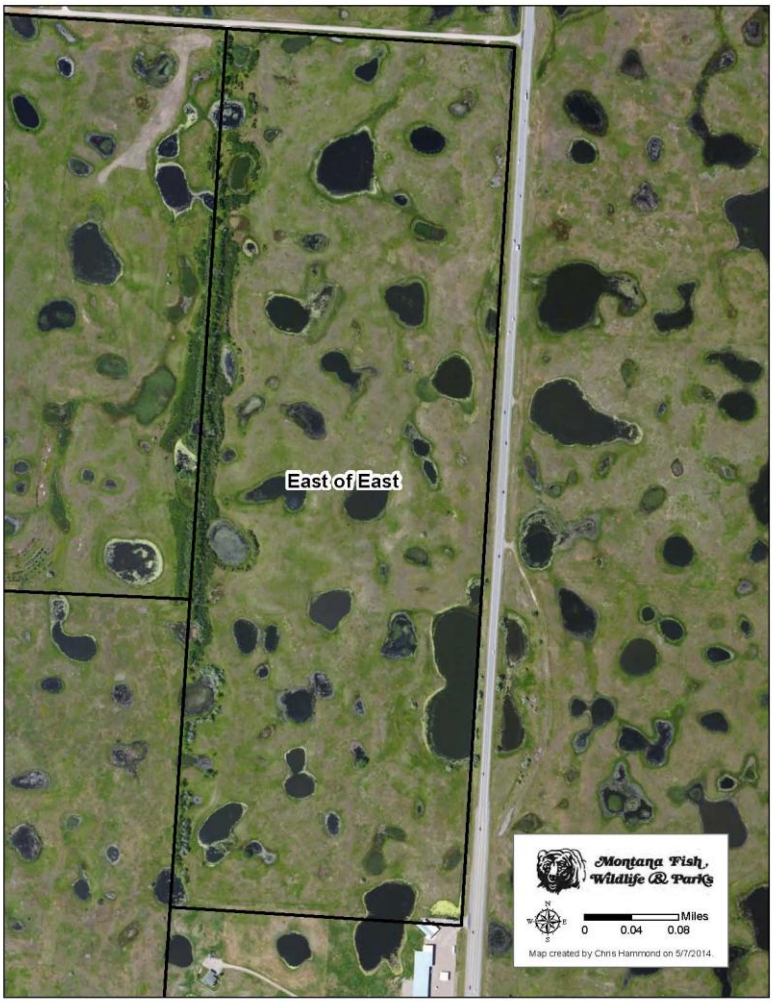


Figure 9. Aerial Map of the East of East Management Tract on Ninepipe WMA.

Wetland Objective

- Conserve integrity of glacial potholes to protect water quality and enhance natural wetland vegetation to meet the migratory and reproductive needs of waterfowl and winter cover needs of pheasants.

- Use chemical methods to reduce and control reed canary grass.

Food Plot Objective

- Annual food production is not anticipated unless it is part of a process to renovate small segments of nesting cover over a period of years, which would be less than 5% of the tract area in any year.

Nesting Cover Objective

- Provide up to 35 acres (88% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Invigorate existing desirable upland vegetation with spraying, clipping, and grazing.

- Remove invading Russian olive trees.

Pump House Tract -- A prominent, abandoned shed covering a well and old pump give this tract its name. This unit has several wetlands with a broad range of size and depth. No supplemental water is available for wetland management. It provides good waterfowl breeding and good pheasant habitat, except for a lack of winter thermal cover. It is fairly well suited to farming, but impractical to access regularly with equipment from WMA headquarters. Nesting cover was planted in 1985, 1987, 1988, and 1995.

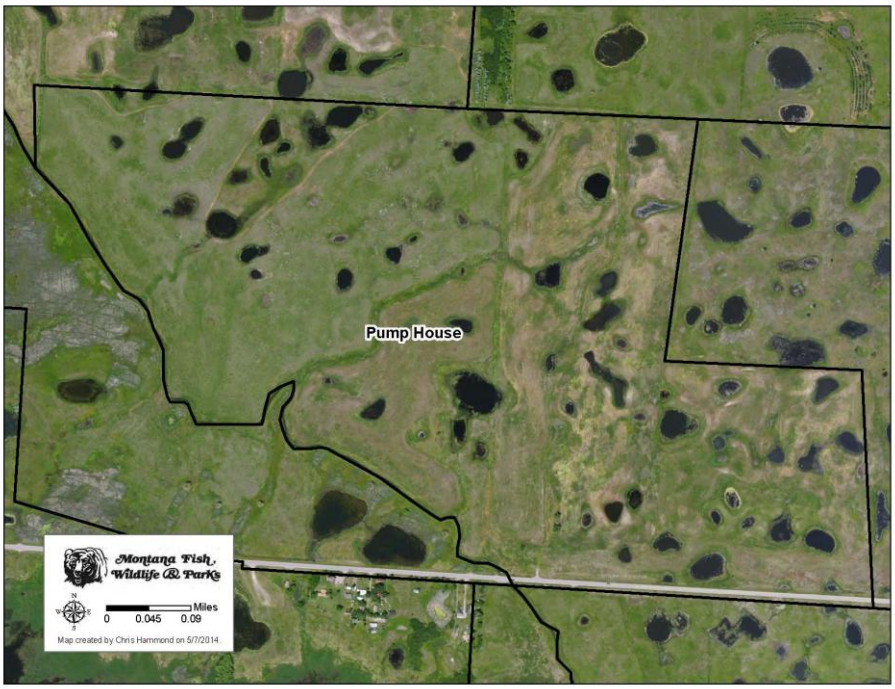


Figure 10. Aerial Map of the Pump House Management Tract on Ninepipe WMA.

Wetland Objective

- Conserve integrity of glacial potholes to protect water quality and enhance natural wetland vegetation to meet the migratory and reproductive needs of waterfowl and winter cover needs of pheasants.

- Use mechanical or chemical methods to reduce and manage reed canary grass in shallow basins.

Food Plot Objective

- Maintain relatively large fields of grain (up to 35 acres each) covering about 20% of the tract to feed pheasants, accommodate large flocks of waterfowl, and improve hunting opportunities.

- Use outside funding sources, cooperative agreements, or sharecropping opportunities to ensure annual success.

Nesting Cover Objective

- Provide up to 65 acres (62% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Increase amount and improve condition of nesting cover.

- Plant a mix of grass/legume on 20 acres of retired cropland in 1-3 years.

- Invigorate up to 20 acres annually by spraying, clipping, or haying.

Native Prairie Tract -- This tract contains the largest block of native bunch grass remaining on the WMA. The rolling topography and high density of glacial potholes no doubt contributed to it never being plowed as was most of the surrounding land. The native vegetation community is very susceptible to invasion by exotic species including noxious weeds, invasive grasses, and some woody species. Very little of this tract has ever been plowed, and none is under cultivation. A small field was planted to nesting cover in 1995. The primary wildlife values are waterfowl nesting and resting.

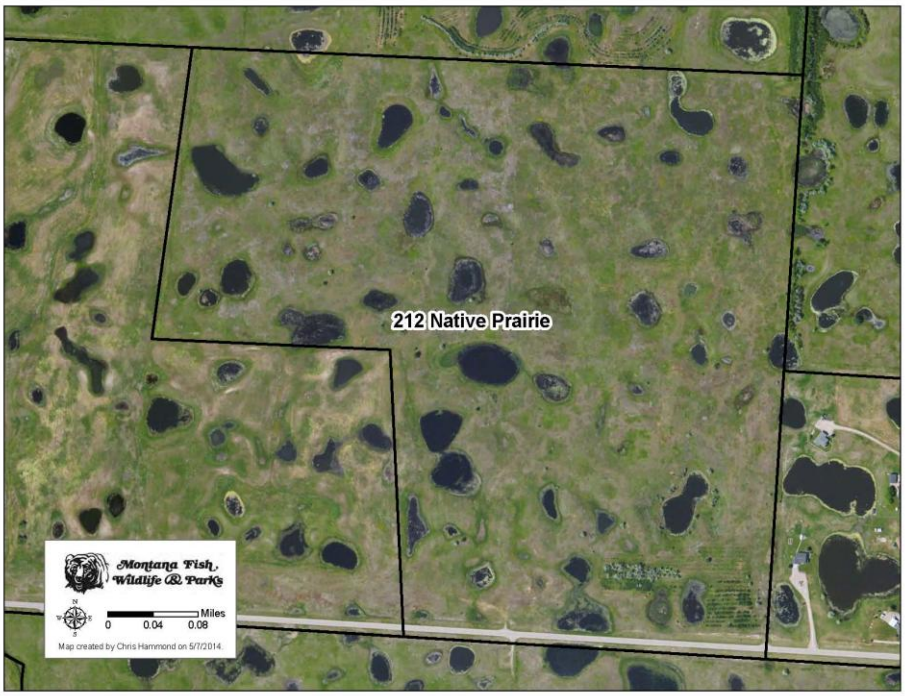


Figure 11. Aerial Map of the 212 Native Prairie Management Tract on Ninepipe WMA.

Wetland Objective

- Conserve integrity of glacial potholes to protect water quality and enhance natural wetland vegetation to meet the migratory and reproductive needs of waterfowl and winter cover needs of pheasants.

Nesting Cover Objective

- Protect native plant community.
- Refrain from any tillage.
- Use herbicides judiciously to avoid damaging native plants.
- Use periodic livestock grazing or establish a managed grazing system to enhance productivity of native vegetation.

212/93 Junction Tract -- The northeast corner of this tract is at the junction of Highway 93 and Highway 212 giving it its name. Topography is variable as is the density of wetland basins. About half of the tract is relatively good for farming, but accessibility by WMA equipment is inefficient due to its location. It provides good habitat for waterfowl and pheasants. Nesting cover was planted in 1984, 1986, 1987, 1988, 1995, and 2006.

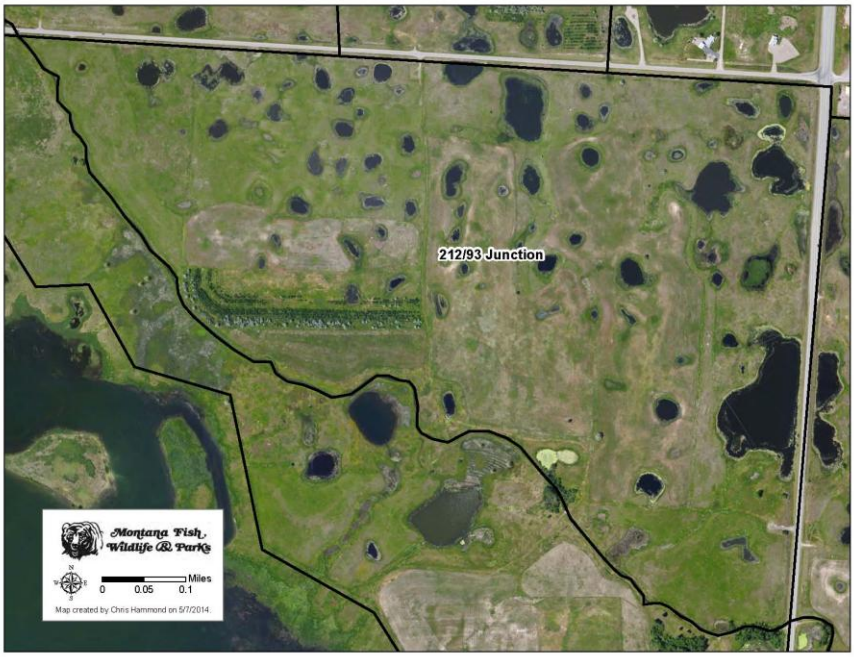


Figure 12. Aerial Map of the 212/93 Junction Management Tract on Ninepipe WMA.

Wetland Objective

- Conserve integrity of glacial potholes to protect water quality and enhance natural wetland vegetation to meet the migratory and reproductive needs of waterfowl and winter cover needs of pheasants.
- Use mechanical or chemical methods to reduce reed canary grass.
- Explore and take advantage of opportunities to supplement water levels in some basins through pumping in years when excess water is available.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 20% of its area. Maintain some relatively large fields of grain (up to 35 acres each) to feed pheasants, accommodate large flocks of waterfowl, and improve hunting opportunities
- When possible use a share farmer to have one of two existing fields of about 35 acres of grain and the other in preparation for grain every year.

Nesting Cover Objective

- Provide up to 90 acres (64% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Improve and maintain condition of nesting cover.
- Renovate weedy/decadent fields.
- Maintain and invigorate cover by spraying and/or clipping weedy patches.
- Reduce population of Russian olive trees.

NE Refuge Boundary Unit

The NE Refuge Boundary Unit is composed of the Irrigation Camp and DU Island Tracts. This unit is bounded by Post A Canal, Piedalue Road, Ninepipe NWR, and Highway 93. Many of the irrigation headgates in this unit are non-functional, but due to its topographic and geologic features, seepage from the canal provides for substantial wetland habitat.

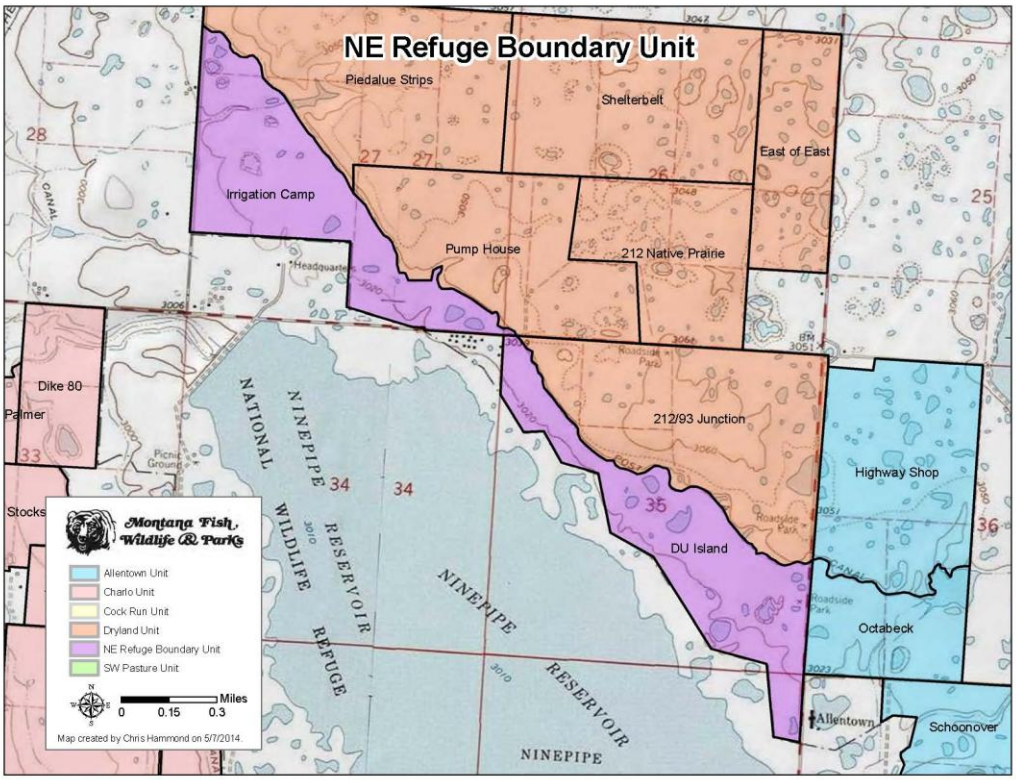


Figure 13. Topographic Map of the NE Refuge Boundary Management Unit and Management Tracts on Ninepipe WMA.

Table 2. Size and percentage of wetland, farmable, currently farmed, and other acreage by Management Tract within the NE Refuge Boundary Unit.

Tract Name	Area	Wetland		Farmable		Farmed (2013)		Other	
	Acres	Acres	%	Acres	%	Acres	%	Acres	%
Irrigation Camp	194	48	25%	60	31%	0	0%	86	44%
DU Island	184	26	14%	100	54%	15	15%	58	32%
TOTAL	378	74	20%	160	42%	15	9%	144	38%

Irrigation Camp Tract -- The maintenance yard for the irrigation project (known as the Ninepipe Camp) is located on the edge of this tract, leading to its name. The largest contiguous stand of cattails on the WMA grows here, and harbors the largest purple loosestrife infestation on the WMA. The tract provides decent habitat for pheasants and waterfowl but lacks on-site grain crops for food, although neighboring tracts provide adequate food resources. Little of the tract is well-suited for farming and it is not easily accessible to WMA equipment. There are no areas on this tract currently under cultivation. Nesting cover was planted in 1984, 1985, 1988, 1990, and 1997.

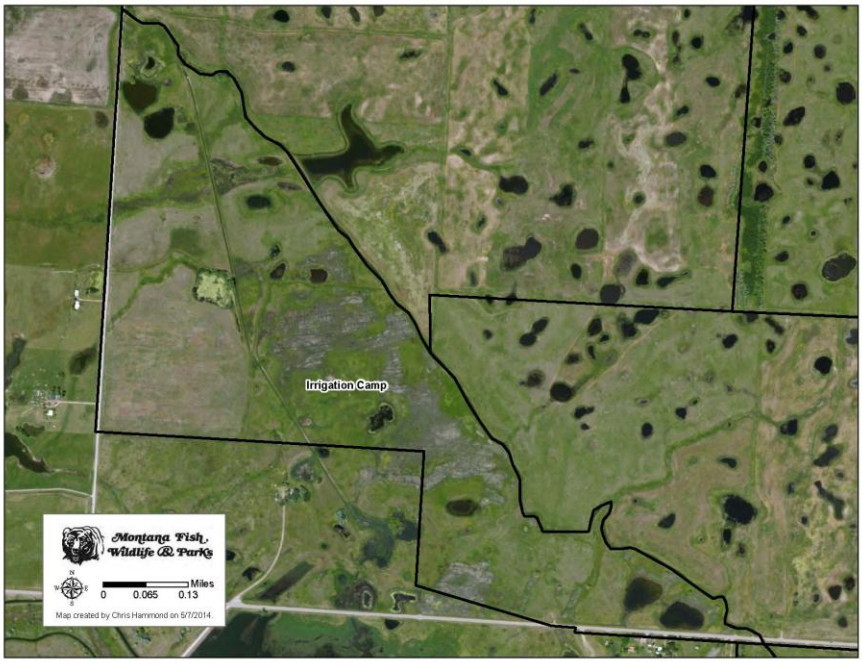


Figure 14. Aerial Map of the Irrigation Camp Management Tract on Ninepipe WMA.

Wetland Objective

- Expand management opportunities through improvement to irrigation delivery system to meet the migratory and reproductive needs of waterfowl and winter cover needs of pheasants.

- Supplement natural recharge and irrigation seepage into wetlands with siphons.

- Expand wetland management options by replacing headgates and improving ditches.

- Control purple loosestrife using chemical, manual, and biological means.

Food Plot Objective

- Grow grain on up to 10% of the area of this tract, primarily as a site preparation for nesting cover renovation.

- Use a short rotation (3-6 years) of grain cropping to renovate upland grass stands.

Nesting Cover Objective

- Provide up to 40 acres (67% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Use rotation of grain crops, cover crops, and fallow to prepare site to renovate nesting cover.

- Invigorate decadent and weedy grass fields by spraying and mowing.

DU Island Tract -- The first project undertaken by Ducks Unlimited in the Mission Valley was to construct two islands in the Ninepipe Reservoir by cutting channels across peninsulas adjacent to this tract. There is a small undeveloped private inholding on this tract. Pits for waterfowl hunting parallel the NWR boundary fence on this tract, which also has 3 outhouses, kid's fishing pond, and a birding blind. Density of wetlands is moderate with good diversity of size and type. It is relatively well-suited to farming, but inefficient to access with WMA equipment. Nesting cover was planted in 1984, 1986, 1987, 1988, 1996, 2001, 2003, 2004, and 2006.

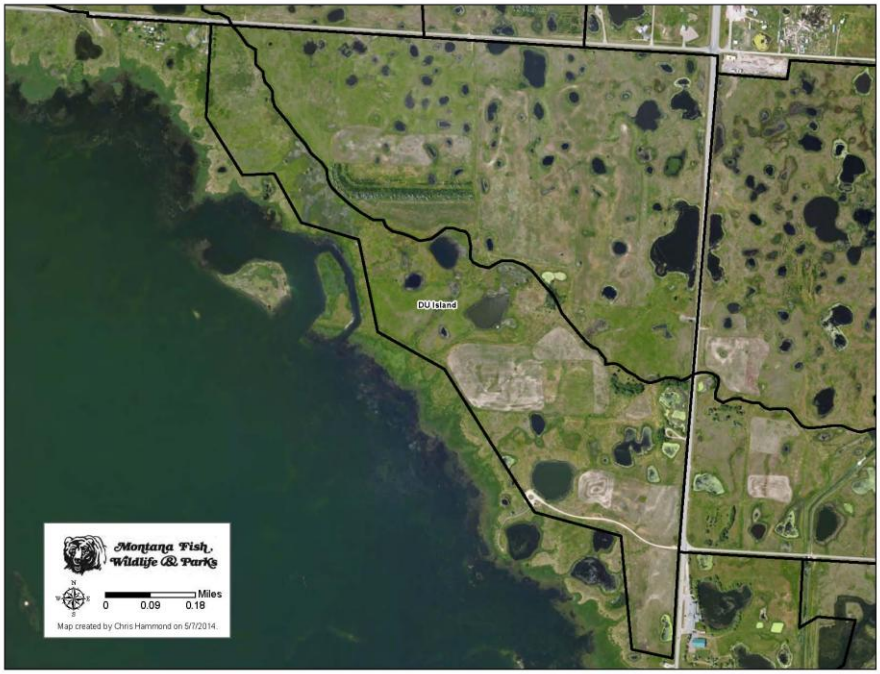


Figure 15. Aerial Map of the DU Island Management Tract on Ninepipe WMA.

Wetland Objective

- Provide habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Supplement water in wetlands on eastern portion of this tract (especially Family Fish Pond) through 2 headgates on A Canal.
- Use siphons on others where headgates are not functional to supplement wetland water levels.
- Repair or replace 3 old headgates within 3 years.
- Expand wetland management opportunities and efficiency by improving access, delivery, and distribution improvements during each of the next 5 years.
- Clear brush from two ditches within 1-3 years and continue to maintain them annually thereafter.

Food Plot Objective

- Maintain various size fields of grain (up to 15 acres each) covering about 15% of the tract to feed pheasants, accommodate large flocks of waterfowl, and improve hunting opportunities.

- Establish new food plots as older food plots are reseeded to nesting cover.

Nesting Cover Objective

- Provide up to 70 acres (70% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Renovate old stands of grass with rotation of food plots to prepare seedbed.
- Invigorate newer stands with clipping, spraying, or haying.

Pheasant Brood Habitat Objective

- Maintain moist soil/early successional vegetation in late spring through summer.
- Develop pheasant brood strips within 1-4 years and maintain them annually.

Allentown Unit

The Allentown Unit is composed of the Highway Shop, Octabeck, Schoonover, and Grizzly Tracts. This unit is bounded by Kicking Horse Road, Montana Department of Transportation (DOT) maintenance shop, Highway 93, Gunlock Road, Confederated Salish and Kootenai Tribes (CSKT) Tribal Wildlife Mitigation land, private property, and Marsh Creek Road.

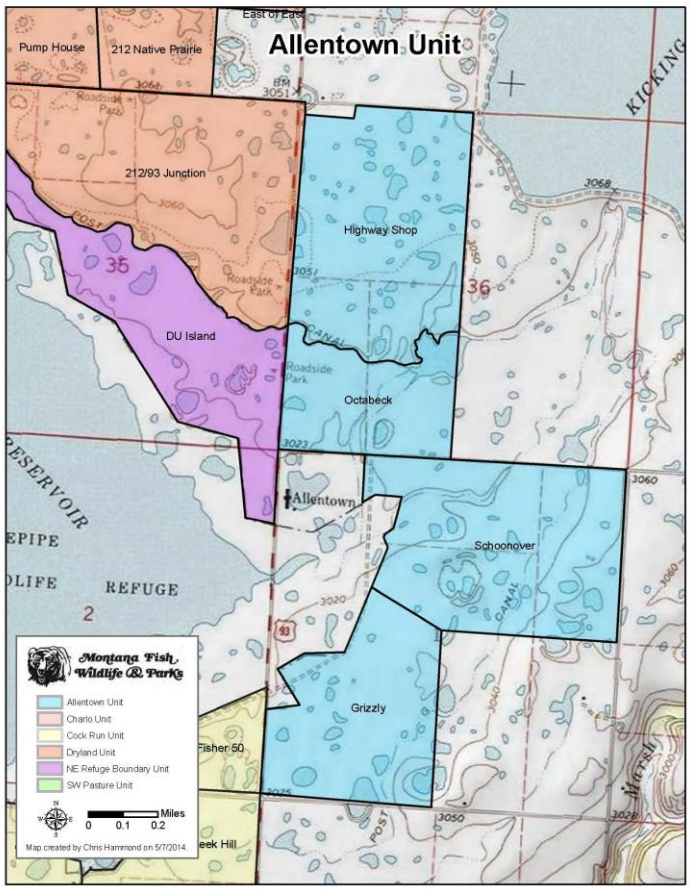


Figure 16. Topographic Map of the Allentown Management Unit and Management Tracts on Ninepipe WMA.

Table 3. Size and percentage of wetland, farmable, currently farmed, and other acreage by Management Tract within the Allentown Unit.

Tract Name	Area	Wetland		Farmable		Farmed (2013)		Other	
	Acres	Acres	%	Acres	%	Acres	%	Acres	%
Highway Shop	210	51	24%	30	14%	6	20%	129	61%
Octabeck	98	22	22%	30	31%	5	17%	46	47%
Schoonover	213	49	23%	70	33%	5	7%	94	44%
Grizzly	148	30	20%	40	27%	6	15%	78	53%
TOTAL	669	152	23%	170	25%	22	13%	347	52%

Highway Shop Tract -- Part of this tract was transferred by FWP to DOT as a location for a maintenance yard and shop. It is a relatively wet site with a diversity of wetland types (some partially drained to protect a road) and native prairie vegetation. Much of it is unsuited for farming and somewhat inefficient for WMA equipment to access. There is no irrigation here. It is fair to good habitat for pheasants and waterfowl. Nesting cover was planted in 1985, 1988, and 1990.

Figure 17. Aerial Map of the Highway Shop Management Tract on Ninepipe WMA.

Wetland Objective

- Conserve integrity of glacial potholes to protect water quality and enhance natural wetland vegetation to meet the migratory and reproductive needs of waterfowl and winter cover needs of pheasants.

- Use mechanical or chemical methods to reduce and control reed canary grass in farmed areas of this tract.

Food Plot Objective

- Provide food plots on this tract covering about 3% of its area.

- Maintain existing cultivated ground in food production for up to 10 years. After 10 years these grounds would be planted back to managed grasslands.

Nesting Cover Objective

- Provide up to 25 acres (83% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Renovate old stands of grass with rotation of food plots to prepare seedbed.
- Invigorate newer stands with clipping, spraying, or haying.
- Conserve native prairie vegetation.

Octabeck Tract – Octabeck Pond (named for a one-time landowner) is an integral part of the irrigation project on this tract where water can be routed from Kicking Horse Reservoir into Ninepipe Reservoir or into A Canal for delivery to irrigators. Natural, restored, and enhanced wetlands occur here. It is fair-good pheasant and waterfowl habitat. Nesting cover was planted in 1986, 1987, 1988, 1995, and 2006.

Figure 18. Aerial Map of the Octabeck Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Repair and develop irrigation ditches in 2014-2015.
- Supplement and manage water regimes of wetlands with two headgates; one in A Canal and one in Octabeck Pond while irrigating uplands.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 5% of its area to feed pheasants and waterfowl and improve hunting opportunities.

Nesting Cover Objective

- Provide up to 25 acres (83% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Invigorate nesting cover by spraying and clipping weed infestations annually.

- Renovate small patches with rotations through food plots.

Schoonover Tract – Schoonover Pond (named for a one-time landowner) was constructed on this tract by Ducks Unlimited. The 26 acre wetland is mostly on the WMA whereas most of the dike that impounds it is on the NWR. Sections of this tract are fairly conducive to farming although field sizes are relatively small. Larger fields that at one time were sharecropped have been broken up with wetland restorations and enhancements that complement a good density and distribution of natural potholes. Remnants of native prairie still exist. Habitat on this tract is good for pheasants and waterfowl. Nesting cover was planted in 1985, 1986, 1988, 1991, and 1997.

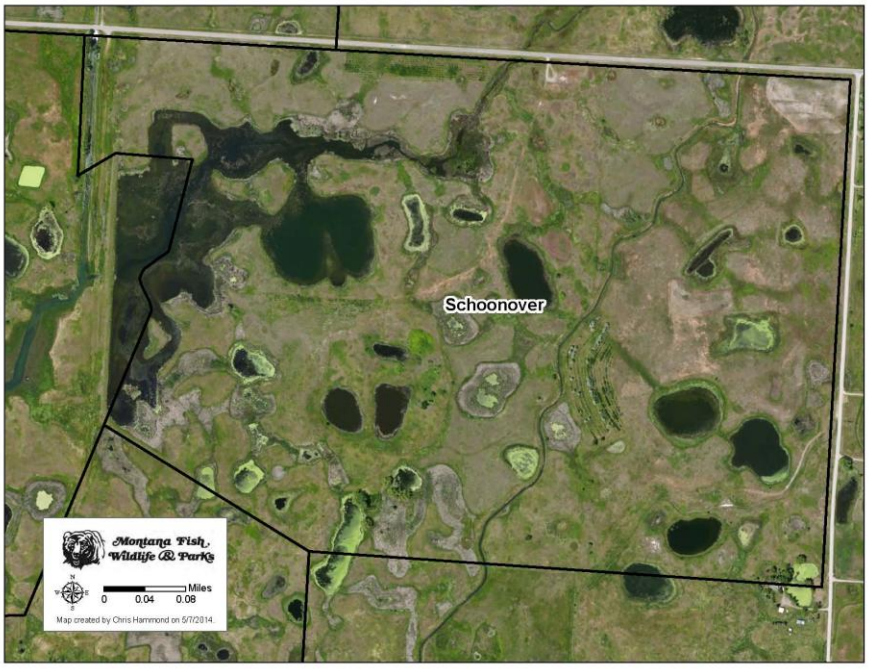


Figure 19. Aerial Map of the Schoonover Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.

- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Supplement water levels in numerous wetlands via 2 headgates on G-Canal and one head gate on Marsh Creek Canal.
- Maintain and improve ditches annually as needed.
- Install 2 culverts in 2014 to better manage wetlands and improve administrative access.
- Repair dikes in 2015.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 10% of its area to feed pheasants and waterfowl and improve hunting opportunities.
- Increase size and number of cultivated plots on this tract.

Nesting Cover Objective

- Provide up to 50 acres (71% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Improve and maintain quality of nesting habitat.
- Invigorate grass stands by spraying and clipping weed infestations.
- Renovate the most decadent and weedy nesting habitat by rotating them through cycles of fallow and grain crops until a clean seedbed is established.
- Reduce the number of Russian olive and willow trees.

Grizzly Tract -- Although not exclusive to this area, several notable grizzly bear occurrences on this tract led to its name. Natural and enhanced wetlands are prominent and include large stands of dense cattails. Much of the area is poorly suited to farming and small fields here have been difficult to establish due to extensive grazing geese. Nesting cover was planted in 1984, 1985, 1986, and 1988.

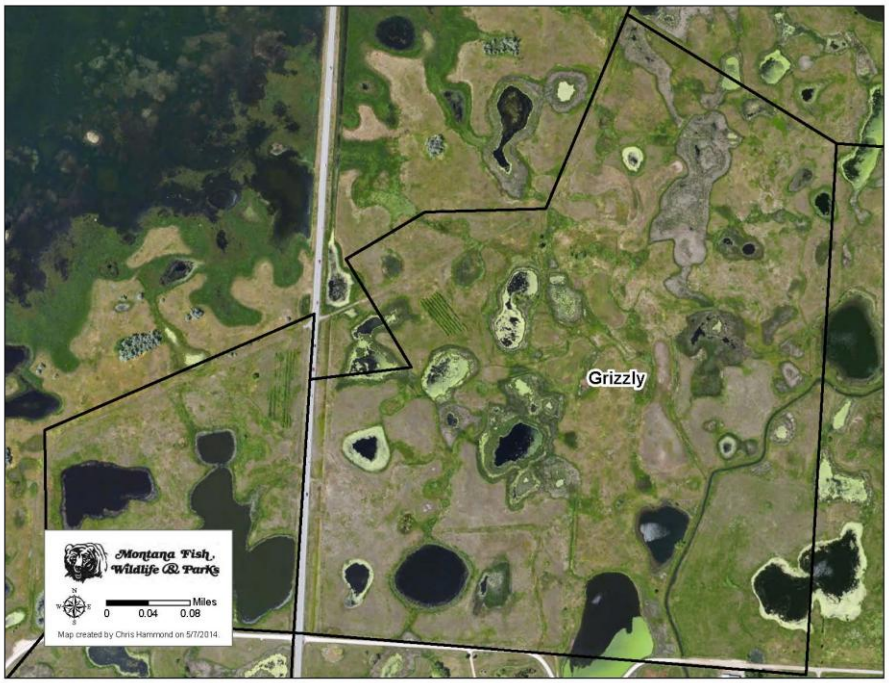


Figure 20. Aerial Map of the Grizzly Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Manage wetlands with irrigation flows from 3 headgates on G Canal and one on Marsh Creek Canal.
- Retrofit water control structures in 3 dikes where inflows cannot be controlled due to seepage from canals within 5 years.
- Improve administrative access around wetland complex by installing culverts and filling shallow depressions.
- Clean and repair irrigation ditches annually.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 7% of its area to feed pheasants and waterfowl and improve hunting opportunities.
- Develop new food plots over a 10-year period as existing plots are converted to nesting cover.

Nesting Cover Objective

- Provide up to 30 acres (75% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Renovate grass stands with cycle of crops and fallow until suitably clean seedbed is established.
- Invigorate nesting cover by spraying and clipping weedy patches.

Cock Run Unit

The Cock Run Unit is composed of the Fisher 50, Post Creek Hill, and Cochran Tracts. This unit is bounded by Ninepipe NWR, Kerns Road, 5 private properties, and Highway 93. It is bisected by Fish Hatchery Road. One small inholding with a dwelling is within this unit.

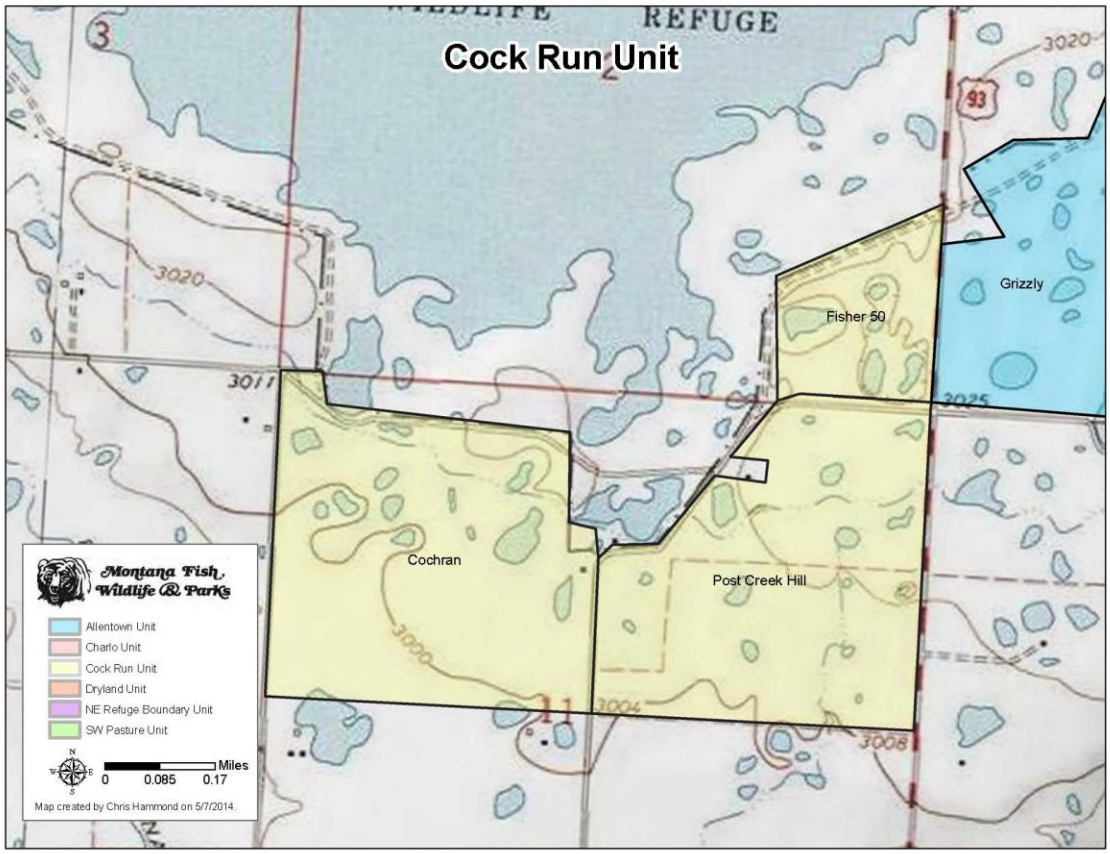


Figure 21. Topographic Map of the Cock Run Management Unit and Management Tracts on Ninepipe WMA.

Table 4. Size and percentage of wetland, farmable, currently farmed, and other acreage by Management Tract within the Cock Run Unit.

Tract Name	Area	Wetland		Farmable		Farmed (2013)		Other	
	Acres	Acres	%	Acres	%	Acres	%	Acres	%
Fisher 50	38	10	26%	10	26%	0	0%	18	47%
Post Creek	132	16	12%	80	61%	14	18%	36	27%
Cochran	139	13	9%	80	58%	16	20%	46	33%
TOTAL	309	39	13%	170	55%	30	18%	100	32%

Fisher 50 Tract -- The name is derived from a previous owner. It includes several of the largest and deepest natural wetland basins on the WMA, which often receive inflow from irrigation runoff from neighboring land and from irrigation siphons beneath both adjacent roads. Several smaller wetlands occur on the tract. None of this tract is currently under cultivation. It is a difficult site to farm due to topography, field size, and shallow rocky soil. Nesting cover was planted in 1984 and 1986.

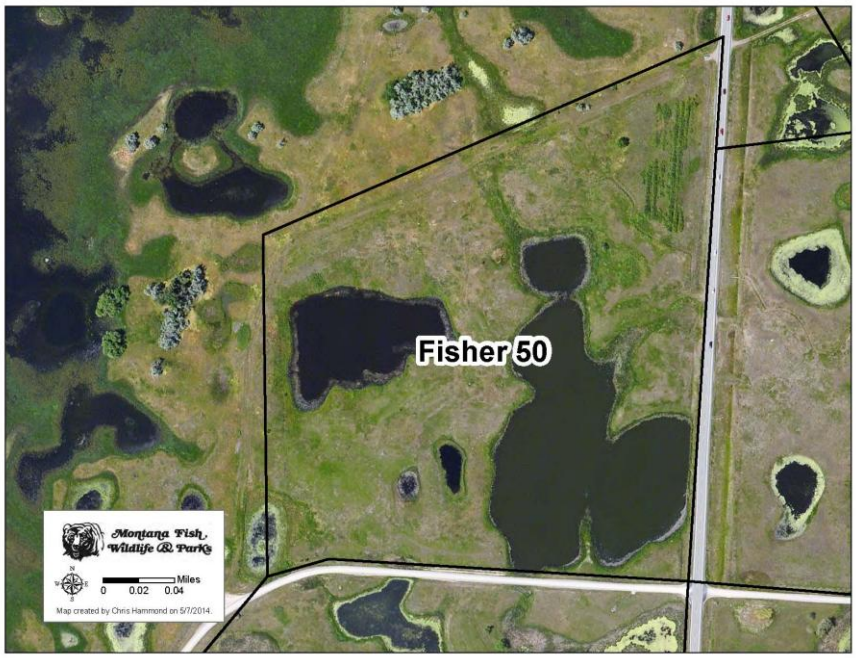


Figure 22. Aerial Map of the Fisher 50 Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Add water to basins via 3 headgates on G-Canal.

Food Plot Objective

- Annual food production is not anticipated unless it is part of a process to renovate small segments of nesting cover over a period of years, which would be less than 2% of the tract area in any year.

- Small plots of food crops may occasionally be developed as a stage in nesting cover renovation.

Nesting Cover Objective

- Provide up to 10 acres (100% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Invigorate decadent grass stands by mowing or applying herbicides.

- Renovate decadent monoculture of smooth brome grass.

Post Creek Hill Tract -- This tract, on the terminal glacial moraine above Post Creek, gets its name from the locally well-known hill on Highway 93 along the east border. It has a moderate density of wetland basins with supplemental water input available via irrigation. It has some areas that are good for farming and it is reasonably accessible with WMA equipment. Nesting cover was planted in 1984, 1987, 1988, 1995, 1997, 2003, and 2006.

Figure 23. Aerial Map of the Post Creek Hill Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Manipulate wetlands from 5 headgates on G-Canal.
- Improve and maintain irrigation delivery system by cleaning existing ditches, establishing new ditches, and installing culverts over a 3-year period.
- Explore opportunities for increasing wetland habitat.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 15% of its area to feed pheasants and waterfowl and improve hunting opportunities.
- Rotate cultivated food crops around on all farmable acres to prepare sites for establishment of nesting cover.
- Use cover crops as part of farming rotation to provide for wildlife food, pheasant brood habitat, and to improve soil health.

Nesting Cover Objective

- Provide up to 60 acres (75% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Invigorate grass/alfalfa fields by clipping and spraying weedy patches.
- Renovate weedy, decadent stands that lack diversity of composition.
- Control encroachment by Russian olive trees.

Cochran Tract -- The Cochran Place, a one-time farmstead on this parcel, was the location of the original WMA headquarters and bunkhouse. Most of the tract is relatively flat with good soils for farming and is relatively easy to access with WMA equipment. A portion of the tract has a medium-high density of potholes that can be manipulated with irrigation flows. Nesting cover was planted in 1987, 1988, 1991, 1997, 2003, and 2013.

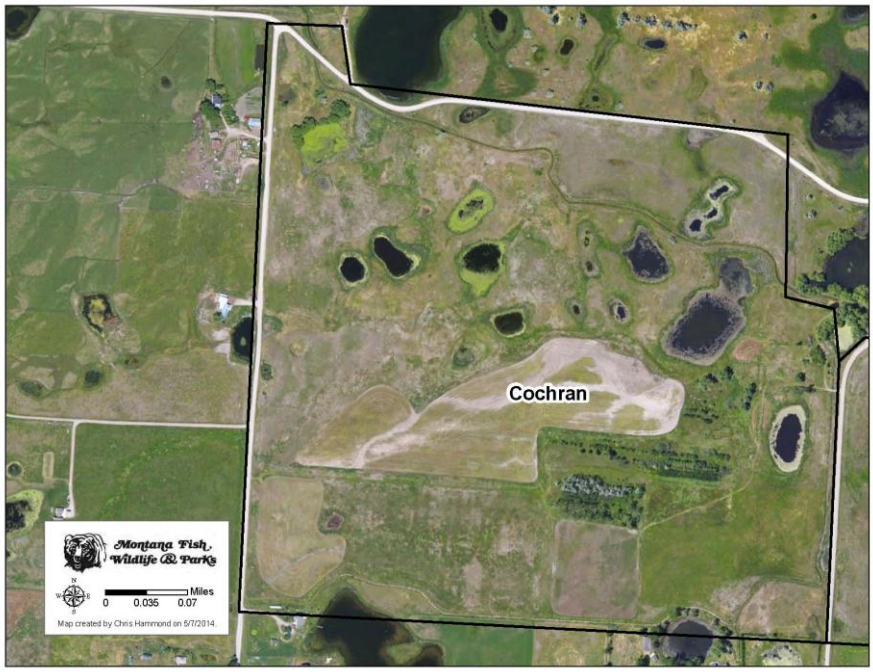


Figure 24. Aerial Map of the Cochran Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Conduct wetland management activities with a siphon, 3 headgates on G Canal, and 1 head gate on 18G Canal.
- Clean and repair irrigation ditches annually.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 20% of its area to feed pheasants and waterfowl and improve hunting opportunities.
- Rotate cultivated food crops around on all arable acres as a method of preparing sites for nesting cover.
- Use cover crops as part of farming rotation to provide for wildlife food, pheasant brood habitat, and to improve soil health.

Nesting Cover Objective

- Provide up to 50 acres (63% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Renovate weedy, decadent stands that lack diversity of composition using a rotation of fallow/grain to prepare a clean seedbed.
- Invigorate grass/alfalfa fields by clipping and spraying weedy patches.
- Control encroachment by Russian olive trees.

SW Pasture Unit

The SW Pasture Unit is composed of the Pheasants Forever, North Herak, Griffiths 80, Griffiths 160, and Herak/Myhre Tracts. This unit is bounded by the Charlo Unit, 3 private properties, Sandsmark WPA, West Post Creek Road, and Ninepipe Road, 2 private properties, and Olsen Road. All tracts in this unit are relatively new additions to the WMA. They all had a long history as cattle pasture prior to acquisition.

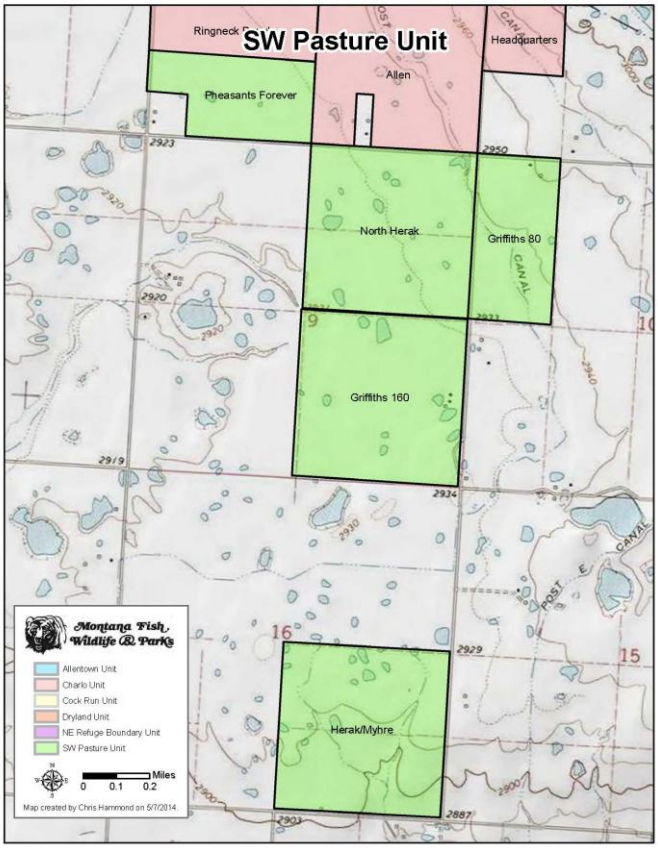


Figure 25. Topographic Map of the SW Pasture Management Unit and Management Tracts on Ninepipe WMA.

Table 5. Size and percentage of wetland, farmable, currently farmed, and other acreage by Management Tract within the SW Pasture Unit.

Tract Name	Area	Wetland		Farmable		Farmed (2013)		Other	
	Acres	Acres	%	Acres	%	Acres	%	Acres	%
Pheasants Forever	69	13	19%	40	58%	0	0%	16	23%
North Herak	158	21	13%	60	38%	8	13%	77	49%
Griffiths 80	80	2	3%	40	50%	0	0%	38	48%
Griffiths 160	160	35	22%	50	31%	0	0%	75	47%
Herak/Myhre	160	16	10%	60	38%	5	8%	84	53%
TOTAL	627	87	14%	250	40%	13	5%	290	46%

Pheasants Forever Tract -- Mission Valley Pheasants Forever (PF) was instrumental in protecting this property by purchasing it, making some habitat and access improvements, then selling it to FWP at less than their purchase price. None of this tract is currently under cultivation. It is encumbered with a United State Department of Agriculture (USDA) conservation easement that places strict limitations on farming activities. Wetlands are mostly developments created by the United States Fish and Wildlife Service (USFWS) under terms of the easement and subsequently further enhanced under PF ownership. Nesting cover, which was planted by the private owner, was a mix of grasses for haying and grazing.

Figure 26. Aerial Map of the Pheasants Forever Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.

- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.

- Use water from 12D Canal to add water directly to 3 wetlands and to capture upland irrigation tail-water flows in 4 wetlands.

- Establish new ditches or improve existing ditches within 3 years to increase efficiency and reduce waste.

- Enhance several created wetlands by enlarging dikes that were designed and constructed as part of the requirements of the conservation easement, which only tried to replicate presumed natural wetland that had been destroyed for agricultural convenience, rather than maximize potential. Top widths are narrower and side slopes are steeper than standard on the WMA, thus not as safe to traverse and more likely to fail.

Food Plot Objective

- Under permit from USFWS, when grasslands require renovation, use a grain/fallow rotation for several years to prepare seedbed for planting new nesting cover.

Nesting Cover Objectives

- Provide up to 40 acres of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Invigorate grasses annually with irrigation, mowing, and spot spraying weeds.

Pheasant Brood Habitat Objective

- Keep some areas of soil moist and sod-free during pheasant brood-rearing period.

North Herak Tract -- This is one of the properties that the Herak family sold to FWP. It has moderate to high density of various wetland types, both natural and enhanced. This property has the highest density of irrigation ditches of any tract on the WMA, making vehicle access difficult. It has limited potential as farmland, but is relatively easy to get to with WMA equipment. Upland grasses, which were planted long before it became part of the WMA, are primarily an irrigated pasture mix.

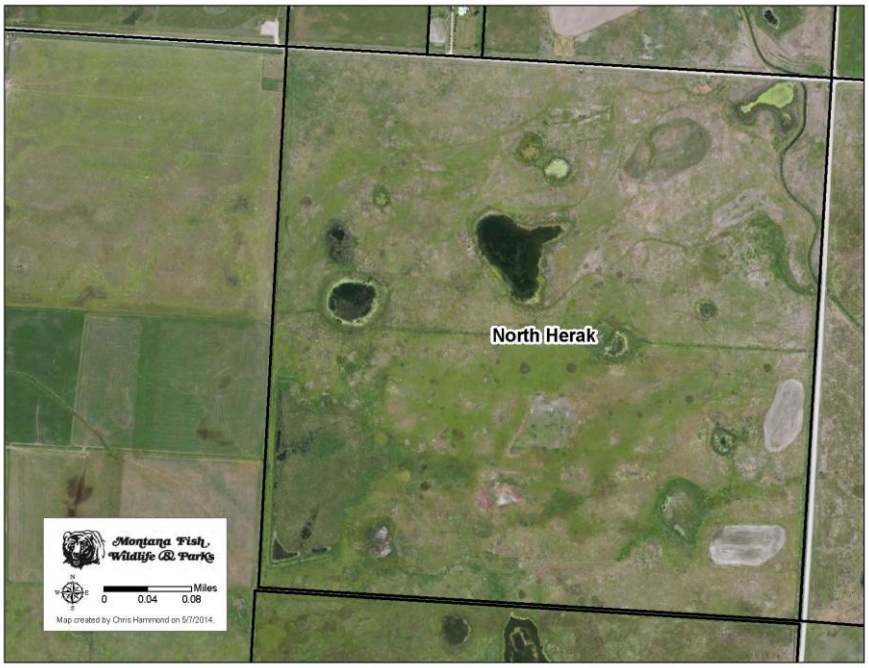


Figure 27. Aerial Map of the North Herak Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunter opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Flow water several times during the season from 1 head gate on D Canal and 2 headgates on E Canal to fill wetlands while irrigating uplands.
- Maintain, repair, and improve ditches over a 5-year period
- Install culverts and fill unneeded ditches to improve access for WMA vehicles and equipment.
- Work on funding source and process for developing new wetlands that were surveyed and engineered by Ducks Unlimited in 2009.
- Coordinate with partners on wetland restoration and enhancement projects.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 10% of its area to feed pheasants and waterfowl and improve hunting opportunities.

Nesting Cover Objectives

- Provide up to 45 acres (75% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Promote vigor in existing upland vegetation to prolong stand life because of difficulties associated in renovating cover given the moisture regime on this tract.
- Irrigate pasture grasses when managing wetland levels after peak nesting season.
- Invigorate desirable vegetation and suppress weeds with spot clipping and spraying.
- Renovate suitable sites by using a rotation of grain/fallow to prepare clean seedbed.

Griffiths 80 Tract -- This is one of the last parcels added to the WMA in a trade with the Griffiths family. It is the only tract with a perimeter that is completely fenced. Management options are restricted by a USFWS conservation easement. It had a long, recent history as irrigated pasture for cattle. Ditches are in poor condition from being impacted by cattle, and grasses that thrived under previous management have deteriorated from underutilization. Wetland basins are few and small.

Figure 28. Aerial Map of the Griffiths 80 Management Tract on Ninepipe WMA.

Wetland Objective

- Provide shallow wetlands to serve as pair habitat and feeding sites for ducks.
- Fill wetland basins with water from E Canal while irrigating uplands.
- Repair and improve irrigation system by cleaning ditches, building up trampled banks, and installing culverts in 5-10 years..
- Repair or replace pipe that transfers water across D Canal that bisects tract.
- Explore wetland enhancement opportunities.

Food Plot Objective

- Under permit from USFWS, when grasslands require renovation, use a grain/fallow rotation for several years to prepare seedbed for planting new nesting cover.

Nesting Cover Objective

- Enhance and maintain existing vegetation given constraints on farming options relative to conservation easement.
- Maintain vigor of grasses by spraying, haying, grazing, or irrigating uplands in conjunction with wetland management.
- If weeds cannot be controlled through management, secure permit from USFWS to fill irrigation ditches and plow up most of the uplands and establish a blend of dry land grasses.

Griffiths 160 Tract -- This parcel also came from the Griffiths family in a land trade, and is also encumbered with a conservation easement that restricts farming activities. None of this tract is currently under cultivation. Vehicle access is limited by numerous deep irrigation ditches, wetland basins, and low, swampy areas. Substantial tailwater from neighboring flood irrigation flows through and pools on this property. Upland vegetation is predominantly tame grasses planted for livestock forage many years ago. Willow trees surround a site containing a deteriorated barn and corrals.

Figure 29. Aerial Map of the Griffith 160 Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Supplement water levels in basins from a head gate on D Canal and 2 headgates on 14D Canal while irrigating uplands.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Manage excess runoff from neighbors and leaky head gate when available for beneficial use.
- Repair and improve irrigation ditches for efficiency of management and conservation of soil and water resources over a 10-year period.
- Add culverts for use as water control structures and to improve administrative access over a 3-year period.

Food Plot Objective

- Under permit from USFWS, when grasslands require renovation, use a grain/fallow rotation for several years to prepare seedbed for planting new nesting cover.

- Maintain food plots, if permitted, to fill a void on the landscape where grain is not regularly available.

Nesting Cover Objective

- Maintain healthy stands of nesting habitat for ground-nesting birds.
- Invigorate grasses and suppress weeds with irrigation, haying, and spraying.

Herak/Myhre Tract -- Two adjacent 80 acre parcels were purchased from the namesakes of this tract and the fence that separated them was removed. It is the only WMA tract that is not contiguous, but is ecologically connected to the rest of the WMA by a half mile of WPA. Distance to travel with WMA equipment, topography, and wetland density limit its suitability for farming. It has numerous natural and enhanced wetlands of various sizes surrounded by tame forage grass species planted long before the land became WMA. Additional potential wetland development sites have been surveyed and impoundments designed by Ducks Unlimited engineers.

Figure 30. Aerial Map of the Herak/Myhre Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.

- Fill potholes with water from a head gate on D-Canal and 2 headgates on 24D while irrigating uplands.

- Install culverts, add fill material to existing culverts, repair broken-down ditch banks, and clean ditches to improve efficiency of system, conserve water, and reduce soil erosion.

Food Plot Objective

- Maintain various size fields of grain covering about 15% of the tract to feed pheasants, accommodate large flocks of waterfowl, and improve hunting opportunities.

- Maintain 2 existing food plots and establish several new ones in 1-5 years.

Nesting Cover Objectives

- Provide up to 40 acres (67% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Invigorate nesting cover by spraying noxious weeds, irrigating suitable sites during wetland recharge activities (after peak nesting season), and clipping weedy areas that cannot be sprayed.

Woody Cover Objective

- Provide durable cover as security and emergency winter food for pheasants.

- Plant thickets and/or hedgerows of shrubs in 5-10 years.

Charlo Unit

The Charlo Unit is composed of the Palmer, Dike 80, Stockstad, Davis, Senator Wallace, Headquarters, Short-eared, Ringneck Ranch, and Allen Tracts. This unit is bounded by Highway 212, 2 private properties, Logan Road, SW Pasture Unit, Olsen Road, Ninepipe Road, private property, and Ninepipe NWR. About half of the unit has been under FWP management for 6 decades and the other half for 20 years or less. Six private in-holdings occur within this unit.

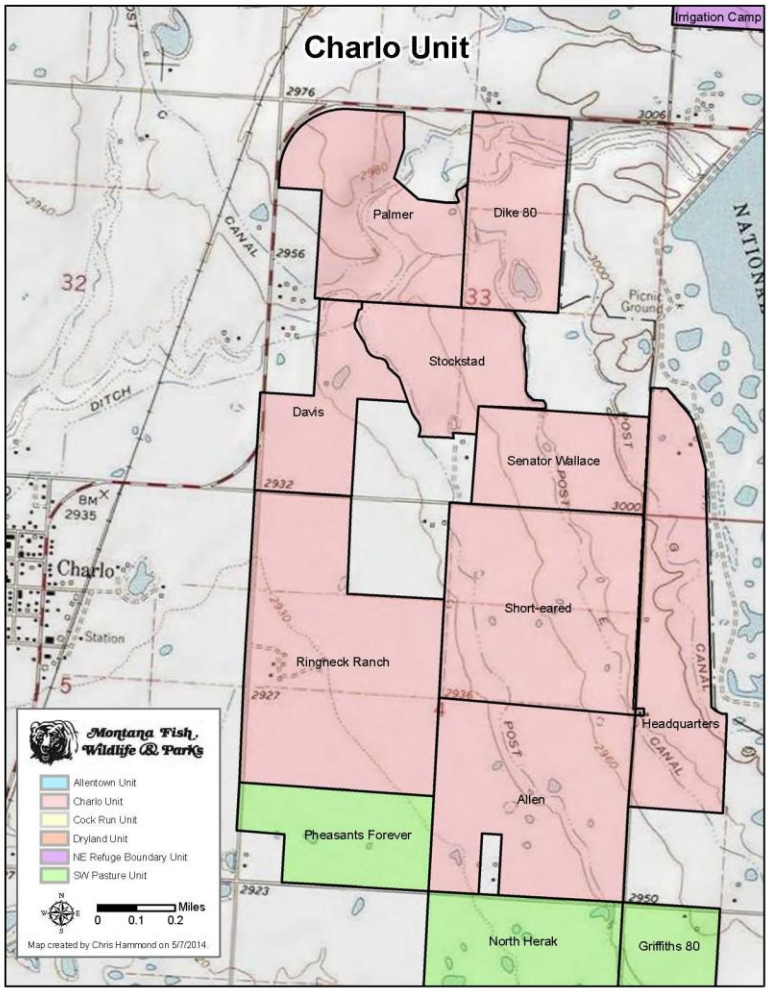


Figure 31. Topographic Map of the Charlo Management Unit and Management Tracts on Ninepipe WMA.

Table 6. Size and percentage of wetland, farmable, currently farmed, and other acreage by Management Tract within the Charlo Unit.

Tract Name	Area	Wetland		Farmable		Farmed (2013)		Other	
	Acres	Acres	%	Acres	%	Acres	%	Acres	%
Palmer	105	2	2%	60	57%	0	0%	43	41%
Dike 80	80	17	21%	30	38%	12	40%	33	41%
Stockstad	69	2	3%	30	43%	4	13%	37	54%
Davis	65	11	17%	30	46%	0	0%	24	37%
Senator Wallace	71	3	4%	45	63%	15	33%	23	32%
Headquarters	122	4	3%	60	49%	8	13%	58	48%
Short-eared	164	7	4%	100	61%	14	14%	57	35%
Ringneck Ranch	201	99	49%	70	35%	25	36%	32	16%
Allen	152	10	7%	100	66%	17	17%	42	28%
TOTAL	1029	155	15%	525	51%	95	18%	349	34%

Palmer Tract -- This tract was under longtime ownership of the Palmer family prior to acquisition by FWP. It has the most of what could be classified riparian habitat due to all of the woody cover that Mr. Palmer planted along canals and a wet draw on the tract. Most of the herbaceous vegetation is in hay fields that were planted prior to acquisition by FWP. None of this tract is under cultivation although it is relatively good farm ground and moderately accessible with WMA equipment. Nesting cover was planted in 2012 and 2013.

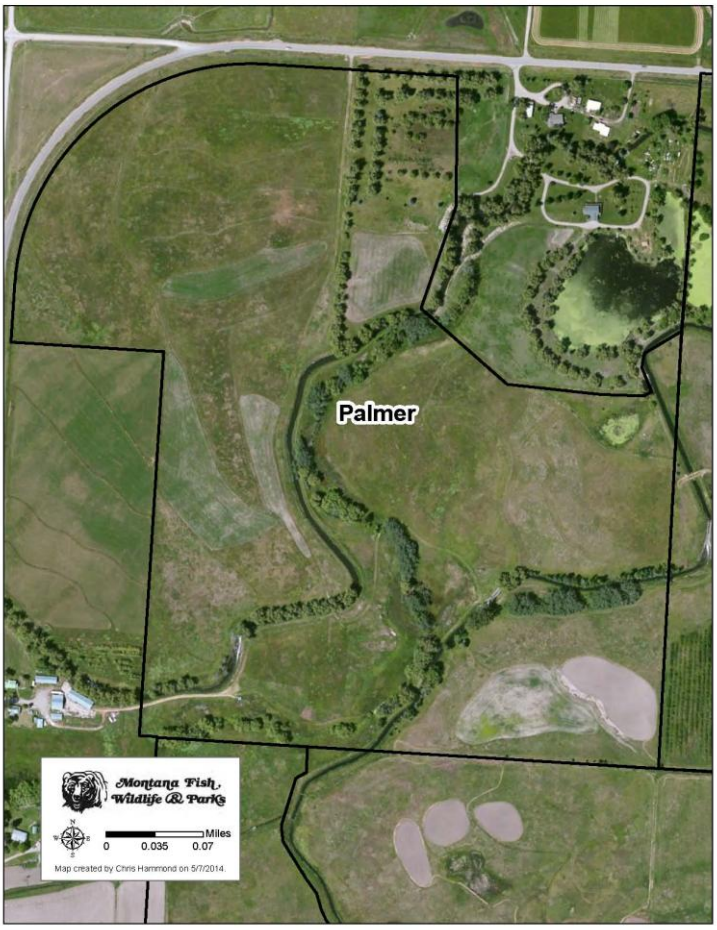


Figure 32. Aerial Map of the Palmer Management Tract on Ninepipe WMA.

Wetland Objective

- Provide shallow wetlands to serve as pair habitat and feeding sites for ducks.
- Keep single remaining wetland basin charged in spring and fall in 4 of 5 years from head gate on D Canal.
- Work with partners to construct wetland basin that was surveyed and designed by Ducks Unlimited engineers.

- Improve and maintain flood irrigation system by cleaning ditches, reinforcing ditch banks, and installing culverts within 1-3 years.

Food Plot Objective

- Improve year-round attractiveness to wildlife by developing and maintaining food plots on up to 5% of the tract.
- Create 3-5 acres of grain on 4 plots.

Nesting Cover Objective

- Provide up to 55 acres (92% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Keep grasses in vigorous condition with haying, irrigating, and weed spraying.
- Renovate suitable sites by using a rotation of grain/fallow to prepare clean seedbed.

Pheasant Brood Habitat Objective

- Annually provide sod-free, moist soil during the pheasant brood-rearing season to promote production of invertebrates.
- Install a water control structure on existing brood strip in 2014 to alleviate constant flooding that promotes cattail domination.

Dike 80 Tract -- For much of the history of the WMA, this was an isolated 80-acre parcel below the dike impounding the Ninepipe Reservoir. It has natural and enhanced wetlands. The first known nesting of Trumpeter Swans since the species was reintroduced into the Mission Valley occurred on this tract. Although field sizes are relatively small it is well-suited to farming and relatively easy to access with WMA equipment due to its proximity to headquarters. Nesting cover was planted in 1984, 1985, 1987, 1990, and 1991.

Figure 33. Aerial Map of the Dike 80 Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Use water that reaches the end of G Canal to supplement natural water levels in basins when possible.
- Fill one wetland with head gate on E Canal.
- Repair impoundment dikes within 5 years.
- Improve irrigation delivery by cleaning and repairing ditches annually as needed.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 10% of its area to feed pheasants and waterfowl and improve hunting opportunities.
- Use rotation of food plots/fallow to prepare sites to plant nesting cover.

Nesting Cover Objective

- Provide up to 20 acres (67% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Invigorate nesting cover with clipping, spraying, and burning.
- Renovate decadent grasses with grain/fallow cycle to prepare clean seedbed.

Pheasant Brood Habitat Objective

- Maintain moist soil/early succession vegetation in late spring through summer.
- Operate solar powered pump brood strips annually from May-September.

Stockstad Tract -- This tract is named for a previous owner and one-time manager of the WMA. Its prior use as irrigated pasture is a strong influence on its current condition, with a few small food plots added since on drier, weedier sites. Most wetlands on the tract are restorations or enhancements developed by Mr. Stockstad. Much of the land is fairly well suited for farming and access to WMA equipment is relatively easy due to its location although some wet areas impede travel.

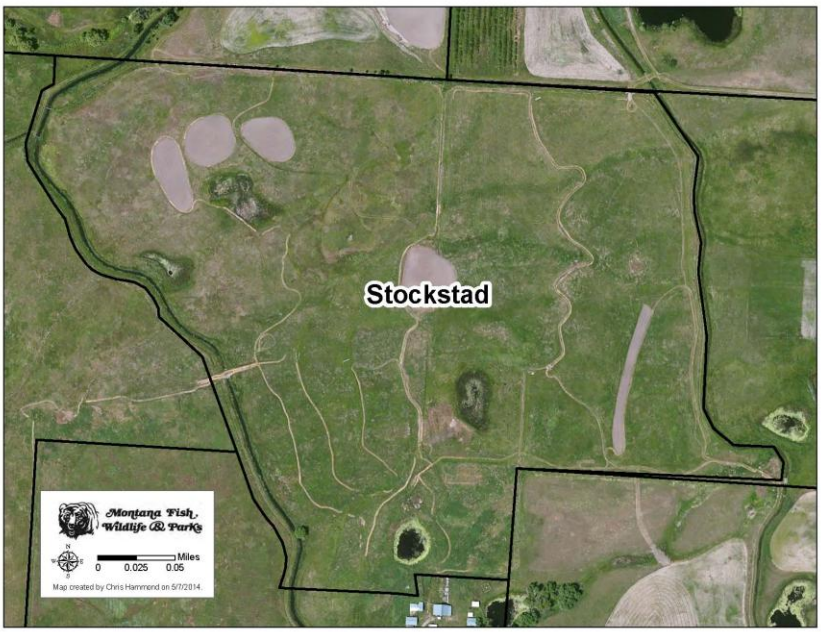


Figure 34. Aerial Map of the Stockstad Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Add irrigation water to wetlands from head gate on E Canal while irrigating uplands.
- Collect water in basins while irrigating uplands.
- Repair and maintain ditches annually and add culverts over a 3-year period.
- Construct wetlands surveyed and designed by Ducks Unlimited engineers within 5-10 years.
- Coordinate with partners on wetland restoration and enhancement projects.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 10% of its area to feed pheasants and waterfowl and improve hunting opportunities.
- Expand number of food plots to 10-12 and total acreage to 10-15 acres.

Nesting Cover Objective

- Provide up to 20 acres (67% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Invigorate vegetation with irrigation while filling wetlands after peak of nesting season.
- Renovate decadent stands by preparing seedbed with crop/fallow rotation.

Davis Tract -- This tract is named after previous owners. Upland vegetation is grass planted for hay and pasture. A constructed wetland and a partially drained wetland occur on the tract. The ground is mostly well-suited for farming and is readily accessible to WMA equipment.

Figure 35. Aerial Map of the Davis Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl and shorebirds, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Collect water from head gate on D Canal in basins while irrigating uplands.
- Repair and maintain ditches annually.
- Add culverts and erosion checks within a 5-year period.
- Develop collection system for tail water of neighbor in 2014-2015.
- Expand partially drained wetland with control structure and fill as designed by Ducks Unlimited engineers.

- Contour shallows and edges of Lake LaMar in 2-5 year period to improve habitat for dabbling ducks and shorebirds.

Food Plot Objective

- Expand overall wildlife potential by developing food plots. Provide several food plots on this tract covering about 5% of its area to feed pheasants and waterfowl and improve hunting opportunities.

- Within 3 years, develop 2-4 food plots to produce 3-6 acres of grain annually.

Nesting Cover Objective

- Provide up to 30 acres (100% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Keep grasses in vigorous condition with haying, irrigating, and weed spraying.

Senator Wallace Tract -- A state senator named Wallace previously owned this tract. The political office distinction was added to avoid confusion with other land acquired from the Wallace Gun Club of Idaho. It contains several natural and enhanced wetlands. The ground is well-suited for farming and it is close to headquarters for easy access by WMA equipment. Nesting cover was planted in 1985, 1988, 1997, 2001, 2002, 2003, and 2012.

Figure 36. Aerial Map of the Senator Wallace Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Add water to several basins from a head gate on G-Canal.
- Improve and increase irrigation ditches to increase efficiency of wetland management within 5-10 years.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 15% of its area to feed pheasants and waterfowl and improve hunting opportunities.

Nesting Cover Objective

- Provide up to 35 acres (78% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Convert decadent sections of nesting cover into food plots until seedbed is well-prepared to reseed nesting cover.
- Invigorate decadent and weedy stands with burning, spraying, and mowing.

Headquarters Tract -- The WMA headquarters area is on this tract, which is the only area of the WMA that is closed to hunting. This tract also contains goose pits, parallel to the NWR boundary, and the goose pit check station. A small inholding with an abandoned dwelling is on this tract. The tract has fair-good potential for farming and is very easy to access with WMA equipment. Nesting cover was planted in 1984, 1985, 1986, 1987, 1988, 1991, 1994, 2003, 2004, 2012, and 2013.

Figure 37. Aerial Map of the Headquarters Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Add water to 5 basins with flows from head gate on E-Canal and head gate on G-Canal.
- Use siphons for 3 wetlands.
- Clean and repair irrigation ditches to conserve water and increase efficiency of staff.
- Repair leaky dike on 1 impoundment in 5-10 years.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 10% of its area to feed pheasants and waterfowl and improve hunting opportunities.

- Provide abundant food annually situated far enough from NWR boundary to minimize loss of wounded birds.

Nesting Cover Objective

- Provide up to 50 acres (83% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.

- Renovate nesting cover through intervening rotation of grain/fallow to prepare seedbed.

- Invigorate nesting cover by mowing and spraying.

Short-eared Tract -- This is a common area to see Short-eared Owls. The SW Pasture Unit, which expanded the WMA adjacent to this tract after it was named, is also a common place to find these owls. Small wetlands on this tract were created or enhanced. Much of the upland is well-suited to farming and access by WMA equipment is quick and easy. Nesting cover was planted in 1985, 1986, 1987, 1988, 1995, 1996, 1997, 2002, 2011, and 2012.

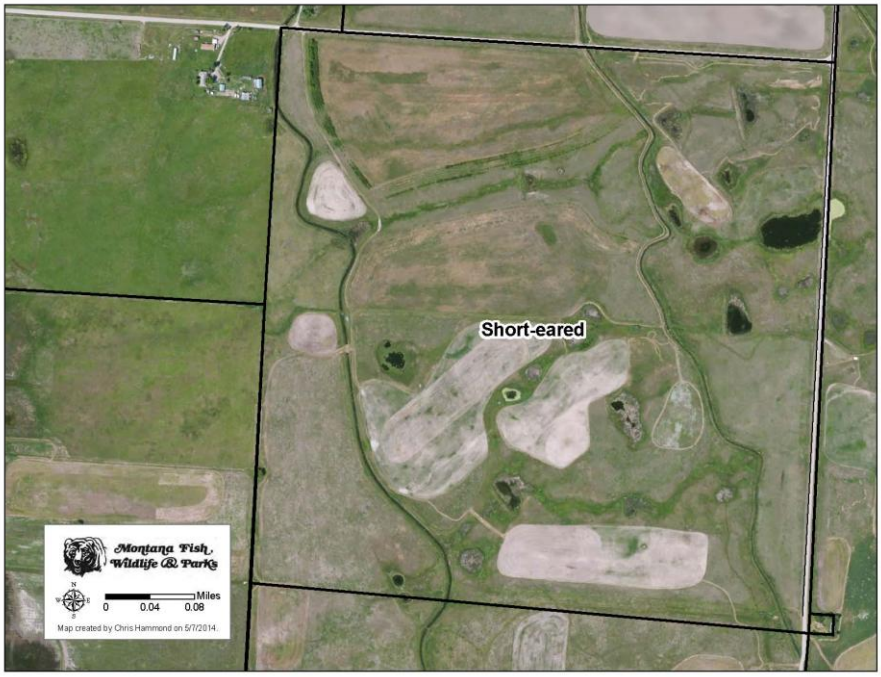


Figure 38. Aerial Map of the Short-eared Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Keep wetland in various stages of fill with irrigation flow from a head gate on E Canal and 2 headgates on G Canal.
- Clean and improve irrigation ditches.
- Install pipes to transport irrigation tailwater across D Canal for further use in 2-5 years.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 10% of its area to feed pheasants and waterfowl and improve hunting opportunities.

Nesting Cover Objective

- Provide up to 85 acres (85% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Invigorate nesting cover with clipping, spraying, and burning.
- Renovate decadent grasses with grain/fallow cycle to prepare clean seedbed.

Ringneck Ranch Tract -- The several individuals from whom this tract was purchased called it the Ringneck Ranch, their hobby farm and personal hunting area. A grain silo and equipment shed with electricity and running water, serve as a storage area for WMA equipment and materials, and a herbicide mixing area. All wetlands on this tract are created or modified, including two of the largest on the WMA which were constructed in 2010. Upland vegetation is mainly irrigated hay grasses on the north half and what has been planted by FWP on the south half after wetland construction was completed. The land is well-suited to farming and is relatively accessible to WMA equipment. Nesting cover was planted in 2007, 2010, 2011, 2012, and 2013.

Figure 39. Aerial Map of the Ringneck Ranch Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl and shorebirds, winter habitat for pheasants, and reliable hunting opportunities.
- Add water to wetland basins from 2 headgates on D-Canal while irrigating uplands and from overflow from Lake LaMar on the Davis tract.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Manipulate water inflows and outflows to provide habitat for nesting, brood-rearing, and migration stopover for waterfowl and shorebirds.
- Use drawdown and tillage to setback cattail and reed canary grass encroachment thereby maintaining habitat diversity.

- Restore and develop flood irrigation ditch system and install culverts where sprinkler system was located under previous ownership in 2014 and 2015.
- Clean and repair ditches annually.
- Remove willow trees near building site in 1-5 years.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 10% of its area to feed pheasants and waterfowl and improve hunting opportunities.

Nesting Cover Objective

- Provide up to 50 acres (71% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Manage grasses to maintain vigor and resist weed encroachment.
- Maintain vigor of nesting cover by irrigating, haying, clipping, and spraying.
- Add new plantings of grass/legume mix following grain/fallow rotation.

Pheasant Brood Habitat Objective

- Provide moist soil with early successional vegetation during brood-rearing period.
- Improve, expand, and maintain pheasant brood habitat.

Allen Tract -- This property was purchased by FWP from the Allen family, who used it as a sprinkler-irrigated grain farm. A private inholding on this tract is occupied with a dwelling and outbuildings. Wetlands that have been created or enhanced are scattered across the tract. It is well-suited to farming and is convenient to access by WMA equipment. Nesting cover was planted in 1994, 1995, 1996, 1997, 1999, 2001, 2002, 2003, 2012, and 2013.

Figure 40. Aerial Map of the Allen Management Tract on Ninepipe WMA.

Wetland Objective

- Provide diverse and productive habitat for reproductive and migratory needs of waterfowl, winter habitat for pheasants, and reliable hunting opportunities.
- Add water to wetlands from head gate on E-Canal while irrigating uplands.
- Apply scheduled dry out periods lasting a year or more in duration to individual wetlands to restore and maintain wetland productivity.
- Improve ditches in 2015-2016 and clean annually.

Food Plot Objective

- Provide food plots of various sizes scattered across this tract covering about 10% of its area to feed pheasants and waterfowl and improve hunting opportunities.

Nesting Cover Objective

- Provide up to 85 acres (85% of farmable acres) of a diverse mix of perennial herbaceous vegetation in a vigorous, weed resistant condition to serve as effective nesting cover for pheasants, ducks, and other ground-nesting birds.
- Maintain vigor in nesting cover with mowing, spraying, and irrigating.
- Renovate nesting cover by farming a rotation of grain/fallow to prepare seedbed for reseeding grass/legume blend.

Pheasant Brood Habitat Objective

- Maintain moist soil/early succession vegetation in late spring through summer.
- Annually operate solar powered pump brood strips from May through August.
- Improve and create additional brood habitat in 1-5 years by developing low berms to impound shallow water.

WEED MANAGEMENT

Management of noxious weeds on Ninepipe WMA is guided by Montana FWP's *Statewide Integrated Noxious Weed Management Plan* which was developed in accordance with *The Montana Weed Management Plan.* The Montana County Weed Control Act (7-22-2151 MCA) is the mechanism by which weeds are classified as "noxious". Invasive weeds, including many on the Montana Noxious Weed List (Appendix B), grow in the Mission Valley and on Ninepipe WMA.

Different weed species tend to be problems to varying extents on the various types of cover. Wetlands, croplands, managed grasslands, woodlands, and native prairie are prone to infestation by different suites of weeds, which require different management considerations and actions. The various weeds have different growth habits and chronologies that lead to a long weed management season and many types of treatment. Management actions must be applied judiciously because of the challenges of being environmentally sensitive around surface water, protecting desirable vegetation, and not conflicting with life history processes of wildlife. The large influx of bird hunters during the fall also limits the type and timing of herbicide applications on the WMA.

To prevent establishment and spread of weeds that may have been inadvertently brought in by WMA users and to reduce the risk of weeds from the WMA being transported elsewhere, weed control in parking lots and roadways is a high priority. Purchasing only weed-seed free seed for planting on the WMA also reduces the risk of introducing noxious weeds and regularly cleaning project vehicles and equipment limits weeds from being spread on WMA lands.

Management actions to reduce or eliminate weeds are prioritized based on where the individual weed is categorized on the noxious weed list, and to the specific threat each weed poses to the suitability of wildlife habitat and the potential to impact neighboring properties. Integrated management practices are employed to prevent, contain, reduce, and/or eradicate noxious weeds on WMA lands and prevent dispersal of weed seed from these lands. Throughout the growing season (and occasionally afterward) weeds are killed, suppressed, and the seeds removed and destroyed using all practical methods available.

Desirable perennial vegetation is maintained in a vigorous condition to prevent invasion by noxious weeds and competitively resist expansion of weed infestations. During the preparation of sites for food plots, weeds are controlled mechanically or chemically, and weeds growing in food plots are treated with herbicides.

Working cooperatively with adjacent landowners, Lake County Weed Board, USFWS, CSKT, and FIIP weed management on Ninepipe WMA is enhanced in controlling aquatic weeds and establishing biological weed control agents.

Management Goal – Use integrated management practices to prevent, contain, reduce, and/or eradicate noxious weeds on WMA lands and prevent dispersal of weed seed from these lands.

- Inventory and track weed infestations annually.
- Control noxious weeds along WMA roads and parking areas with chemicals to prevent establishment and spread of weeds that may have been brought in by WMA users. Spread of weeds has often been attributed to vehicles as they pass from one part of the state to another.
- Control noxious weeds in cropped fields, managed grasslands, native prairie, and wetland habitats.
- Control noxious weed infestations in a manner compatible with valley floodplain. Some chemicals cannot be used adjacent to water sources, and therefore weed control within the wetland margins and the river frontage will need to be applied accordingly.
- Work cooperatively with adjacent landowners and the County Weed Board to control weed infestations on Ninepipe WMA. Multiple landowners occur directly adjacent to the WMA. Any weed infestation on one landowner could easily spread to the next landowner, and therefore FWP will work cooperatively as a neighbor to help control weeds.
- Where feasible, use biocontrol agents to manage weeds where herbicide control is not possible.
- Enforce existing travel management.

INFRASTRUCTURE

Infrastructure of the WMA can be roughly categorized as administrative, habitat management, and public use. Shop, office, bunkhouse, and storage buildings are for administrative use. Irrigation improvements, farm access roads, and canal crossings primarily enable habitat management activities while parking areas, latrines, walk-thru fence gaps, signs, and goose pits are for public use. Fences can be included in any of the categories because they serve multiple uses.

Public use facilities (latrines, parking lots, and signs) experience regular damage from abuse and vandalism. Deterioration of these facilities over time also contributes to the need for annual maintenance. Farm access roads, particularly those used regularly by irrigation project employees, often need servicing, and the irrigation delivery system needs regular maintenance due to natural processes, unrelated management activities, and damage caused by animals and humans. Improvements to the water delivery system on most recently acquired properties are needed to improve efficiency and water and soil conservation.

Buildings

- The WMA Headquarters Office/Shop building is a 30'x70' structure built in 1978 by FWP that is now fully insulated and heated by 2 propane furnaces and 3 electric wall-heaters. Roof and siding are unpainted, raised-rib metal sheeting. Eight slider windows are energy efficient and in very good condition. The north half of the building contains a 138 sq ft office, a 26 sq ft bathroom, a 34 sq ft shower room, and a work stall accessed by a 16'x12' overhead garage door. A walk-in entrance is provided by a door into the office and one into the shop/restroom area. The south half, separated by a partition wall, has outdoor access provided by a walk-in door and two 16'x12' overhead garage doors. Most tools and shop equipment are located here, but shelves and tool racks are needed.

- The "Green Shed", built by FWP in 2004, is a 24'x40' wooden frame structure with a concrete floor. Drive-through access is available via two 18'x10' overhead garage doors. It has a walk-in door and a fixed pane window. The south side has an 8'x40' overhang shed roof. This building has raised-rib metal roofing and siding. It is uninsulated and unheated, but has electric lights and outlets. Vehicles, small equipment, power tools, and construction materials are stored here. Racks and shelves for fencing tools and materials and for spare parts for implements are needed.

- The Bunkhouse or Joe Ball Wildlife Research Station was acquired as the Kramer Residence when purchased by the state in 1958. The house was built in 1927 and an addition (kitchen and utility room) was built by FWP in 1964, and the building then served as WMA manager residence for about 20 years. With the Montana Cooperative Wildlife Research Unit, Dr. Joe Ball acquired resources then to improve the building which served as a bunkhouse for numerous graduate student researchers and their field crews working on the WMA for another 20 years. Its most recent use has been for temporary housing for researchers and as a meeting space. The structure is relatively sound and in good working order, with the exception of the heating and septic systems. A new water heater is also needed. The rock fireplace and chimney should not be used.

- The Old Garage is located behind the Bunkhouse with a similar history of use by the original owner, the one-time manager, and student researchers. It is 28'x24' in size, with 2

overlapping 10’x8’sliding garage doors. It is not in great shape, but is a functional, weather-tight storage space for smaller equipment.

- There are two 1,000 bushel grain bins next to the Office/Shop that serve as storage for various loose and/or bagged seed.
- The Check Station or Pit Shack is a 10’x16’ building that at one time had a fuel oil stove and electric lights and was staffed during the goose season. It is where hunters sign-in for goose pits and has racks where brochures about hunting on the WMA are available.
- The Blue Shed is a 40’x60’ building that was acquired with the Ringneck Ranch Tract in 2004. It is an uninsulated, metal-skin building with a concrete floor. The roof was coated with a vinyl sealant in 2014. It has a walk-in door and 20’x14’ drive-in double slider garage doors. FWP improved the lighting and electrical system and moved in pump controls for an outdoor hydrant after the existing pump house was destroyed by fire in 2007.
- A 3,500 bushel grain bin near the Blue Shed is used for seed storage.
- There are four (4) public outhouses on the WMA; 1 at the Check Station, 1 at the Family Fishing Pond, and 2 at the parking lot near the Birding Blind.

Maintenance costs for Ninepipe buildings are estimated to be $10,000 to $25,000 for the next 10-year period. Improvements or unanticipated repairs could equal that amount.

Fences

Approximately 25 miles of fence exist on the WMA along roadsides and property boundaries. Construction designs vary in the type of posts and wire. Barbed wire is most common on boundary fences, although some of these fences have a barbless bottom wire. Roadside fences are combinations of barbed, barbless, and woven wire. Most recently constructed fences are 3-strand barbless wire that is wildlife-friendly and very easy for people to get over or through. Roadside fences are important to deter vehicle access and to delineate where hunting is and is not allowed. Some fences serve no useful purpose and are obstacles that should be removed.

- Remove woven wire fence along roadside and replace, where needed, with one more permeable to wildlife and recreationists.
- Remove fence near private parcel that interferes with access to irrigation ditch and E Canal within 5 years.
- Inspect and repair fence annually with priority being where neighbors graze livestock.

Costs beyond what may be undertaken by WMA staff to rebuild, repair, and remove fences are estimated to be approximately $20,000 to $30,000 in the next 10-year period.

Administrative Roads

A complex of roads and trails traverse the WMA. In some areas the road systems are permanent, while in other areas the roads are not permanent.

- Install culverts where roads cross ditches and perpetual mud holes over a 5-year period.
- Improve railroad-track bridge on the Palmer Tract to minimize fall-through hazard to quadrupeds within 2 years.
- Add 20-60 cubic yards of gravel to administrative access roads every 3-5 years.
- Improve access points from roads at several sites within 5 years.

Estimated cost for the next 10-year period to maintain and repair administrative roads is $8,000 to $15,000.

Water Management

Management of water resources is dependent upon a complex of canals, headgates, distribution ditches, check dams, junction boxes, culverts, dikes, and water level control structures. The irrigation district is responsible for maintenance and operation of canals and headgates that deliver water to WMA lands where it then becomes the total responsibility of FWP. On some tracts, ditches were constructed specifically for wetland management. On other tracts, they were constructed for the efficient irrigation of uplands, but can function for direct delivery to wetland basins or indirectly supplement wetland levels with tail water following upland irrigation. Permanent structures (with mechanical gates or culverts that can be easily blocked) are used to direct water into different ditches or to spill water out into uplands. Movable canvas dam are the primary means to divert water out of ditches.

- Ditches - Total length of ditches has not been quantified but probably is in the range of 30-50 miles. Ditches that are overgrown with vegetation, disrupted by vehicle crossings, or caved in by animal activity or gravity are inefficient and must be cleaned regularly. Mechanical or chemical treatment of vegetation or mechanical reshaping with a ditcher or backhoe is required in many instances.
- Culverts - Ditch crossings and water control structures in numerous locations are used to direct water within the irrigation system and allow vehicles to easily cross.
- Dikes - 84 manmade dikes need annual inspection and occasional maintenance. Clipping vegetation reduces burrowing and promotes sod growth thereby reducing erosion.

Much of the annual maintenance and repair of the water management system is expected to be absorbed by the annual WMA operations budget. Additional repairs and improvements are estimated to be $15,000 to $40,000 over the next 10-year period.

PUBLIC RECREATION

The Ninepipe WMA provides topnotch waterfowl and pheasant hunting opportunities. It is a very good place for duck and goose hunting and possibly the best place for public hunting of wild pheasant west of the Continental Divide in Montana. The WMA also provides additional year-round wildlife-related recreational opportunities such as bird watching and wildlife photography. It also supports other outdoor pursuits including muskrat trapping, cross-country skiing, ice skating, biking, horseback riding, fishing, hiking, and dog training.

The WMA offers free and easy accessibility, relative safety, and a reasonable opportunity for a satisfactory experience for all recreating publics. Non-commercial uses that do not conflict with the primary wildlife habitat goals of the WMA, including hunting of waterfowl and pheasants, or with laws and FWP regulations and policies are permitted. Parking areas are well-distributed around the WMA and walk-through fence gaps along all public roads make the land very accessible. Goose pits (hunting blinds) for waterfowl hunting are located both west and northeast of the NWR boundary. A family fishing pond and a paved trail with interpretative panels was developed in cooperation with the USFWS and CSKT. A bird watching blind was constructed by a group from St. Ignatius MT (Mission 2000) with funding secured from the Montana Office of Tourism.

Regulations

Commission rules regarding public use of all WMAs statewide are adopted/revised on a biennial schedule (http://fwp.mt.gov/fishAndWildlife/wma). As a general objective, public access to the WMA is intended to be as uncomplicated as possible with the intent of supporting public enjoyment opportunities so long as they do not conflict with FWP rules or the primary purposes of the WMA. Necessary restrictions include no use of motor vehicles off identified routes, seasonal leash rule for dogs, and no fires.

NONGAME AND SPECIES OF CONCERN CONSERVATION

Information gathered from wildlife surveys and monitoring in the Mission Valley prior to the state acquiring land at Ninepipe was instrumental in the origination of the WMA. Early records show that one purpose of the acquisition was to serve as a study area to research waterfowl management problems. Monitoring populations and habitat utilization has occurred off and on

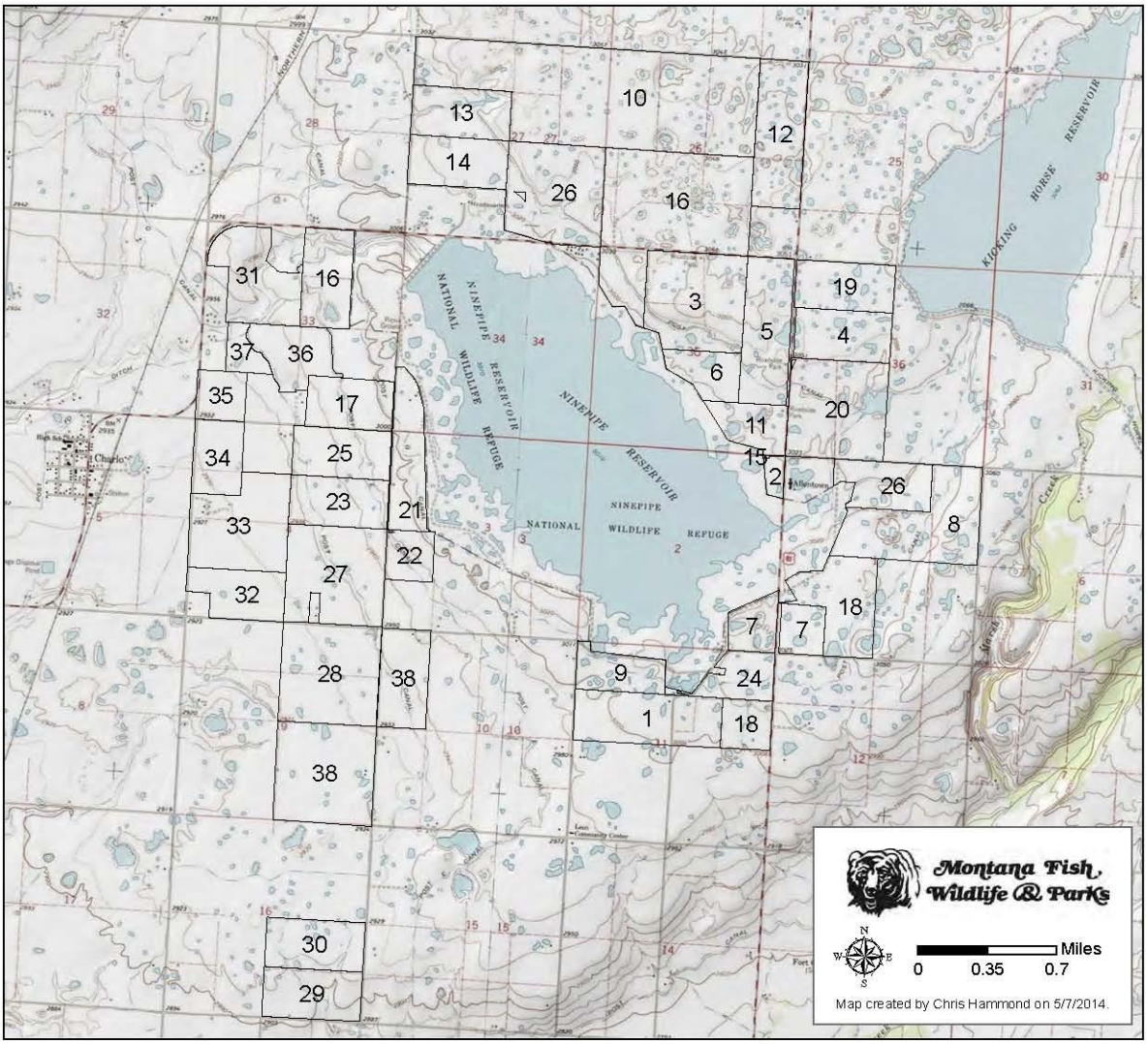
through the years, with the most recent and most concentrated efforts happening in the mid-1980s until the early 2000s with numerous graduate research projects (Appendix C).

General effects of habitat management activities on the WMA primarily have been deduced from experiences of others locally or elsewhere and by making inferences base on casual observations. Time and expense required for measuring effects of management are beyond the scope of the program as it now exists. Limited projects to answer specific research questions are feasible through the universities and FWP programs and have been conducted in the past (Appendix C).

More recently, FWP staff began conducting annual nongame inventory and monitoring projects on the WMA. Although observations are collected on all nongame and species of concern (Appendix D), the primary focal species for inventory and monitoring include short-eared owls (species of greatest inventory need, FWP SWAP), long-billed curlews, shorebirds, waterbirds, and trumpeter swans. A main objective of the program is to locate nests so we can provide management buffers in farmed areas of the WMA, while it is less of a priority to determine clutch sizes and nest success. We put forth additional efforts to identify banded trumpeter swans so we can share that information with the CSKT Tribal Wildlife Management Program. In the short time that FWP has been monitoring nongame on the WMA, we have observed an increase in the number and diversity of shorebirds and waterbirds thanks to the creation of several large wetlands. We have also documented high variability in the number of short-eared owl nests located during surveys from year to year, as well as variety of predators that depredate owl nests.

- Continue annual inventory and monitoring of nongame species on the WMA.
- Inform WMA manager and staff of all known nest locations and provide a recommended buffer.
- Continue coordination with CSKT Tribal Wildlife Management Program on trumpeter swan monitoring and conservation efforts.
- Coordinate with partners on the Long-billed Curlew Initiative.
- Collaborate with partners to encourage sharing data across all agencies when applicable.
- Upload nongame observations into Montana Natural Heritage program annually.
- Manage water levels, where applicable and with appropriate timing, to create mudflats and very shallow water for migrating and nesting shorebirds and waterbirds.
- Manage water levels, where applicable and with appropriate timing, to create potential nesting sites for trumpeter swans.
- Where and when appropriate, coordinate with surrounding land management agencies for management activities (i.e. burning and grazing) that benefit some nongame species.

APPENDIX A - ACQUISITION HISTORY



Ninepipe WMA Acquistion History

Seller	Date	Acres	Seller	Date	Acres	Seller	Date	Acres
1 Cochran	5/23/53	120	**14** Adams	2/28/56	80	**27** Allen	11/5/93	155
2 Pederson	6/11/53	14	**15** Halm	6/22/56	1	**28** Herak	1/30/97	160
3 Mullins	7/22/53	156	**16** Green	12/21/56	360	**29** Herak et al	1/30/97	80
4 Kirsch	11/20/53	78	**17** Wallace/Walsh	12/21/56	70	**30** Myhre	3/20/97	80
5 Rufenach	3/26/54	115	**18** Jensen	3/20/57	136	**31** Palmer	8/23/01	106
6 Delaney	4/19/54	50	**19** DNRC	3/28/57	80	**32** Pheasants Forever	11/24/03	70
7 Fisher	3/8/54	72	**20** Martin/Johnson	11/15/57	160	**33** Torgerson et al	8/2/04	140
8 Schoonover	7/29/54	154	**21** Kramer	5/6/58	90	**34** Torgerson et al	1/21/05	60
9 Rosenbaum	9/4/54	55	**22** W Field Club	7/29/58	40	**35** Davis	10/25/06	39
10 Piedalue	11/3/54	480	**23**[b] Arlee/Phillip	10/10/58	40, 40	**36** Conservation Fund	10/31/06	70
11 Billings	4/2/55	51	**24** Morrison	12/21/61	52	**37** Davis	4/23/07	23
12 Blackman	4/28/55	106	**25** BLM	7/15/62	80	**38** Griffiths	12/30/09	240
13 Adams	2/28/56	80	**26** Sweeney	10/11/74	230			

[a] Acres rounded to nearest whole number.

[b] Due to labeling restrictions parcel number 23 accounts for 2 acquistions because of undivided interest in the land at the time of purchase.

APPENDIX B - MONTANA NOXIOUS WEED LIST

Montana Noxious Weed List
Effective: December 2013

PRIORITY 1A-These weeds are not present or have a very limited presence in Montana. Management criteria will require eradication if detected, education, and prevention:

(a) **Yellow starthistle** (*Centaurea solstitialis*)
(b) Dyer's woad *(Isatis tinctoria*)

PRIORITY 1B-These weeds have limited presence in Montana. Management criteria will require eradication or containment and education:

(a) Knotweed complex (*Polygonum cuspidatum, P. sachalinense, P. × bohemicum, Fallopia*
japonica, F. sachalinensis, F. × bohemica, Reynoutria japonica, R. sachalinensis, and R.× bohemica)
(b) **Purple loosestrife** (*Lythrum salicaria*)
(c) Rush skeletonweed (*Chondrilla juncea*)
(d) Scotch broom (*Cytisus scoparius*)

PRIORITY 2A-These weeds are common in isolated areas of Montana. Management criteria will require eradication or containment where less abundant. Management shall be prioritized by local weed districts:

(a) Tansy ragwort (*Senecio jacobaea, Jacobaea vulgaris*)
(b) Meadow hawkweed complex (*Hieracium caespitosum, H. praealturm, H. floridundum, and*
Pilosella caespitosa)
(c) Orange hawkweed (*Hieracium aurantiacum, Pilosella aurantiaca*)
(d) **Tall buttercup** (*Ranunculus acris*)
(e) Perennial pepperweed (*Lepidium latifolium*)
(f) **Yellowflag iris** (*Iris pseudacorus*)
(g) Blueweed (*Echium vulgare*)
(h) Hoary alyssum (*Berteroa incana*)

PRIORITY 2B-These weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containment where less abundant. Management shall be prioritized by local weed districts:

(a) **Canada thistle** (*Cirsium arvense*)
(b) **Field bindweed** (*Convolvulus arvensis*)
(c) **Leafy spurge** (*Euphorbia esula*)

(d) **Whitetop** (*Cardaria draba, Lepidium draba*)
(e) **Russian knapweed** (*Acroptilon repens, Rhaponticum repens*)
(f) **Spotted knapweed** (*Centaurea stoebe, C.maculosa*)
(g) Diffuse knapweed (*Centaurea diffusa*)
(h) **Dalmatian toadflax** (*Linaria dalmatica*)
(i) **St. Johnswort** (*Hypericum perforatum*)
(j) **Sulfur cinquefoil** (*Potentilla recta*)
(k) **Common tansy** (*Tanacetum vulgare*)
(l) **Oxeye daisy** (*Leucanthemum vulgare*)
(m) **Houndstongue** (*Cynoglossum officinale*)
(n) **Yellow toadflax** (*Linaria vulgaris*)
(o) Saltcedar (*Tamarix spp*.)
(p) Flowering rush (Butomus umbellatus)
(q) Eurasian watermilfoil (Myriophyllum spicatum)
(r) Curlyleaf pondweed (Potamogeton crispus)

PRIORITY 3 Regulated Plants: (NOT MONTANA LISTED NOXIOUS WEEDS)-These regulated plants have the potential to have significant negative impacts. The plant may not be intentionally spread or sold other than as a contaminant in agricultural products. The state recommends research, education and prevention to minimize the spread of the regulated plant.

- **Cheatgrass** (*Bromus tectorum*)
- Hydrilla (*Hydrilla verticillata*)
- **Russian olive** (*Elaeagnus angustifolia*)

Plants listed above in **bold letters** have been positively identified on the WMA; other listed species may also be growing undetected on the WMA. Yellow starthistle is believed have been eradicated from the WMA.

APPENDIX C - BIBLIOGRAPHY OF RESEARCH ON WMA

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APPENDIX D - OBSERVED SPECIES LIST FOR WMA

Note: These are species observed during surveys for short-eared owls, long-billed curlews, and shorebirds by FWP staff and do not represent a comprehensive species list of all species occurring on the WMA.

Birds

American Avocet
American Coot
American Crow
American Kestrel
American Robin
American Wigeon
Bald Eagle
Bank Swallow
Barn Swallow
Black-billed Magpie
Black-capped Chickadee
Black-necked Stilt
Blue-winged Teal
Brewer's Blackbird
Brown-headed Cowbird
Bufflehead
California Gull
Canada Goose
Caspian Tern
Cedar Waxwing
Cinnamon Teal
Cliff Swallow
Common Goldeneye
Common Raven
Common Yellowthroat
Cooper's Hawk
Double-crested Cormorant
Eastern Kingbird
Eurasian Wigeon
European Starling
Ferruginous Hawk
Gadwall Golden Eagle
Grasshopper Sparrow
Gray Partridge
Great Blue Heron
Great Egret
Great Horned Owl
Greater Yellowlegs
Green-winged Teal
Horned Grebe
House Sparrow
Killdeer
Long-billed Curlew
Long-eared Owl
Mallard
Mountain Bluebird
Northern Flicker
Northern Harrier
Northern Pintail
Northern Shoveler
Northern Waterthrush
Northern-Rough Winged Swallow
Osprey
Peregrine Falcon
Pied-billed Grebe
Raven
Redhead Red-tailed Hawk
Red-winged Blackbird
Ring-billed Gull
Ring-necked Duck
Ring-necked Pheasant
Rough-legged Hawk
Ruby-crowned Kinglet
Ruddy Duck
Sandhill Crane
Savannah Sparrow Short-eared Owl
Song Sparrow
Sora
Townsend's Warbler
Tree Swallow
Trumpeter Swan
Turkey Vulture
Vesper Sparrow
Western Kingbird
Western Meadowlark
Western Tanager
Western Wood-Pewee
White-faced Ibis
Wilson's Phalarope
Yellow Rumped Warbler
Yellow Warbler
Yellow-headed Blackbird

Mammals

Coyote
Deer Mouse
Grizzly Bear
Meadow Vole
Montane Vole
Porcupine
Raccoon
Red Fox
River Otter
Short-tailed Weasel
White-tailed Deer