

**NORTH DAKOTA DEPARTMENT OF
AGRICULTURE**



**NORTH DAKOTA ENDANGERED SPECIES
PROTECTION PLAN FOR PESTICIDES**

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NORTH DAKOTA DEPARTMENT OF AGRICULTURE



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NDDA personnel responsible for program administration are:

Jessica Orr*
Environmental Scientist
Telephone: 701-328-2980
Email: jnorr@nd.gov

Jim Gray
Pesticide, Feed, and Fertilizer Team Leader
Telephone: 701-328-1505
Email: jgray@nd.gov

Ken Junkert
Manager, Plant Industries
Telephone: 701-328-4756
Email: kjunkert@nd.gov

*Primary contact for Endangered Species program

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Acronyms

EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973
ESPP	EPA's Endangered Species Protection Plan
FRN	Federal Register Notice
FIFRA	Federal Insecticide Fungicide and Rodenticide Act
GIS	Geographic Information System
NDASS	North Dakota Agriculture Statistics Service
NDDA	North Dakota Department of Agriculture
NDSU extension service	North Dakota State University Extension Service
USFWS	United States Fish and Wildlife Service

INTRODUCTION

The North Dakota Department of Agriculture is committed to ensuring human safety and protecting the environment through the regulation of pesticide sales, distribution, storage and use. In addition, the department acknowledges the critical role that pesticides play in producing high quality food and controlling economically important pests.

Recently, concerns have been raised with how well government agencies regulating pesticides are protecting wildlife designated as threatened or endangered under the Endangered Species Act (ESA). In response to those concerns, the North Dakota Department of Agriculture (NDDA) is developing this plan to better protect threatened and endangered species (“listed” species) from pesticides.

The NDDA’s goal is to better protect the state’s listed species while minimizing the economic impact to agriculture. To facilitate this goal, NDDA has developed a state initiated endangered species protection plan to better assess and mitigate the risk of pesticides to the listed species found in North Dakota. NDDA believes that by providing geographically specific data on pesticides use and fate in the environment, the United State Environmental Protection Agency (EPA) will have the best available data to make sound scientific decisions. Furthermore, access by the EPA to these data will ensure that any measures to mitigate the risk of pesticide use to listed species will be both protective and reasonable.

The “North Dakota Endangered Species Protection Plan for Pesticides” has three main goals:

1. To supply the EPA with state specific information to use in risk assessments,
2. To provide a platform for stakeholders to offer input and recommendations, and
3. To help plan and implement mitigation and management plans, including Endangered Species Protection Bulletin (“Bulletins”)

NDDA’s goal is to develop a plan that is both protective of North Dakota listed species and reasonable for pesticide users.

BACKGROUND

Endangered Species in North Dakota

The United States Fish and Wildlife Service (USFWS) has listed seven species in North Dakota as threatened or endangered (hereafter called “listed”) under the federal Endangered Species Act (ESA) of 1973 (Table 1). The species include: three birds; piping plover (*Charadrius melodus*), least tern (*Sterna antillarum*) and whooping crane

(*Grus Americana*), two mammals; black-footed ferret (*Mustela nigripes*) and gray wolf (*Canis lupus*), one fish; pallid sturgeon (*Scaphirhynchus albus*) and one plant; western prairie-fringed orchid (*Plantanthera praeclara*).

Table 1. Threatened and Endangered Species of North Dakota

Species name	Common Name	Description	Status
<i>Charadrius melodus</i>	pipin plover	Bird	Threatened
<i>Sterna antillarum</i>	least tern	Bird	Endangered
<i>Grus Americana</i>	whooping crane	Bird	Endangered
<i>Mustela nigripes</i>	black-footed ferret	Mammal	Endangered
<i>Canis lupus</i>	gray wolf	Mammal	Threatened
<i>Scaphirhynchus albus</i>	pallid sturgeon	Fish	Endangered
<i>Plantanthera praeclara</i>	Western prairie fringed orchid	Plant	Threatened

The importance of North Dakota habitat varies widely amongst the seven listed species (Figure 1). Some of the species are found in only localized regions of the state, while others reside in North Dakota for only short periods of time each year.

Three of the seven listed species (black-footed ferrets, whooping cranes, and gray wolf) have limited distribution in North Dakota, and will therefore have limited focus in the North Dakota Endangered Species Protection Program. Black-footed ferrets have historic range and potential habitat in the southwestern region of the state (Figure 2). However, black-footed ferrets have not had a documented occurrence in the state for over thirty years. Whooping cranes have short stops statewide during migration in the spring (late April to mid-June and fall late September to mid-October) (Figure 3). During these migratory periods, whooping cranes reside in North Dakota for only a few weeks. Gray wolves are infrequent visitors to the state. Likely habitat for the gray wolf in North Dakota is the forested areas in north central and northeast North Dakota, however, they may appear anywhere (Figure 4). Gray wolves are only federally listed in the Western third of North Dakota.

While black-footed ferrets, whooping cranes, and gray wolves are federally-listed species and important components of certain ecosystems, their lack or limited distribution in the state will make it difficult or impossible to mitigate the risk of pesticides to them. In addition, our efforts would likely be better spent focusing on those species that are at higher risk of pesticide exposure in the state. Therefore, management efforts will be focused on listed species that are year-long residents and reproduce in the state.

Biology, distribution, and sensitivity of year-long resident listed species

Four listed species are year-long residents of North Dakota (pipin plover, least tern, pallid sturgeon and western prairie-fringed orchid), and these four will be the focal

species in the North Dakota Endangered Species Protection Program. All but the western prairie fringed orchid occur on the Missouri River system.

Least tern



(Photo by: USFWS/S. Maslowski)

Least terns are the smallest members of the gull and tern family. They are approximately 9” in length, with a black head, gray on the wings, back and tail with a white underside. Their tail is forked and the wings are narrow and pointed, making them very suitable for dramatic

dives while foraging for small fish, their primary food source. The birds breed from May to August in North Dakota and then migrate to the Gulf of Mexico and Caribbean for winter.

In North Dakota, least terns are found exclusively on the Missouri River system (Figure 5). They prefer sparsely vegetated sandbars, which have been reduced due to damming and channelization.

Piping plover



(Photo by: USFWS/Gene Nieminen)

Piping plovers are small shore birds measuring about 6 ½- 7” long. They are brown on their back, wings and top of their head with a white underside and distinctive black band across their chest and forehead. Piping plovers feed on open beaches on insects and small crustaceans. The

breeding season for piping plovers is April through August. After breeding the population migrates to the Gulf of Mexico.

Piping plovers are found on the Missouri River system and on alkali lakes in the northwest and central region of the state (Figure 6). Plovers are threatened by a loss of sandbars and water fluctuations due to damming on the Missouri River system. Nest predator increases in recent decades threaten the plovers on both the Missouri River and alkali lakes.

Little is known about the least tern and piping plover’s sensitivity to pesticides. Mierzykowski and Carr and Allen et al. did studies on a limited number of pesticides in piping plover and or least tern eggs in Maine and Oklahoma respectively (1998, 2004). Both examined eggs shells for organochlorines and inorganic elements. Pesticides were not found or were well below ecological effects levels.

Pallid sturgeon



(Photo by: U.S. Fish & Wildlife Service)

Pallid sturgeon are prehistoric fishes armored with rows of bony plates that run lengthwise from head to tail. They are a large grayish white fish weighing up to 80 pounds and living up to sixty years. Pallid sturgeon feed on insects, crustaceans and small fish. Pallid sturgeon do not reach sexual maturity until 7 to 12 years of age. There is no evidence of natural reproduction in the last fifty years, and it is believed that this lack of reproductive success is due to both a lack of spring river pulses that cue spawning and the existences of dams that cut off access to spawning grounds. Pallid sturgeon populations are currently augmented by artificial propagation.

Pallid sturgeon are found exclusively in the Missouri River system in North Dakota (Figure 7). They are adapted to large shallow rivers with gravel, sandbars and seasonal pulses, which is what the Missouri River was before widespread damming and stabilization efforts damaged pallid sturgeon habitat.

Little research has been done on the effects of pesticides on pallid sturgeon. Pallid sturgeon have a long egg maturation cycle, and Conte et al. suggested that this long cycle may make them susceptible to have pesticides concentrated in their eggs (1988). A study by Ruelle and Keenlyne in 1992 in North Dakota and Nebraska detected pesticides in tissue of pallid sturgeon, but the effects of these pesticide levels was unknown. The pesticides (chlordan, DDT, and dieldrin) found in the pallid sturgeon during the study are currently banned or cancelled. Research on white sturgeon shows that elevated pesticide levels in tissue is correlated with lower condition factors, gonadal abnormalities, and hermaphroditism (Feist et al. 2005).

Western prairie fringed orchid



(Photo by: U.S. Fish & Wildlife Service)

The western prairie-fringed orchid is a perennial plant with large white flowers that have fringes on the margins giving them a feathery appearance. The orchids grow up to three feet high. The orchid flowers in June and July and is pollinated by hawk moths.

The preferred habitat of the western prairie-fringed orchid is moist, tall grass prairie. The orchid occurs in two counties in the southeast corner of the state in remnant high quality prairie (Figure 8). The

conversion of prairie to cropland is the main reason for the orchid's decline. Herbicides may have negative effects on orchids, as may leafy spurge and other noxious weeds.

The issue of pesticides and western prairie-fringed orchids is complex because of the threat of leafy spurge invasion to orchid habitat. Herbicides may reduce leafy spurge but harm orchids; however, a study by Erickson (2006) showed that at least one type of herbicide is effective in controlling leafy spurge and does not harm orchids.

Agriculture in North Dakota

Agriculture is the most important sector of North Dakota's economy and number one industry. Production agriculture makes up to 25% of the state's economy, generating almost five billion dollars in cash receipts annually. A fourth of the jobs in the state are related to agriculture, and 89% of North Dakota land area is in farms and ranches.

Dynamic, diverse and constantly changing, agriculture is also important to our nation's economy and security. North Dakota leads the United States in the production of more than a dozen different commodities, including small grains, oilseeds and pulse crops.

North Dakota is divided into three main geographical and agricultural areas (Figure 9). Along North Dakota's eastern border is the Red River Valley. This valley was formed by sedimentation on the floor of Lake Agassiz which resulted in a flat, fertile, plain that is one of the world's richest agricultural production regions. A century ago, wheat was leading crop of the Red River Valley. Today, wheat is still important, but much of this land is now sown with edible beans, soybeans, potatoes, sugar beets and corn.

Moving west, the land turns into rolling prairie known as the prairie pothole or central coteau region. This area is covered by shallow wetlands formed by glaciers. Small grains like spring wheat, durum and barley dominate, but sunflowers and canola are also important. A newcomer to the central coteau region is corn. Once grown almost exclusively in the southeast corner of the state, corn is now raised almost everywhere, thanks to new drought-resistant varieties and to the demands of the state's rapidly growing biofuels industry.

West across the Missouri River, the landscape and the agriculture changes dramatically. This region is drier and less fertile. In the high plains of southwest North Dakota, cattle are the predominant form of agriculture. North Dakota's livestock industry is largely centered on cow-calf production, but also enjoys an enviable reputation for the quality of its purebred cattle. Due to significantly lower levels of precipitation in the western third of North Dakota than other parts of the state, many crops are grown in no-tillage or dry land production systems. Major crops in the west include wheat, flax, and safflower.

Pesticide use in North Dakota

When used properly, pesticides play an important role in managing pests without posing a risk of unreasonable adverse effects to human health or the environment. According to the last survey of ND pesticide users that occurred in 2004, pesticides are applied to over 20 million acres each year out of the 40 million acres in farmland in the state (Zollinger et al. 2004). Herbicides were applied one or more times to 48.6% of agricultural land in ND in 2004, while fungicides and insecticides were applied to 5.4% and 2.4% of agricultural land, respectively.

Pesticides are most frequently applied with ground application equipment. However, use of aerial application equipment is becoming more popular. According to statistics from the ND Aeronautics Commission, approximately 4.8 million acres received an aerial pesticide application in 2007.

The specific type of pesticide used in a given area depends on a variety of factors, including the crop grown, identity of the pest, level of infestation, economic considerations, and other factors that are considered as part of integrated pest management. In addition, as described in the above section, agriculture in North Dakota is generally divided into three main regions across the state. Therefore, the specific pesticides used in a given area are closely linked to the types of crops grown in that area. For example, predominant pesticides used in the Red River valley are those used on crops generally grown there, such as sugar beet, corn, soybean, and potatoes. In contrast, pesticides used in the central coteau are generally those used most widely on cereals, sunflower, and canola.

Federal Laws and Regulations

The North Dakota Plan for Threatened and Endangered Species must fit within federal regulations. For this reason, federal regulations pertinent to this plan are discussed below.

FIFRA

EPA has the authority to regulate the use and registration of pesticides through the Federal Insecticide Fungicide and Rodenticide Act (FIFRA). FIFRA requires that all pesticides be registered with EPA prior to their distribution and sale. FIFRA also prohibits the use of any registered pesticide in a manner that is inconsistent with the labeling. To register a pesticide, EPA must ensure that the pesticide does not pose an “unreasonable” risk to man or the environment taking into account the economic, social and environmental costs and benefits of the use of any pesticide”. This weighing of risks is known as the FIFRA risk/benefit standard.

ESA

EPA must comply with the Endangered Species Act (ESA) when registering or renewing pesticides. The ESA's purpose is to protect and promote the recovery of animal and plant species that are threatened or in danger of becoming extinct and to ensure that the critical habitat they depend on is not destroyed or adversely modified. Section 7 of the ESA mandates all federal agencies to ensure that all actions authorized, funded or carried out by those agencies are not likely to jeopardize the continued existence of a federally listed threatened or endangered species or their habitat. Through section 7, the EPA must ensure that their actions, including registration of pesticides will not jeopardize listed species.

ESA implementation under FIFRA

To comply with FIFRA the EPA must weigh the risks and benefits of a pesticide. However, to comply with the ESA, the EPA must ensure that its actions do not jeopardize listed species. To comply with both of these mandates, EPA has developed its Endangered Species Protection Program (ESPP).

The EPA ESPP has two main components. The first component is a revised consultation process that was developed by EPA in consultation with both the USFWS and NMFS to better assess the risk of pesticide uses to threatened and endangered species. Under this revised consultation process, EPA reviews all of its pesticide registration actions to ensure that the pesticide uses will not negatively impact listed species.

The second component of EPA's ESPP is the use of geographic-specific pesticide use restrictions to better protect listed species from certain pesticide uses. A cornerstone of the program is the use of Endangered Species Protection Bulletins that will be published for specific parishes or counties where there is appreciable risk of pesticides to listed species. Partnered with appropriate pesticide label language, the Bulletins are regarded as pesticide labeling, and thereby enforceable use restrictions. Pesticide users are able to access the Bulletins online or by calling a toll-free telephone number. Because Bulletins are distributed online, it is relatively quick and easy to change the restrictions.

State Pesticide Authority

The North Dakota Department of Agriculture is the lead pesticide regulatory agency in the state. Under the authority provided by North Dakota Century Code (N.D.C.C.) Chapter 19-18, no person may sell, offer for sale, distribute or transport any pesticide that has not been registered with the North Dakota Agriculture Commissioner. N.D.C.C. 19-18 also allows the Commissioner to review pesticide labeling to ensure that it adequately mitigates risk to human health and the environment. Under N.D.C.C. 19-18, the Commissioner can also request that a registrant report the amount of each registered pesticide sold, offered for sale, or distributed in the state.

The North Dakota Agriculture Commissioner is also responsible for enforcing N.D.C.C. 4-35. Together with the accompanying administrative rules found in Title 60 of the North

Dakota Administrative Code, N.D.C.C. 4-35 regulates pesticide use, storage, certification, and record-keeping.

Therefore, through the authority granted to the Agriculture Commissioner under both N.D.C.C. 4-35 and 19-18, the Department has authority to regulate pesticides to ensure that only registered pesticides are sold, offered for sale, distributed, or used in the state. The Department also has regulatory authority to ensure that pesticides are used according to product labeling, and that users and dealers comply with certification and record-keeping requirements.

State Roles

EPA recognizes that states are an integral part of the success of its Endangered Species Protection Plan (ESPP). Local, state and tribal situations may shape the effectiveness of different approaches to listed species protection. Therefore, EPA has given states and tribes the option to develop a state initiated plan. States and tribes may participate in the process at a wide spectrum of levels of involvement. A state could choose to do nothing except their obligations outlined in the Field Implementation Federal Register Notice (FRN) or they could develop a stand alone plan that would operate independently of EPA's registration process. In between these two options, states could supply EPA with relevant data and recommendations to aid the agency in better assessing the risk of pesticide uses to listed species, as well as developing effective risk mitigation measures. The state plans would initiate alternative strategies to protect listed species from pesticides for their state or tribe. The EPA could adopt the state plan as EPA policy in that jurisdiction.

If a state or tribe submits a state initiated plan to EPA, EPA will review the plan to see if the services will need to be consulted before EPA can approve the plan. After a thorough review, EPA will approve or disapprove the plan and notify the state or tribe of their actions.

How EPA conducts a risk assessment

To register a pesticide, EPA conducts a thorough review of the risk of that pesticide harming man or the environment. This review is done through one or several risk assessment models.

Risk assessment models allow scientists to predict the environmental fate of a pesticide in the environment without conducting extensive field studies. Data entered into the models typically include the pesticide use rate per acre, number of applications per year, interval between applications and application methods. If data are not available, EPA is conservative and assumes the maximum value for the parameter to err on the side of the listed species.

PROPOSED NORTH DAKOTA ENDANGERED SPECIES PROTECTION PLAN FOR PESTICIDES

The North Dakota Department of Agriculture believes the best way to serve the interests of the citizens of North Dakota would be to develop a state initiated plan for endangered species protection. A state initiated plan will help ensure that EPA has access to accurate and relevant pesticide use data, cropping information, and accurate information on the occurrence and distribution of listed species in the state. The Department also believes that a state-initiated plan will improve stakeholder buy-in and compliance by helping to ensure that any use restrictions are not only protective, but reasonable. Input from the state could also include state-specific risk assessments based on local soil types, weather conditions, or pesticide use patterns. Access to accurate and timely data will help to ensure that we develop a program that will be more protective of species than if there was limited state involvement.

The North Dakota State Initiated Management Plan for Endangered Species proposes a process for the NDDA to provide specific state-level data and recommendations to EPA to consider in risk assessment processes. Data on local use would make EPA's risk assessments more accurate. This greater accuracy would afford species greater protection while not putting unnecessary burden on pesticide users.

Components of North Dakota Endangered Species Protection Plan for Pesticides

It is NDDA's understanding that EPA will be assessing the potential for pesticides to negatively impact listed species. There will be opportunities for state input throughout this process, first as EPA seeks public comment on published ecological risk assessments during the pesticide registration, registration review, and re-registration processes, and second as EPA develops Bulletins and proposes use restrictions to better mitigate the risk of pesticides to listed species.

NDDA realizes that the quality of EPA's decisions on implementing measures to mitigate the risk of pesticides to listed species will be directly related to the quality of data that the EPA has available. Therefore, the NDDA requests the opportunity to supply EPA with data and recommendations on any pesticide uses or use restrictions that may impact North Dakota.

NDDA would provide EPA with specific data on pesticide use in North Dakota to be utilized in EPA's evaluations of pesticide risk to endangered species. In the next phase, NDDA would participate in the process of Bulletin development and mitigate pesticide restriction if necessary.

Phases of plan

The North Dakota Plan for Endangered Species Protection has three phases

1. Submission of state data to EPA
2. Development of risk mitigation measures
3. Bulletin development and outreach

Phase 1

Under Phase 1 of plan, the Department would supply EPA with relevant data that EPA can utilize as the Agency assesses the risk of certain uses to listed species. These data include:

- A. *Pesticide use data.* In conjunction with the ND Agriculture Statistics Service (NDASS), the NDSU Extension Service conducts a pesticide use survey of North Dakota agricultural pesticide users every four years. These data are critical as we assess what pesticides are used in the state, where they are used, and in what manner. The surveys are currently published with state-wide pesticide use estimates, but it is likely that the Department can refine existing statewide estimates down to a county-by-county basis. The Department commits to supply EPA with the most accurate estimates available on pesticide use in North Dakota. With access to refined and accurate pesticide use information, EPA can better assess exposure of listed species to a given pesticide and whether additional use restrictions are needed to mitigate risk.
- B. *Distribution & biology information on listed species.* If we are to assess the risk of pesticides to listed species in the most accurate manner, we need to know where each of the species are found in the state. We also need to know as much as possible about the biology of each species, including their habitat, feeding habits, migratory patterns, and distribution. This information is critical as the Agency conducts risk assessments. The Department commits to supply the Agency as much information as is available on the biology and distribution of the listed species in North Dakota.
- C. *Information on the overlap between pesticide use and listed species.* Estimating exposure of listed species to given pesticides is a critical component of any risk assessment. Based on existing knowledge of listed species distribution, cropping information, and pesticide use, the Department can estimate whether a given pesticide use is likely to occur in the same locations and times where listed species are found. Under Phase 1, the Department will provide EPA with information on the potential overlap of pesticide uses and endangered species habitat.
- D. *Cropping information.* North Dakota has very diverse agriculture. However, based on climatic and soil factors, certain crops are localized in

different parts of the state. Using existing data from the ND Agriculture Statistics Service, the Department can supply EPA with county-by-county estimates of where certain crops are grown. This is important since most pesticides are only used on certain crops. Information on which crops are grown in different parts of the state and in different counties will aid the Agency as it conducts risk assessments.

- E. *Environmental monitoring data.* The Department is working with partner state and federal agencies to conduct monitoring of surface water in North Dakota for pesticides. As we assess the potential for a given pesticide or pesticide class to move into surface water and other media, it would be advantageous to know whether those pesticides or similar chemistries have been detected in the environment at significant concentrations. This information will be critical as we identify those pesticide that have a potential to move off-site and negatively impact listed species. The Department commits to supply EPA with the best pesticide environmental monitoring data that is available.
- F. *Soil type information.* There are also significant differences in the soil types across North Dakota. Soil type can have a dramatic effect on a pesticide's environmental fate, affecting such things as sorption, degradation, and leaching. The Department has access to digitized soil type information for the state, and commits to make this information available to EPA.

The ND legislature provided state-funded resources to the Department to create an Endangered Species Protection Program. These funds were used to create two new positions in the Department, both of which have been filled. One of the positions is a Geographic Information Specialist (GIS) position, and this person has been compiling much of the data described here in a GIS database. These data can be supplied to EPA in a compiled and layered GIS database. However, the Department will supply EPA with relevant data in whatever format and manner that EPA requests it.

Phase 2

In addition to supplying the data described under Phase 1, the NDDA can supply EPA with recommendations on potential pesticide use limitations to better protect endangered and threatened species. Specifically, the Department will contribute recommendations on the technological, social and economic feasibility of implementing any proposed pesticide use limitations. Such input is essential since states understand the socioeconomic and political intricacies that exist within the state, as well as how to best change behaviors among its citizens.

The North Dakota Department of Agriculture has many years of experience in regulating pesticide users and dealers in North Dakota, and we have gained considerable insight not only on the culture and social environment within the state, but also in working with pesticide users to gain compliance with pesticide laws and regulations. Therefore, NDDA would also offer its recommendations on developing pesticide use restrictions that are enforceable and practical. Since NDDA is the lead pesticide regulatory agency in the state and will be the entity charged with enforcing any pesticide use restrictions developed through the ESPP, we feel that it is essential we have a role in developing the use restriction language.

In addition, NDDA has made a concerted effort to build a relationship of trust and mutual respect with the Bismarck field office of the U.S. Fish and Wildlife Service (USFWS). NDDA and USFWS staff have participated in numerous meetings with each other. USFWS is also given an opportunity to offer input on FIFRA Section 18 exemption requests before they are submitted to EPA for review, as well as every FIFRA Section 24(c) registration before it is issued. We value this relationship with USFWS, and we would anticipate that we would interact with local USFWS staff as part of developing recommendations to EPA. This close working relationship between the NDDA and local USFWS staff will be invaluable as we strategize on how to best protect listed species in ND from pesticides.

The Department hopes that there will be ample opportunities for state input as risk mitigation measures are developed, both on a formal and informal basis. We propose to offer recommendations on draft pesticide label language as well as proposed use restrictions to be included in Endangered Species Protection Bulletins (“Bulletins”).

Phase 3

A cornerstone of EPA’s ESPP will be the use of Bulletins that will add geographic-specific use restrictions beyond those on the product label whenever greater protection is needed. The Department fully supports the use of Bulletins as a means of providing greater protection of threatened and endangered species when such protection is needed. Such Bulletins will also allow pesticide regulators to accurately define those areas where use restrictions are required.

If Bulletins are necessary to better mitigate risk, NDDA offers its assistance in the development and review of those documents. Specifically, the Department will review the Bulletins for accuracy and to determine whether there are better means to identify those areas where the use restrictions are in effect. The NDDA could also provide digitized maps to the Agency and express landmarks in terms commonly used in the state. The Department also offers its expertise and experience to assist EPA in developing the language used in the Bulletins.

Once Bulletins are published, the NDDA will provide outreach and communication to pesticide dealers and applicators through a variety of means. NDDA already provides a link to the EPA ESPP website on the Department’s website

(<http://www.agdepartment.com/>). NDDA can also conduct targeted outreach and meetings in specific areas of the state or among certain pesticide user groups to better communicate the need to comply with Bulletins, how to access them, and the rationale used to develop the risk mitigation measures. NDDA staff can also discuss Bulletins at pesticide certification and training sessions, as well as other education opportunities.

SUMMARY

The North Dakota Department of Agriculture values the partnership that it has with the U.S. EPA as we regulate pesticides to mitigate risk to human health and the environment. We also recognize that pesticides are important management tools and an essential component of integrated pest management. We are confident and hopeful that state participation in EPA's ESPP will be extremely valuable. The Department hopes to provide EPA with the most timely and accurate data available, thereby allowing the Agency to make good decisions that are based on sound science. Access to accurate, local data on pesticide use, listed species distribution, cropping information, and soil types will allow EPA to better estimate exposure and conduct risk assessments. Furthermore, offering the NDDA the opportunity to offer recommendations on potential risk mitigation strategies will allow us to develop pesticide use restrictions that are not only protective of listed species, but also reasonable. Without maintaining a high level of reasoning, gaining buy-in (and more importantly, compliance) from the pesticide user community will be extremely difficult.

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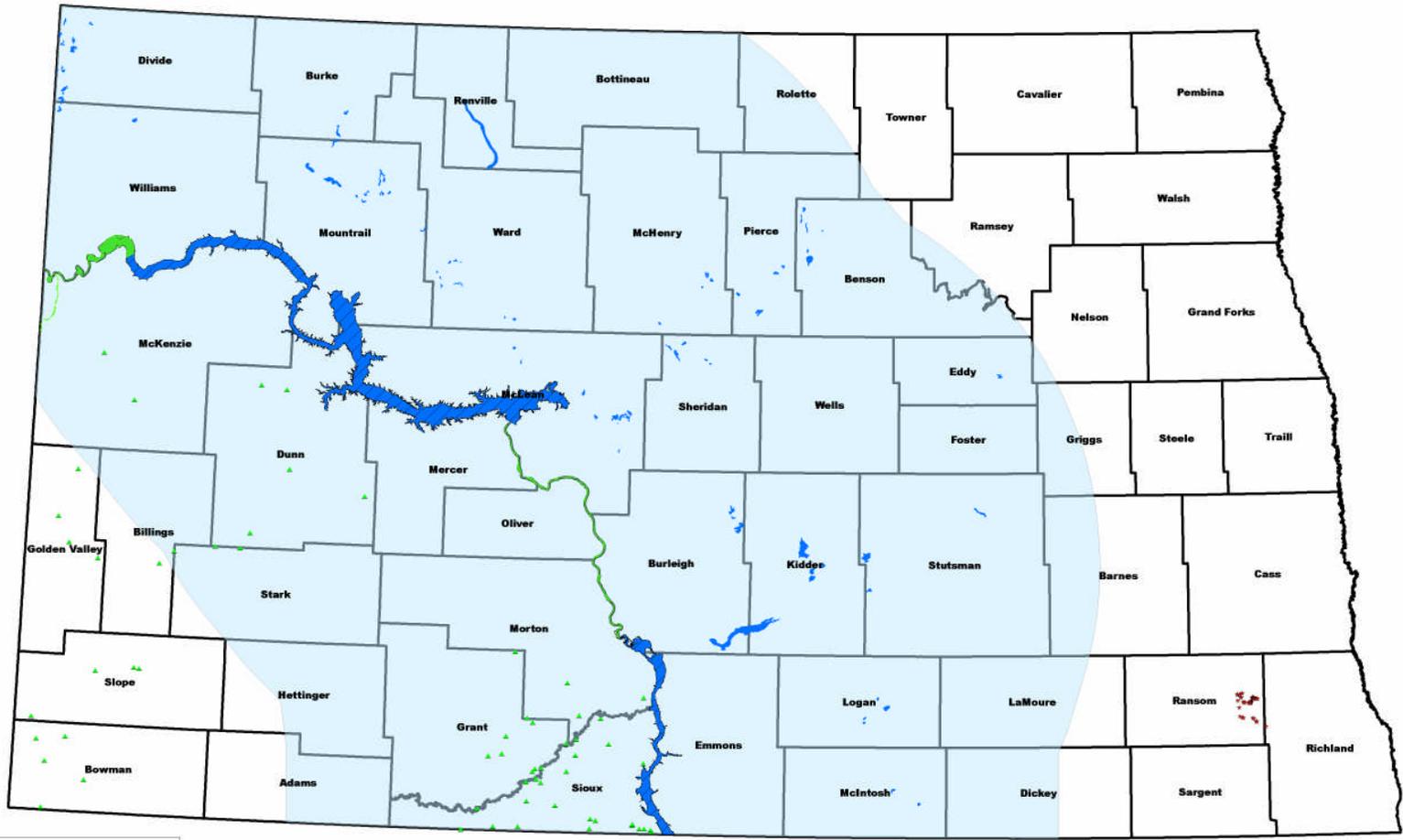


Figure 1. Endangered Species Habitat in North Dakota

Map prepared by C. G. Olson, North Dakota Department of Game and Parks, 2010

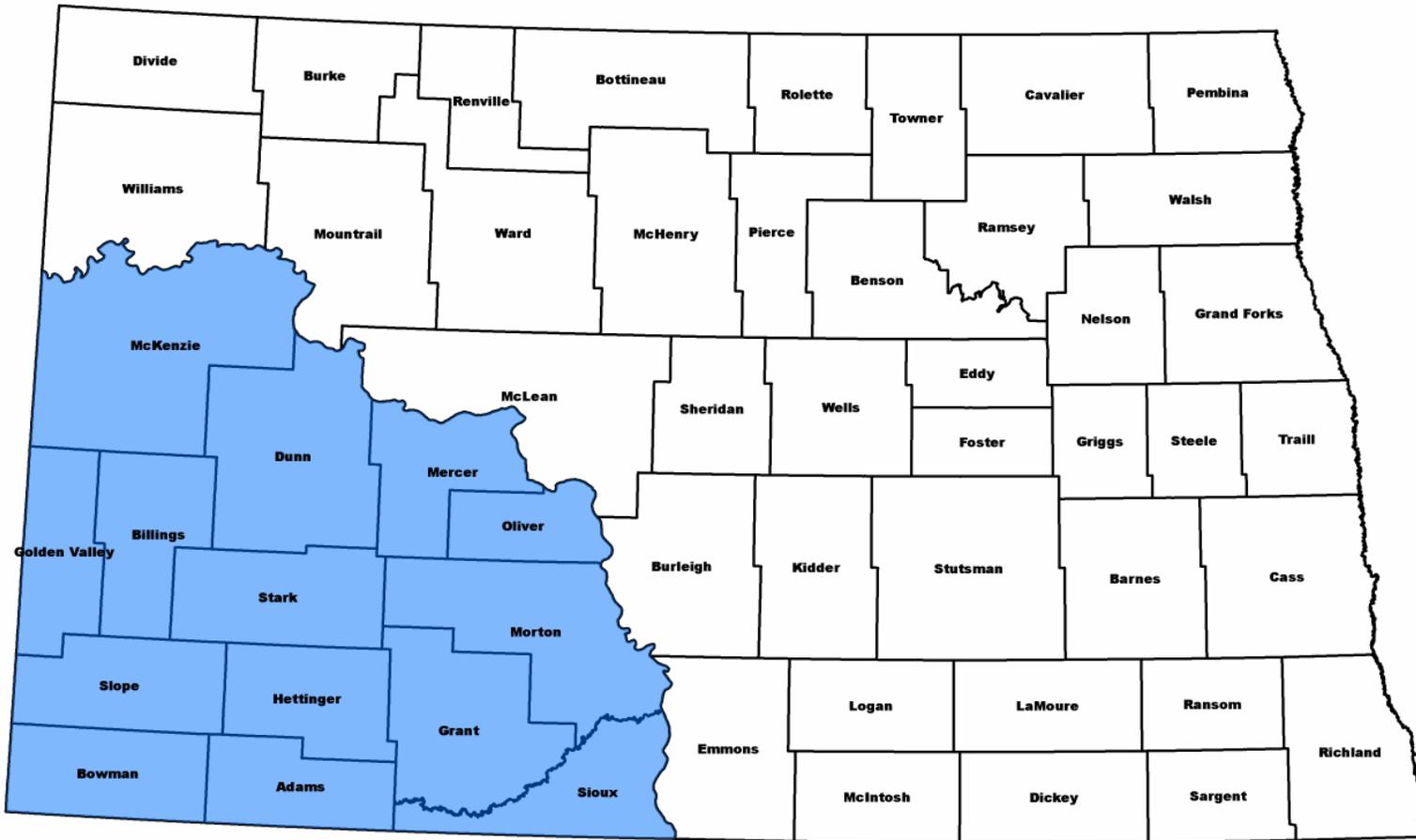


Figure 2. Potential Black Footed Ferret Habitat in North Dakota

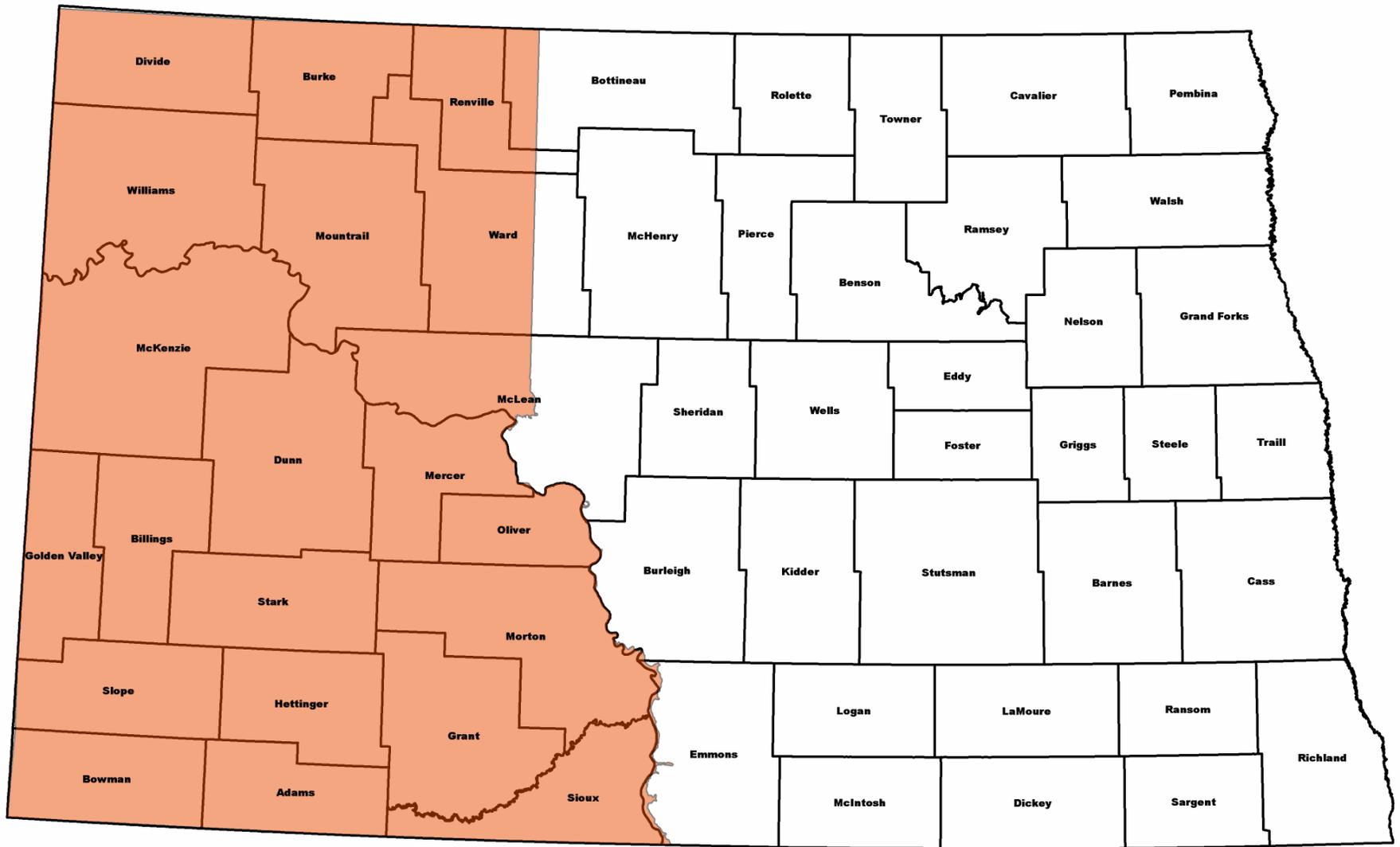


Figure 4. Gray Wolf Endangered Area

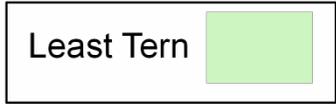
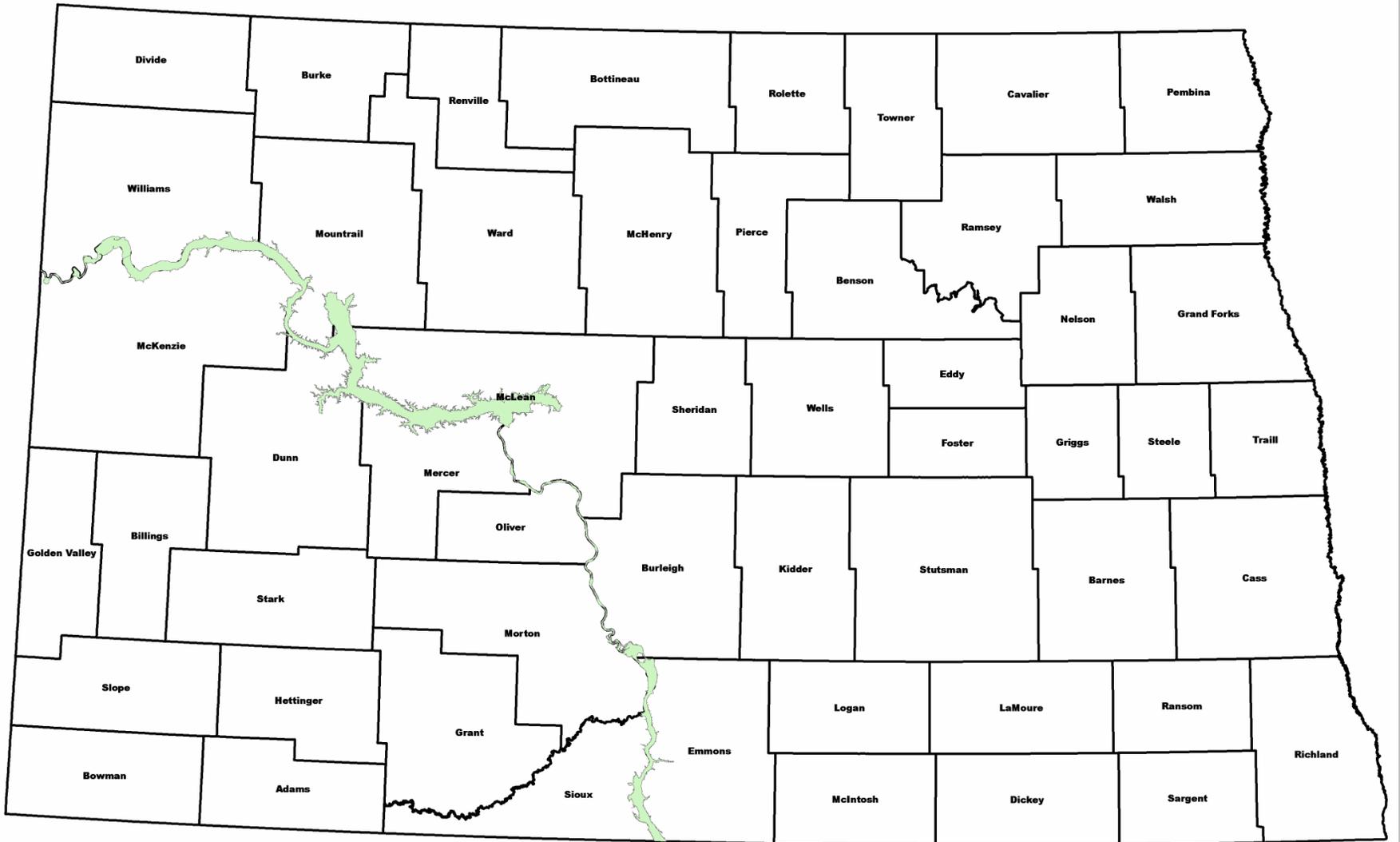
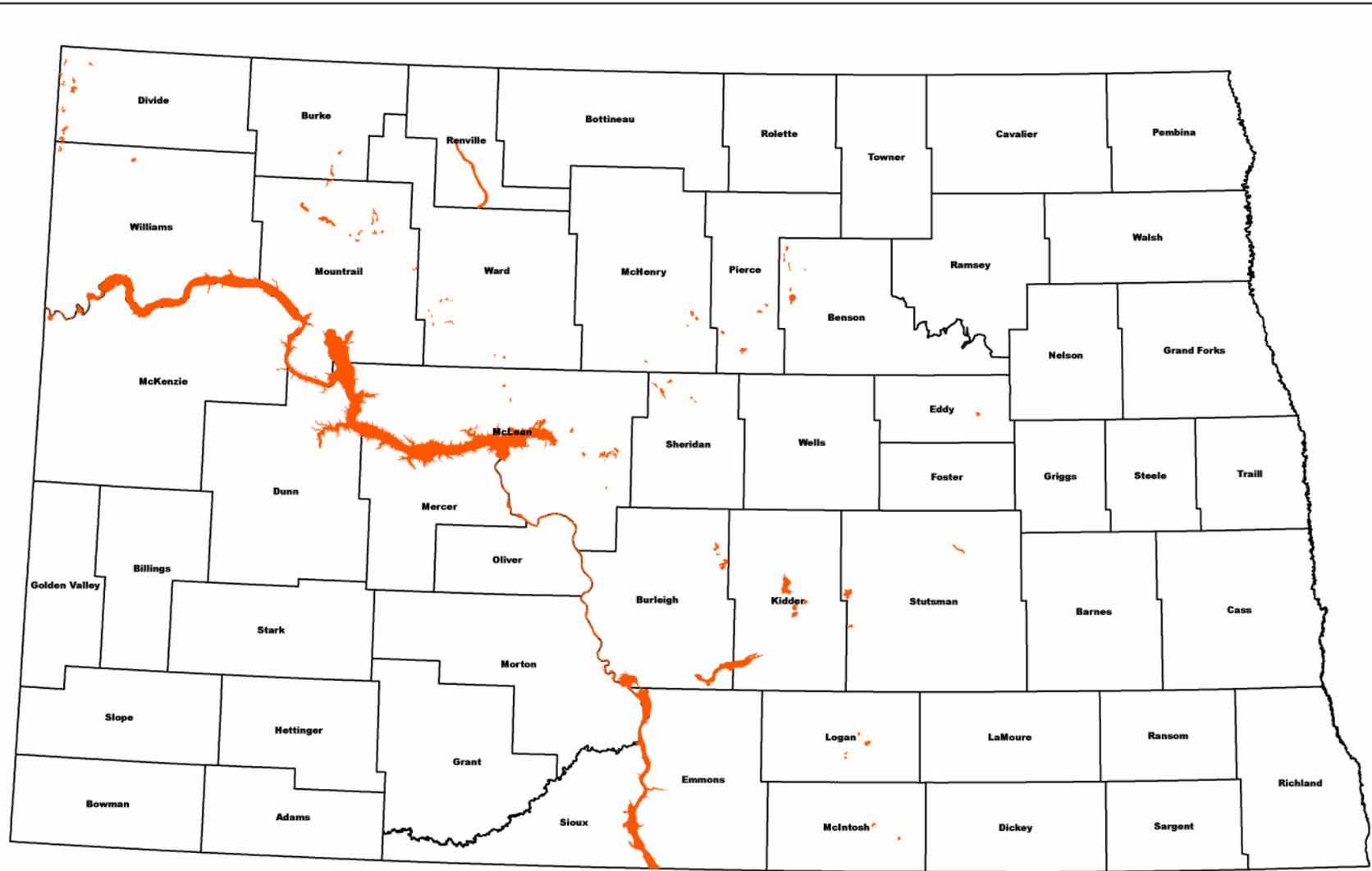


Figure 5. Least Tern Habitat in North Dakota



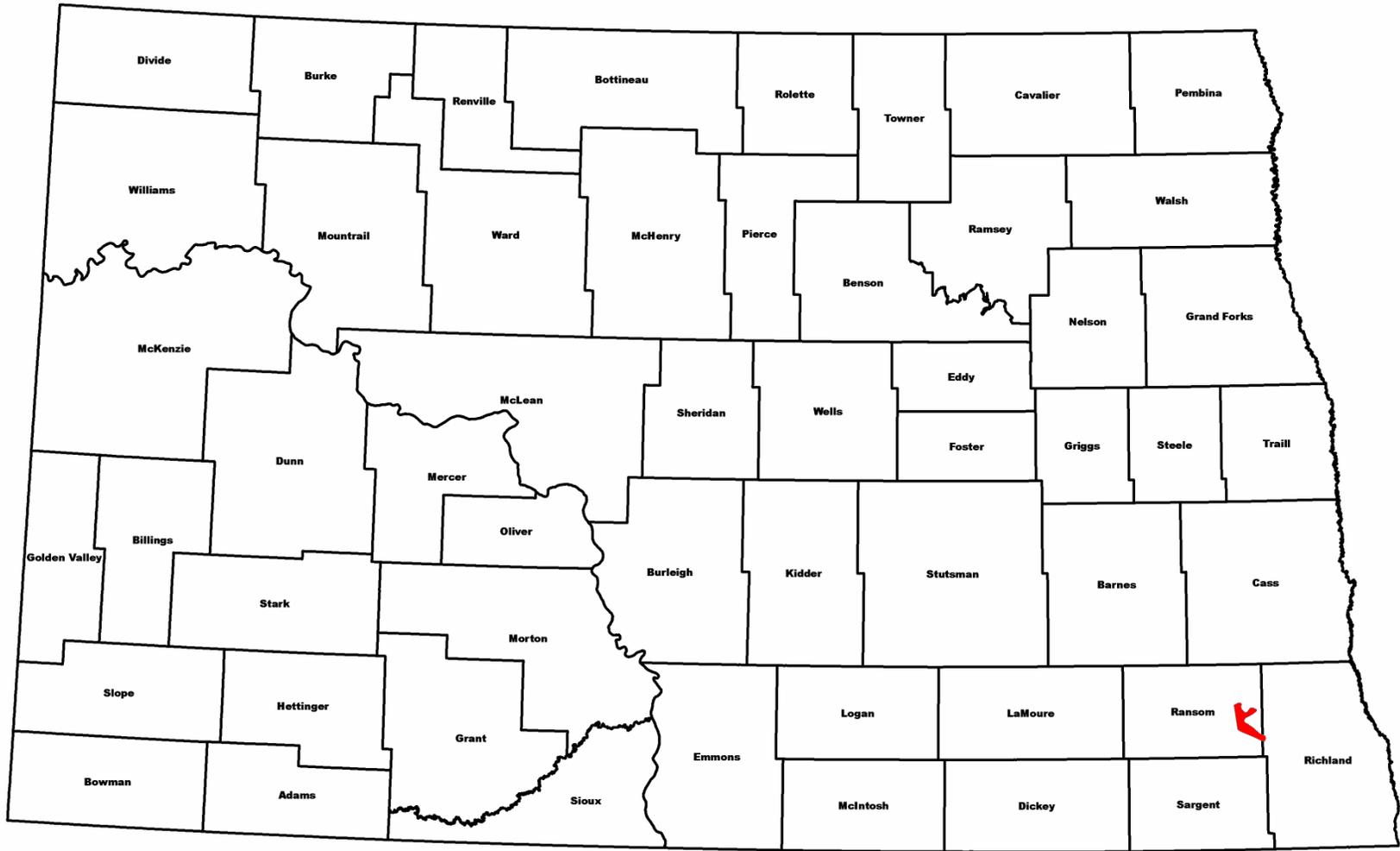
Piping Plover 

Figure 6. Piping Plover Critical Habitat in North Dakota

Revised 07/2010 by North Dakota Game and Parks



Figure 7. Pallid Sturgeon Habitat in North Dakota



W.P. Fringed Orchid 

Figure 8. Western Prairie Fringed Orchid Habitat in North Dakota

We thank C. S. G. for the map of W.P. Fringed Orchid habitat in North Dakota.

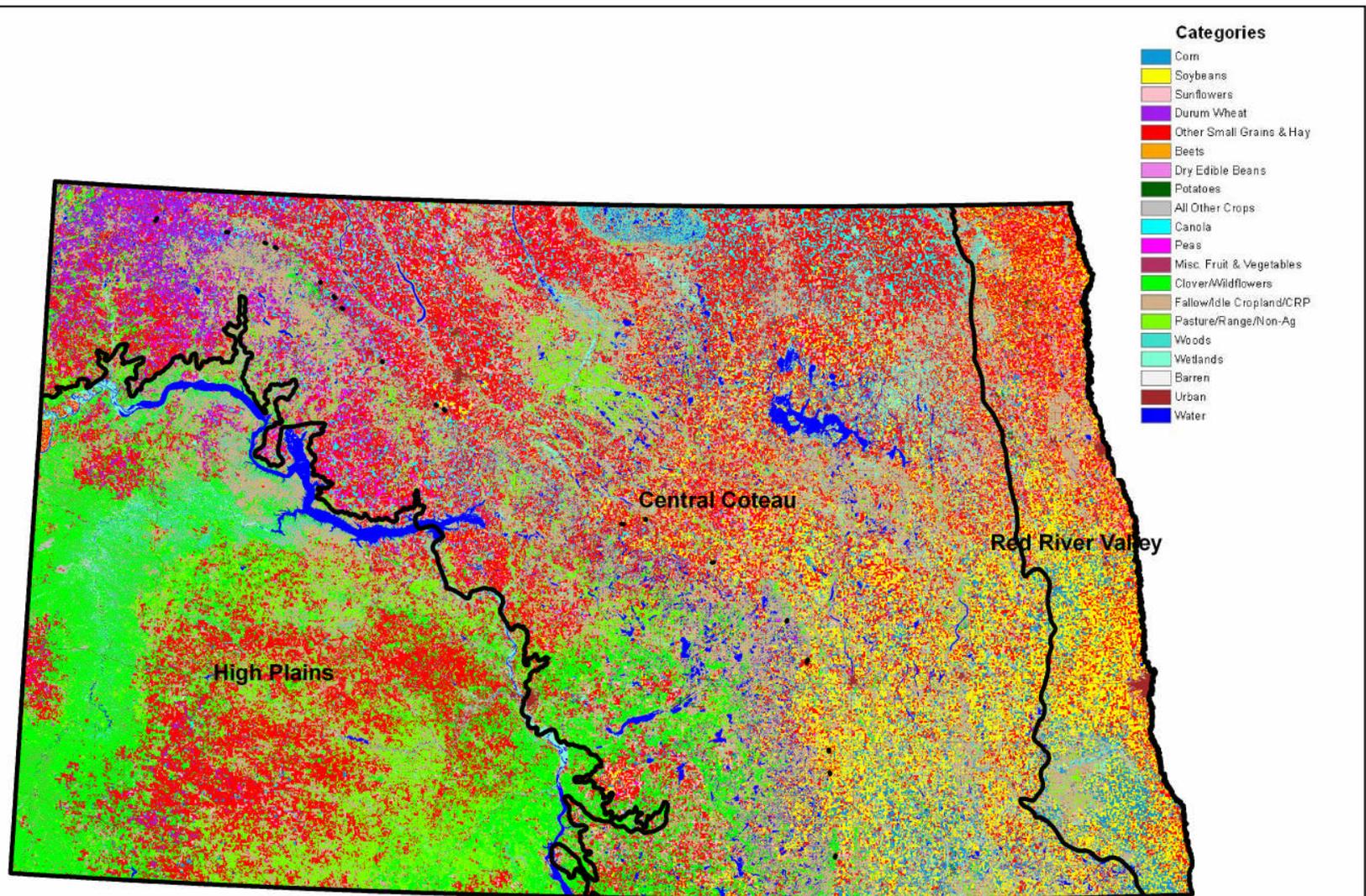


Figure 9. Ecoregions and crops grown in North Dakota