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Legislative Aquatic Invasive Species Report

Montana Department of Agriculture
and
Montana Fish, Wildlife, and Parks

December 2010

Legislative Aquatic Invasive Species Report Executive Summary

In an effort to provide Montana with additional protection against invasive species, the 2009 Legislature passed the Aquatic Invasive Species Act. The departments of Agriculture and Fish, Wildlife and Parks were given responsibility to implement the Act.

As a result of the new legislation, Fish, Wildlife and Parks (FWP) enhanced early detection monitoring and watercraft inspections. In 2009, FWP conducted 975 watercraft inspections at 18 different water bodies and monitored 254 sites across the state for aquatic invasive species. The department expanded watercraft inspections in 2010 to nearly 3,000 unique inspections. The inspections were carried out primarily at boat ramps and fishing access sites. Watercraft inspections were carried out on 38 different water bodies from May through October. Watercraft inspections have been found to be a very effective way to educate the public on aquatic invasive species prevention strategies.

The FWP Aquatic invasive species early detection and monitoring program was also expanded significantly during 2010 with monitoring conducted at 600 sites. Through the early detection program, FWP assisted the counties and Department of Agriculture in locating several new infestations of Eurasian watermilfoil. Additionally, organisms that were suspected to be dreissenid mussel larvae (zebra/quagga mussels) were found in routine sampling from Flathead lake, since the initial suspect organisms were found no additional evidence of the presence of dreissenid mussels has been found. Additional surveying will occur during 2011. The FWP AIS early detection monitoring program also conducts monitoring for invasive fish pathogens including whirling disease and viral hemorrhagic septicemia.

In addition to conducting watercraft inspection and early detection efforts, FWP has taken the lead on development and implementation of a public information plan to address public awareness and outreach. The department has also been actively involved in conducting training and providing educational outreach materials to volunteer groups, lake associations, the Confederated Salish and Kootenai Tribes, and others interested in aquatic invasive species prevention and early detection.

While the Fish, Wildlife and Parks watercraft inspection program has primarily focused on inspections near water bodies, the Department of Agriculture has been targeting inspections along our borders at primary entry points into the state. In 2009, the Department of Agriculture (MDA) conducted 64 inspections at five voluntary inspection stations between August and October. The MDA inspected 1,757 recreational vehicles at 18 roving border check

stations from May through September in 2010. Both departments plan to continue to operate inspection stations. Based on discussions with federal, state, and county officials and law enforcement and the recent detections of Eurasian watermilfoil in the Missouri River and the suspect dreissenid mussel larvae in Flathead Lake, the inspection station strategy for 2011 has been revised to maximize prevention efforts.

In May of 2010, the Department of Agriculture established a management area for Eurasian watermilfoil for the Noxon/Cabinet Gorge area. As part of the management area, the department conducted mandatory inspection stations; 3,784 water craft inspections occurred at two inspection stations within Montana and another 3,000 inspections were conducted at an inspection station conducted collaboratively with Idaho. In August, reports of additional Eurasian watermilfoil infestations were confirmed in the Toston and Fort Peck areas. A statewide task force has been developed to provide guidance and planning assistance in addressing infestations.

In October of 2010, the Department of Agriculture hosted a statewide Invasive Species Summit. Based on comments received, the department has begun preparing an Invasive Species Strategic Plan and has begun planning for an annual Invasive Species Summit in 2011. The department has engaged in outreach and education through the inspection stations and to agricultural industries. The department will be working with the Department of Fish, Wildlife and Parks to complete development of and implement outreach and awareness for the horticulture industry.

Legislative Invasive Species Report

Effective in July 2009, the Montana Aquatic Invasive Species Act helps enhance the protection efforts within the state against the threat that invasive species pose. The Act established the mechanism for the state to "...detect, control, and manage invasive species... by educating the public about the threat of these species, coordinating public and private efforts and expertise to combat these species, and authorizing the use of inspection stations to prevent the intrastate movement of invasive species from infested areas to un[-]infested areas" (80-7-1002(2), MCA). This report has been prepared to inform legislators and the public informed about the efforts the agencies have undertaken to meet the objectives of the Act. The report highlights the accomplishments as well as the future actions and activities being planned.

Invasive species programs were in place in each of the two agencies prior to the adoption of the Montana Aquatic Invasive Species Act. Current activities reflect these programs, which have been enhanced as well as new efforts and activities.

Fish, Wildlife, and Parks has had an Aquatic Nuisance Species (ANS) program in place since 2004. With funding from the US Fish and Wildlife Service, an ANS Coordinator was hired in 2004 to implement and manage the program. The 2009 Legislature approved 1.75 FTE and \$40,000 for the ANS program responsibilities. This funding, along with US Fish and Wildlife Service grants of approximately \$33,500 annually, provides for a base operating budget of approximately \$73,500. The department received an additional \$41,360 in general fund in fiscal year 2010 from the Department of Agriculture through their invasive species funding to augment activities. Through an agreement between the two departments, FWP will use an additional \$150,702 in general fund invasive species monies to support, enhance, and expand aquatic invasive species efforts in fiscal year 2011. The program focuses its efforts on the following key areas: education, prevention, control and containment, monitoring, and emergency response. The main effort is on prevention activities, which include watercraft inspections at major river, lake, and reservoir access sites and an early detection monitoring program covering Montana's major water bodies.

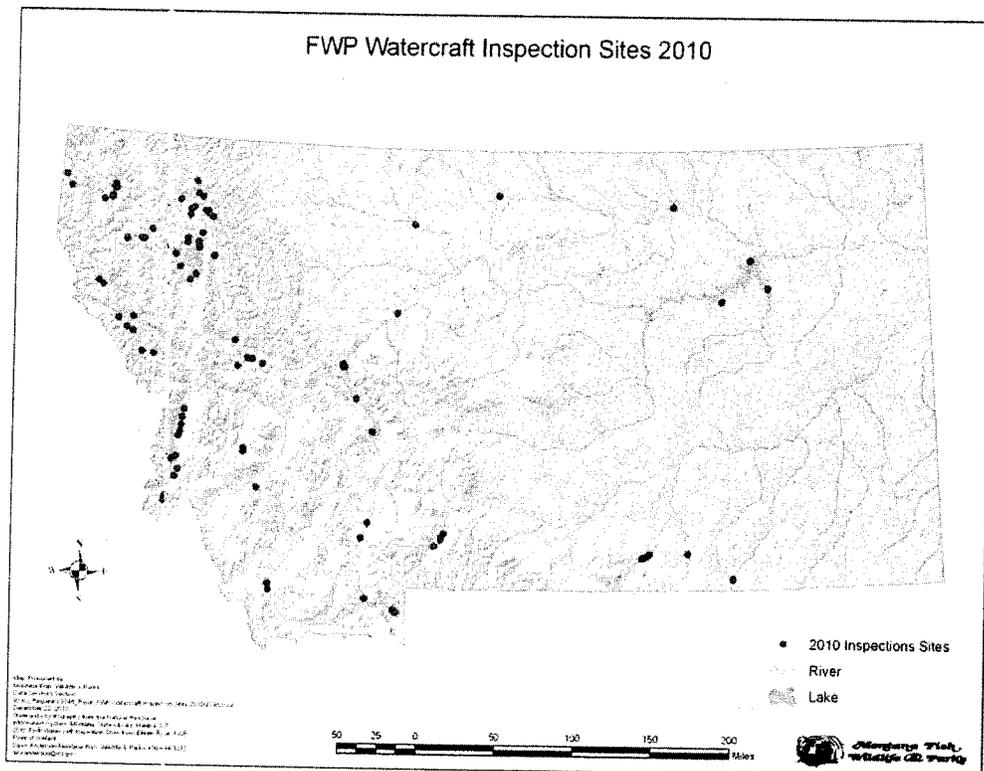
The Montana Department of Agriculture administers the noxious weed program. The law authorizing and supporting the noxious weed program is broad but historically has focused on terrestrial species of concern. Both the department and counties, who bear the authority and responsibility for management of noxious weed issues within their counties, work together to

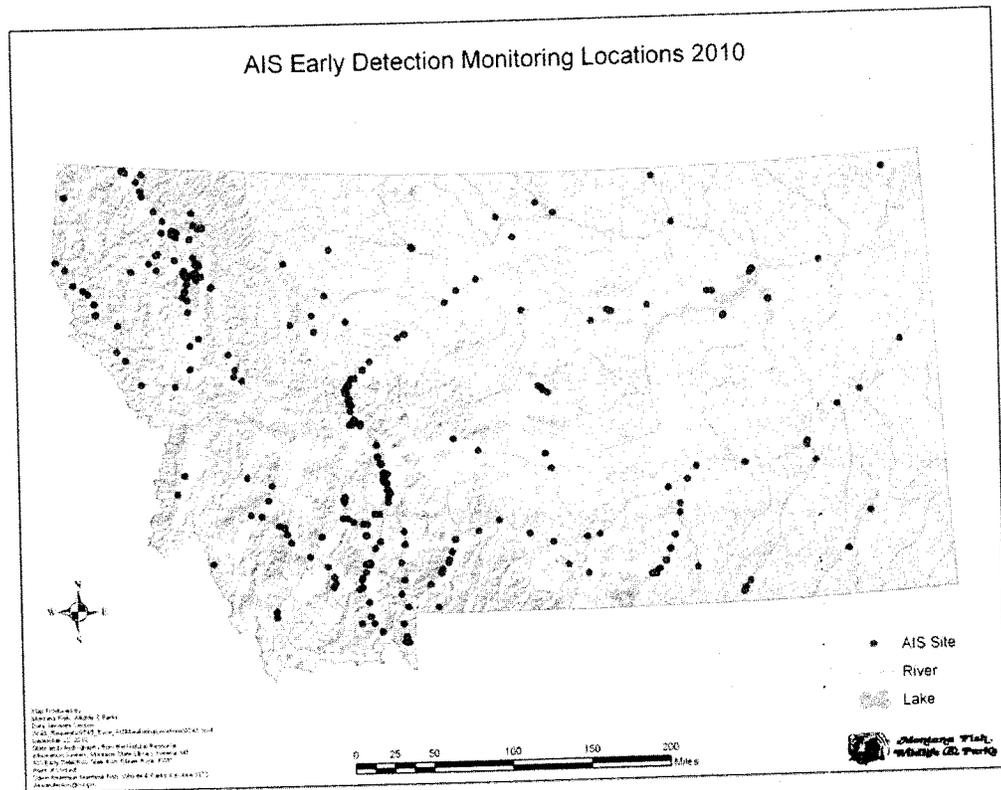
coordinate efforts. The nursery and quarantine programs support the noxious weed program by providing regulatory services. In addition, through USDA funding, the department conducts invasive pest surveys and emergency response that includes aquatic species of concern for agriculture. Aquatic weeds and other invasive pests present new and different challenges to program managers than do terrestrial weeds and represent an emerging program focus for the department.

Fiscal Year 2010 and 2011 Accomplishments

Montana Fish, Wildlife, and Parks

In implementing the provisions of the Act, Fish, Wildlife and Parks (FWP), using funding through an agreement with the Department of Agriculture, conducted boat inspections and early detection activities in 2010 at high priority bodies of water (see maps below). Locations were selected based on the risk of introduction and establishment of aquatic invasive species. Risk factors included angler use, boater movements, water body size and use, water quality, and bait use. Inspection stations included education and outreach with recreationalists, boat inspections, and cleaning of boats.

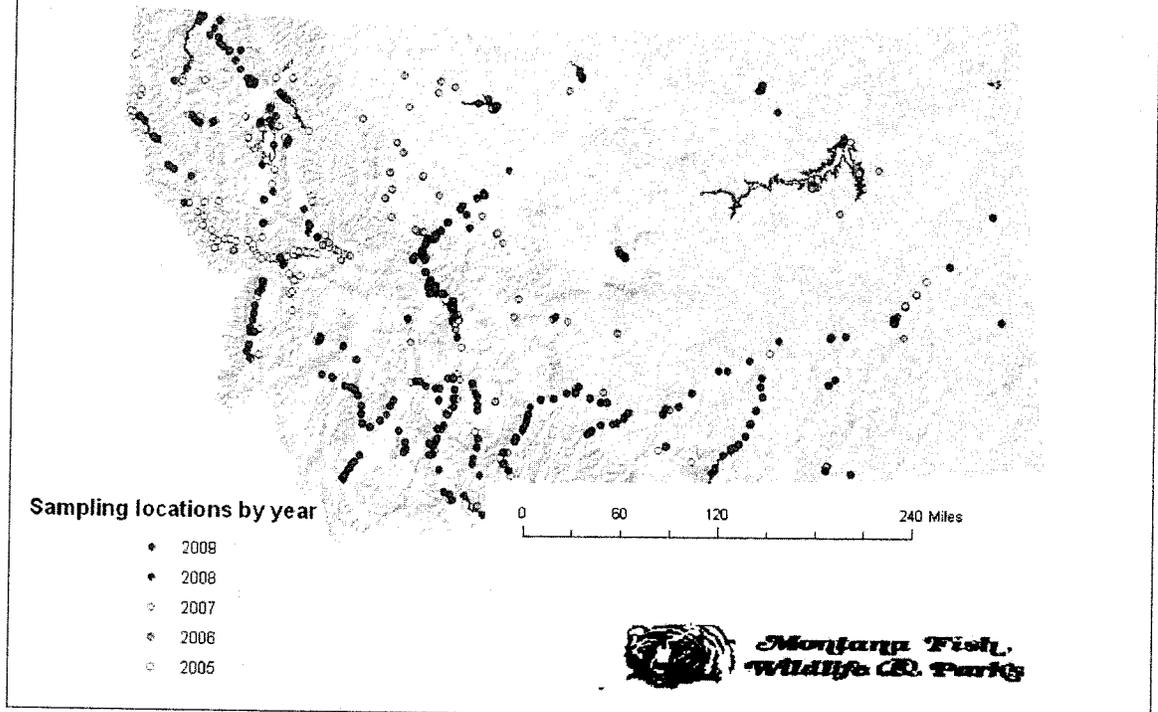




In 2009, FWP conducted 975 boat inspections at 82 watercraft inspection events on 18 different water bodies and 33 different locations. Angler/Boater surveys were conducted as part of the watercraft inspections. Information from the surveys is used to help determine boater/recreator movement patterns and behaviors and attitudes associated with cleaning boats and fishing gear.

FWP, in 2009, monitored 254 sites across the state for aquatic invasive plants such as Eurasian watermilfoil and hydrilla and invasive invertebrates, including quagga and zebra mussel juveniles and adults and New Zealand mudsnails. The state is fortunate to have an established Dreissenid Veliger Lab for analysis of plankton samples. The lab processes samples not only for Montana but also for other states in the Missouri Basin. In 2009, the lab processed a total of 492 samples.

ANS Sampling Locations



The FWP Program coordinates ANS efforts with others regionally and within the state. The ANS Program actively participates on several regional and national committees. Montana is a member of the Western Regional Panel (WRP) and the Mississippi River Basin Panel (MRBP) of the National Aquatic Nuisance Species Task Force and the Montana ANS Coordinator is the current Chair of the MRBP and the Past Chair of the WRP. Through participation in the WRP, MRBP, 100th Meridian Columbia River Basin ANS work group, 100th Meridian Missouri River Basin ANS work group, the Montana ANS Program collaborates with surrounding states and is able to maintain a regional and water basin perspective. As part of this regional collaboration, Montana is a signatory state on the Columbia River Basin Interagency Invasive Species Response Plan (October 2008) and has adapted the plan for use within the state to address aquatic invasive species, in particular zebra mussels and other dreissenid species. The department also participates in a number of other smaller watershed or focus groups including the Flathead Basin ANS Work Group, the Greater Yellowstone ANS working group and the Noxon/Cabinet Gorge EWM Task Force.

The FWP water craft inspection program was greatly expanded in 2010; almost 3,000 water craft were inspected and about 8,000 unique contacts were made (see map above for locations). Flathead Lake, Fort Peck Reservoir and Canyon Ferry Reservoir are the three largest bodies of water in the state. FWP conducted nearly 700 inspections at 15 bodies of water within the Flathead basin, 260 at Fort Peck Reservoir and 380 at Canyon Ferry Reservoir. The most common concern encountered during the boat inspections was the frequency of small fragments of aquatic vegetation and vessels carrying potentially contaminated water either in their livewells or bilge. Outreach and education continues to be the primary benefit of conducting these inspections. In 2010, the department received notification from a marine mechanic that a boat inherited by a Montana resident was contaminated with zebra mussels.

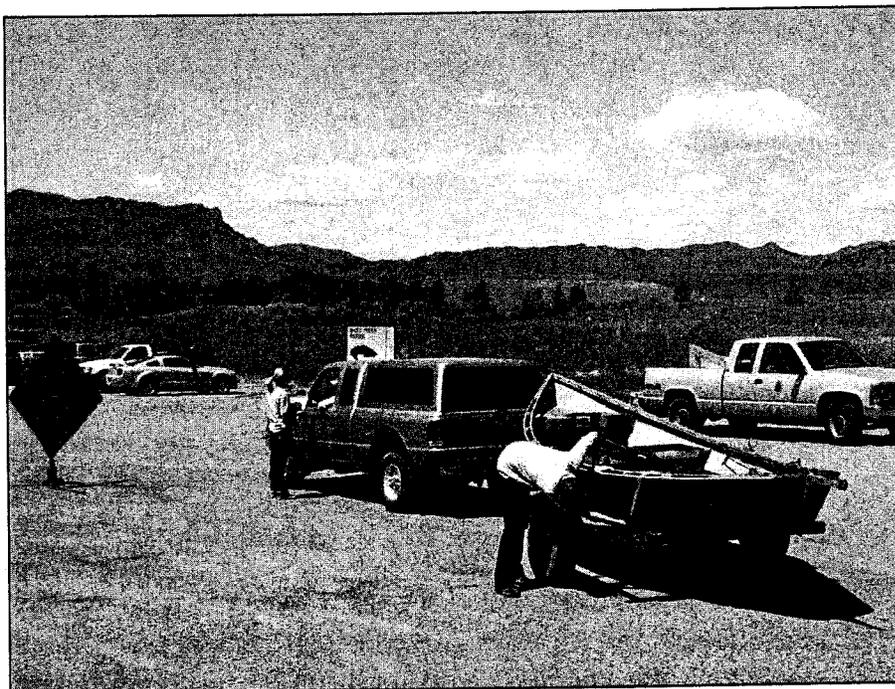


Figure 1 FWP Angler Check Station At Wolf Creek Fishing Access Site, Missouri River

The boat was decontaminated before being launched in Montana waters. FWP worked together with the Department of Agriculture to operate an inspection station during the MAC Attack events on Flathead Lake in the spring of 2010.

FWP has been operating mandatory

angler check stations as part of the ANS Program since 2004 (see Figure 1). The check station authority only extends to anglers and does not include all watercraft. The agency is proposing an administrative rule to establish mandatory watercraft inspections pursuant to authority under 80-7-1001, MCA.

A hatchery inspection program was incorporated into the aquatic nuisance species program in 2005. Inspections are conducted at all state, federal and private hatcheries for ANS at critical control points within the hatchery, including water inflow and effluent. One commercial hatchery tested positive for New Zealand mudsnails (NZMS) in 2005. Measures were adopted to prevent the spread of New Zealand mudsnails from this facility. Fish stomachs are collected



Figure 2 New Zealand Mudsnaills On A Rock From The Madison River

and analyzed annually to ensure measures continue to be effective. During 2010, inspections were conducted at 10 state, 12 commercial, and three federal facilities. The commercial hatchery that tested positive for NZMS (see figure 2) in 2005 tested clean for NZMS in 2010, however, precautions are still in place to ensure a minimal level of risk from this facility. During 2010

Eurasian Watermilfoil (EWM) was found in the water supply to the Fort Peck State Fish Hatchery. No EWM has been found on station, however, because of the infested water supply, the hatchery is considered to be positive for EWM. Protocols are being put in place to ensure that the hatchery does not spread EWM to uninfested waters.

Aquatic invasive species early detection and monitoring was conducted at 600 sites during 2010 (see map above). Early detection and monitoring is focused on dreissenid mussels, other aquatic invertebrates and aquatic plants. During the 2010 season, 248 plankton samples were collected for analysis at the FWP ANS laboratory. The FWP ANS Program also coordinates the invasive fish pathogen monitoring with the FWP Fish Health Lab, in particular monitoring for Whirling Disease and Viral Hemorrhagic Septicemia virus. Through routine monitoring, samples analyzed by the FWP ANS lab were suspected to be positive for the larval stage of dreissenid mussels (zebra/quagga mussels) (see Figure 3). The suspect samples had been collected from the Northshore area of Flathead Lake. FWP issued a press release in November stating that the suspect

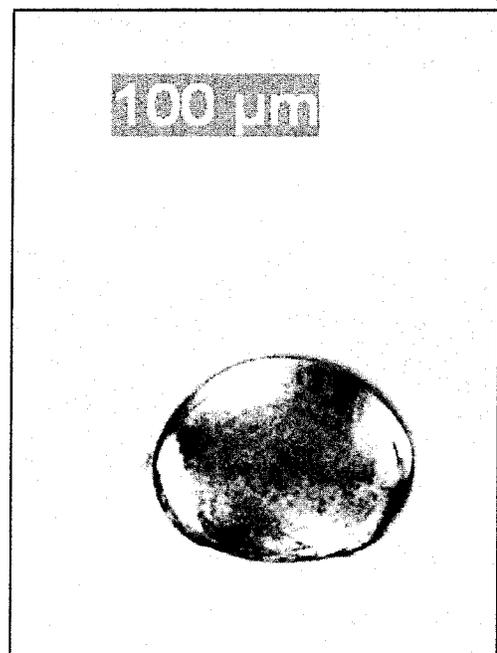


Figure 3 Larval Stage Of Dreissenid Mussels

organisms had been found and that a thorough investigation was being initiated in order to confirm or deny the find. Notifications were also made to Columbia River Basin states, neighboring states, federal partners, the Salish and Kootenai Tribal government, key Flathead basin groups, the Governor's office, and the FWP Commission. Samples were sent to multiple out-of-state labs for additional testing by microscopy and DNA analysis. Experienced divers with USGS from Michigan were also deployed in the area where the suspect samples were found. At this time no evidence suggests that the samples were positive for either zebra or quagga mussels. Additional samples will be collected during 2011, until a confirmation can be made as either positive or negative the lake will be considered potentially suspect for invasive mussels. Because mussel reproduction is significantly reduced when water temperatures fall below 52° F and veligers move to the bottom of the water column, additional veliger sampling will occur when water temperatures rise in early summer. Efforts will be focused on containment to protect other state water resources from the potentially infested area.

In 2010, in addition to conducting boat inspections and early detection activities, FWP developed and implemented an aquatic invasive species public information plan. Figure 4, below, illustrates the standard graphic developed for the campaign. The Inspect, Clean, Dry

With just three easy steps, you can do your part to help stop the spread of aquatic invasive species like plants, mussels and whirling disease

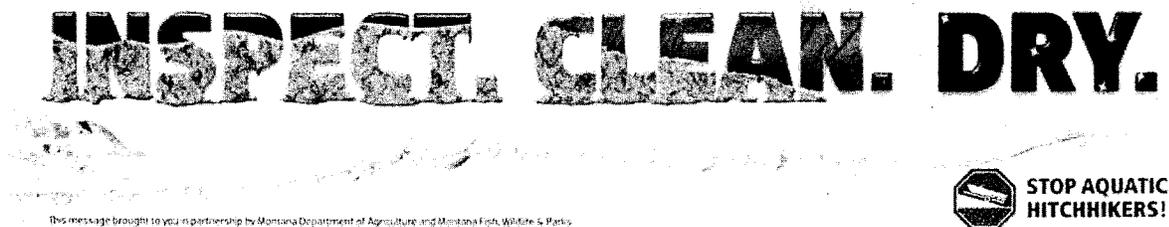


Figure 4 Public Information Plan Graphic

campaign was launched during the 2010 boating season. The campaign incorporates the Stop Aquatic Hitchhikers campaign message that has been used nationally for several years. This has been done to reduce confusion among the public. A variety of materials were used in the outreach campaign including 12 billboards, 500 metal signs for fishing access sites and boat ramps, direct mailings to 50,000 boaters and anglers, several presentations to angling groups and K-12 classrooms, and distribution of other print materials including brochures, flyers, media packets, bumper stickers and posters. Advertisements were also purchased in 15 Montana newspapers, on the Northern Broadcasting network, with Bresnan and also on MT Outdoor Radio. Tailgate wraps are also being used on FWP trucks to help spread the message. The outreach campaign is being evaluated to determine the most effective outreach methods. Seven trainings were conducted during the winter and spring for resource agency staff,

counties, and non-governmental organizations (NGOs). The trainings covered ANS identification, early detection, prevention strategies and watercraft inspection/decontamination. FWP will also be working with the Department of Agriculture to complete education and outreach on aquatic plants and pests for the pet and nursery trades.

Montana Department of Agriculture

The Department Agriculture conducted 64 inspections at five voluntary, roving inspection stations in Lewis and Clark, Mineral, Beaverhead, Lincoln, and Roosevelt counties in August, September, and October of 2009. Recreating visitors from 31 states, including Montana, and Canada, China, and England passed through the inspection stations or stopped at the invasive species outreach table. Two hundred and eleven recreational vehicles by-passed the inspection stations.

Using a theme consistent with other states, the department also leased a billboard on Hwy 93, see figure 5, for education and outreach. The billboard skin is changed out seasonally and includes other invasive species messages that are funded from other department sources.



Figure 5 Aquatic Invasive Species Billboard

In 2010, the department was able to expand aquatic invasive species efforts, developing an invasive species list (see Appendix A) and collaborating with the Department of Fish, Wildlife and Parks on development of an executive strategy. The department published two Legislative newsletters (<http://agr.mt.gov/Invasives/>) and distributed aquatic invasive species education/outreach materials to weed districts, conservation districts, tribes, extension services, and other interested parties. An Invasive Species Summit was hosted in October 2010 to discuss education, management, research and prevention, statewide and regional approaches, legislation, funding, and implementation strategies for a successful invasive species plan.

The department inspected 1,757 recreational vehicles at 18 voluntary roving border inspection stations (see Figure 6) throughout the state from May through mid-September. Visitors from 41 states and Canada passed through the inspection stations. Roughly 1,418 recreational vehicles by-passed the voluntary roving inspection stations. Figure 6 and Table 1 provide details on where recreational vehicles passing through the inspection stations originated from.

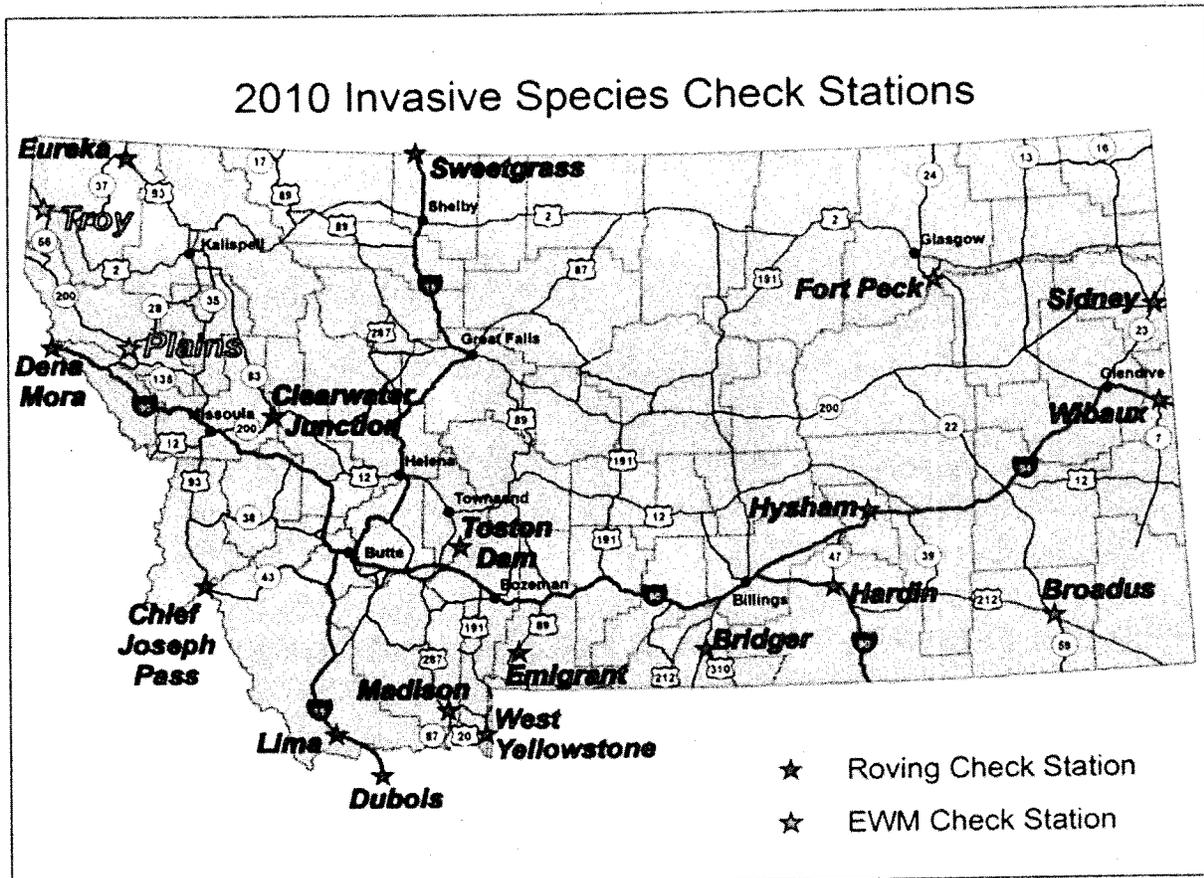


Figure 6 Roving and Eurasian Watermilfoil Inspection Station Locations

All states except Wyoming have confirmed Eurasian watermilfoil infestations. However, Wyoming has not conducted surveys or monitoring for aquatic weeds and therefore should be viewed as a state lacking information rather than a state free from the presence of Eurasian watermilfoil. The dominant comments the department received about the inspection stations were “We have those, you don’t want them” and “Why aren’t the check stations mandatory? They should be.”

A management area was established by the Department of Agriculture in May of 2010 for Eurasian watermilfoil (EWM) and is effective until removed by administrative rule. The area in gold in Figure 7 shows the boundaries of the management area. The department conducted two mandatory inspection stations at Troy and Plains that operated seven days per week, twelve hours per day. Between the two inspection stations 3,784 watercrafts were inspected; 62 from Canada, 1,196 from other states, and 2,526 from Montana. Avista and Idaho sponsored an additional mandatory inspection station at Clark Fork on Highway 200 through which approximately 3,000 watercraft were inspected.

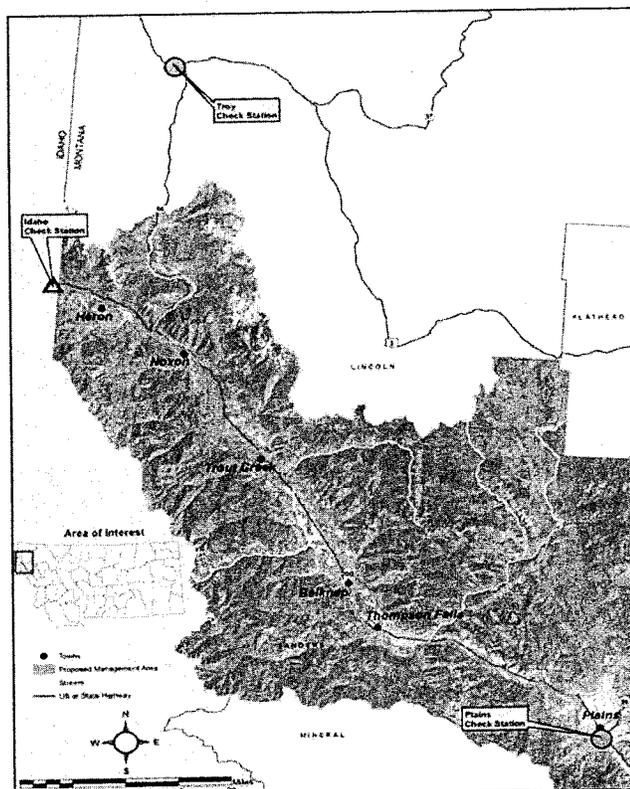


Figure 7 Designated Management Area and Inspection Station Locations

In August of 2010, the department received a number of reported sightings of Eurasian watermilfoil throughout the state. Infestations have been verified at Toston Dam and upstream from the dam for approximately six miles; Cottonwood Channel and the supply ditch in the wildlife management area north of Townsend; backwater channels south of the fishing access site near York's island and below the Drouillard fishing access site on the Jefferson River; and the Big Dry Arm, the Fort Peck Marina, the Pines, from Timber Creek to Bone Trail, and the dredge cuts below Fort Peck Reservoir, see Figure 8. The department organized a meeting between Department of Agriculture, FWP, DNRC and affected counties as new reported sightings were taking place. Options were considered and a plan quickly agreed upon and implemented. EWM reproduces itself by fragmenting in the fall so the window of opportunity was limited. Methods to control EWM are dependent upon environmental circumstances and landowner input. The Cottonwood Channel and irrigation ditch are owned by the Department of Reclamation and managed by FWP. FWP decided to hand pull EWM in the Cottonwood Channel and drain the irrigation ditch in an attempt to freeze the plants over the winter. DNRC as the landowner at and upstream from the Toston Dam used divers to remove EWM. The U.S. Army Corps of Engineers as the landowner at Fort Peck is working on an environmental assessment for potential treatments and/or diver dredging next year. At the department's request, the Noxious Weed Summit

Advisory Council agreed to serve as the statewide Eurasian Watermilfoil Task Force to provide guidance and planning assistance in addressing Eurasian watermilfoil infestations.

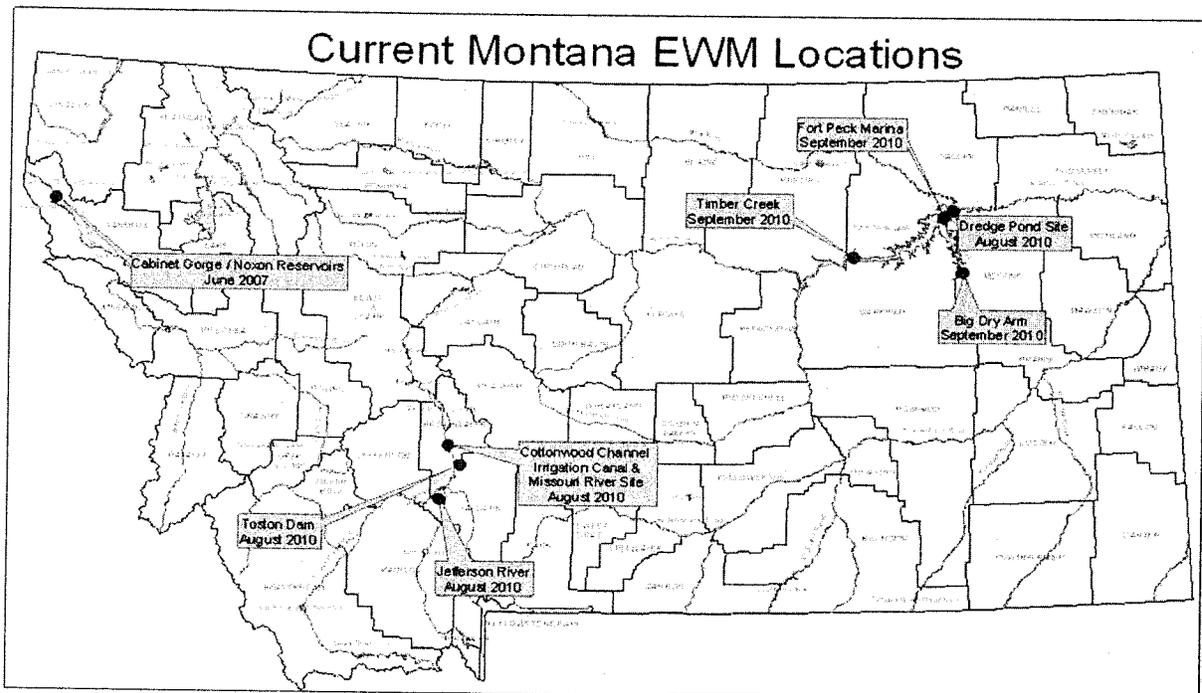


Figure 8 Montana Eurasian Watermilfoil Infestations

Looking Ahead and Planning for the Future

Montana Department of Agriculture

The department plans to continue conducting invasive species inspection stations throughout the state. The department anticipates working collaboratively with Avista, Broadwater, Gallatin, and Valley Counties, DNRC, the US Army Corps of Engineers, and other stakeholders and landowners on Eurasian watermilfoil inspection stations. Idaho is currently discussing its invasive species activities, including inspection stations, for the upcoming year. Department personnel are discussing potential cooperative efforts with Idaho and have contacted Wyoming about a collaborative effort between the two states, potentially near Sheridan.

Based on discussions with the Department of Transportation, local law enforcement, county personnel, and the US Customs and Border Patrol, as well as the department's own observations, regarding traffic and recreational patterns, the department has revised the strategy and adjusted locations for the roving inspection stations. We will be keeping some sites, dropping less productive sites, and adding new sites. Locations will include rest stops,

DOT weigh stations, and other areas with suitable space that also provide a measure of safety for both inspection crews and the motoring public. Site locations will include: Bridger, Clearwater Junction, Dena Mora, Eureka, Gates of the Mountains, Great Falls, Junction of 200 and 56, Lima, Lolo, Plains, Sheridan, Sweet Grass, Toston/Three Forks, Troy, West Yellowstone, and Wibaux, see Figure 9. In addition, the department will work with counties and other

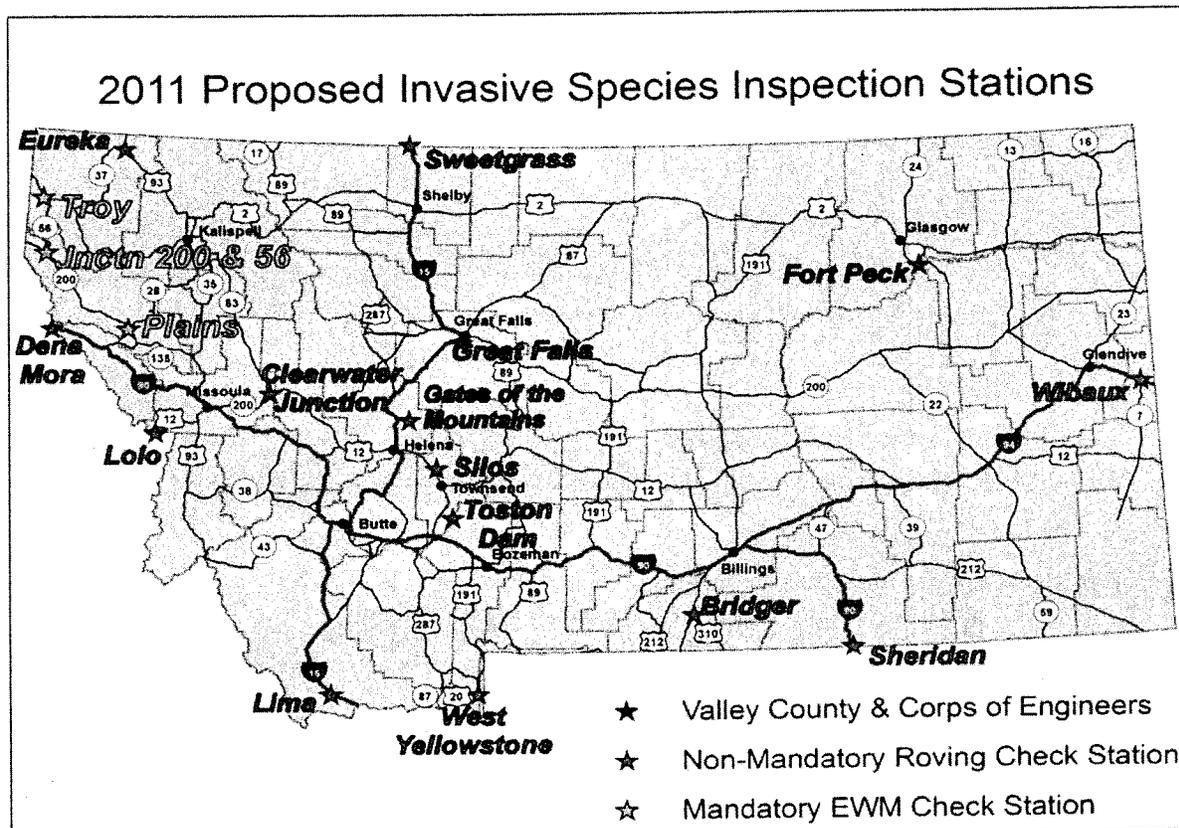


Figure 9 2011 Proposed Inspection Stations

community groups to assist them in their own efforts. Should mandatory authority be added to the roving inspection stations, the department will work with law enforcement agencies to assist in improving compliance.

Because of the number of new Eurasian watermilfoil infestations identified in August and September, the department, county weed districts, the Eurasian Watermilfoil Task Force, and stakeholders will be discussing response and management strategies and assessing whether a state-wide management area is needed. Practical implications need to be considered, particularly with regard to inspection stations. Based on comments received, the department has begun work on the development of an aquatic weed strike team that will be responsible for responding to reports or complaints about aquatic weeds.

Aquatic noxious weeds, while not new to Montana, do represent a different challenge to weed managers throughout the state. Weed managers already face fiscal challenges in meeting terrestrial weed concerns. Aquatic weeds not only represent additional fiscal challenges but legal and logistical challenges as well. Aquatic environment ownership (who owns it and is responsible for the infested area) is not nearly as clear and defined as in terrestrial situations. Response and management strategies in an aquatic environment require new considerations; e.g., it's not just wind but water depth and water movement rates and patterns need to be considered, it's a different set of practices and applications than those typically used for terrestrial weed control. Fewer biological controls are available; new infestations can be larger in size because they're not as easy to initially identify; and delimitation of infestations takes different techniques (divers for example).

Recent experience shows that additional training and preparation are needed. To meet this need, the development of a strike team(s) are being considered (as mentioned above) and training is being developed for conservation districts, weed and pest districts, extension service, and governmental agencies (local, state, tribal and federal) that will include identification, response protocols and structures or framework, monitoring, and management options. Terrestrial weed survey and monitoring work is the purview of the county weed districts. The department has assisted counties in delimitation survey work and monitoring. However, only limited aquatic survey and monitoring work has been conducted by the counties and the department. The weed community has asked the department to take an active role in aquatic survey, monitoring, response, and management, and some believe the department should assume the responsibility for a statewide programmatic approach for aquatics. While this would provide a consistent approach and an easily recognized leader, additional discussions are needed. The department plans to take a more active role in aquatic survey and monitoring work in the summer of 2011. Survey and monitoring work is planned for Missouri River Watershed. The agency's efforts will be coordinated with others conducting similar work to avoid duplication. Sampling, survey and monitoring protocols are being developed to allow the department and counties to have a consistent and sound approach. Further discussion with the weed districts and the weed community is needed to fully address the broader issue of response and management.

In looking at management options, the department has identified the need to assess chemical management treatment impacts in the aquatic environment. Much of the work has been done; the effort will focus on working with EPA and their toxicologists and other experts in the field to review and assess research and literature on aquatic herbicides and their impacts to fish (from the egg to the adult stage), threatened and endangered species, and aquatic habitats. This, combined with aquatic herbicide use decision matrices and use guidelines already in

development (Celestine Duncan, Weed Management Services), will be invaluable for aquatic invasive plant managers and should alleviate concerns over use of aquatic chemicals. Aquatic treatments, including non-chemical methods and approaches, typically require some level of environmental assessment (EA), acquisition and compliance with water quality permits, and, as of April 9, 2011, coverage under a National Pollutant Discharge Elimination System permit (NPDES permit for biological and chemical compounds). Because of these requirements, the department will also be working on development of base EA and permit components that will be necessary in all future EAs and permits. This will provide the department with the ability to move forward in as timely a manner as possible when EAs and permits are required.

There are a number of strategies and plans being developed and updated – the Montana Statewide Aquatic Strategic Plan; the Montana Invasive Species Strategic Plan, the Montana Aquatic Invasive Executive Summary; the Montana Aquatic Nuisance Species Plan (ANS Plan); and the Montana Noxious Weed Management Plan. The Montana Statewide Aquatic Strategic Plan is focused on management of aquatic noxious weeds. The comment period on the plan ended November 5, 2010 and contractor Celestine Duncan will be addressing received public comments and then will begin the final stages of plan completion. The Montana Invasive Species Strategic Plan is an expected outcome of the Invasive Species Summit. The plan will have a broad scope, including non-aquatic invasive species. The department is currently considering the options best suited for its development and are looking at similar plans in other states to glean their best thoughts and ideas for incorporation into Montana's plan. The Montana Aquatic Invasive Species Executive Summary document summarizes the state's aquatic invasive species efforts by the departments of Agriculture and Fish, Wildlife, and Parks. This document will meet an objective set out in the Montana Aquatic Invasive Act enacted in July of 2009. The ANS Plan falls within the purview of the Department of Fish, Wildlife, and Parks -- more information may be found on this plan in the section on Fish, Wildlife, and Parks. And finally, updates on the Action Items of the completed Montana Noxious Weed Management Plan will be undertaken by the Montana Noxious Weed Summit Advisory Council as they have been done in the past to keep it current and dynamic.

Based on the 2010 Invasive Species Summit evaluations, planning has begun for a fall 2011 Invasive Species Summit. The planning committee will be broadened to include representatives from other invasive species areas so that the next summit is broader in scope.

As mentioned earlier in the narrative under department accomplishments, the agency indicated that it had begun the process of developing education and outreach for nursery and pet trade industries. The department will continue work in this area in the coming year, focusing on aquatic plants sold and distributed through nurseries and pet stores. Because of the potential

for aquatic plant materials to be contaminated with other harmful and invasive plants and for them to contain un-intended aquatic hitchhikers, the department's focus will be more inclusive than the Montana listed aquatic noxious weeds. This issue, combined with other nursery trade changes being considered, will have a significant impact on the nursery program. The changes will allow the department to better address the horticulture industry needs, provide protection of agriculture as a whole in Montana, and better integrate invasive species between programs, aquatic and terrestrial.

Montana Fish, Wildlife, and Parks

In 2011 the ANS Program will continue to operate watercraft inspection stations, provide public outreach, statewide training, and ongoing monitoring for zebra/quagga mussels and other aquatic invasive species. In 2011, FWP will host an invasive species response exercise following the Columbia River Basin Interagency Invasive Species Response Plan. The exercise is tentatively scheduled for Lake Kootenai in the fall of 2011 and is being designed to involve British Columbia, the US Army Corps of Engineers, and downstream states. FWP will also conduct rapid response training for potentially affected land managers to better enable decision-making should an introduction of an aquatic invasive species be confirmed. To keep current, participation in regional and national discussions on methodologies for eradicating or managing infestations of zebra/quagga mussels or other aquatic invasive species will continue.

Education and outreach are critical to the success of protecting the state from the threat that aquatic invasive species pose. FWP will continue to implement the Aquatic Invasive Species Awareness Campaign launched in May 2010 in collaboration with the Montana Department of Agriculture (MDA). The public information plan includes helping MDA with outreach and education related to aquatic plants sold and distributed through the nursery industry and pet stores. FWP also plans to seek other education and outreach opportunities with local communities and non-governmental organizations.

The help of volunteers and local water basin level organizations is a very important component of the FWP aquatic invasive species program. FWP plans to continue collaborating with and supporting community efforts such as the Eureka Volunteer Lake Monitoring program through the Whitefish Lake Institute and the Flathead Lake Basin Commission's Volunteer Lake Monitoring Program. In addition, a web based resource for capturing data associated with monitoring network efforts is being developed. Key elements of the network include making AIS information available electronically, citizen involvement in aquatic invasive species early detection, and links for scuba divers that want to volunteer and become involved. Additionally,

FWP plans on working with the state and local tourism boards to get AIS awareness information out to non-residents as they plan their vacations to Montana.

FWP is currently updating the Aquatic Nuisance Species (ANS) Management Plan, which was initially developed in 2001, signed by the Governor and approved by the National ANS Task Force in 2002. The ANS Management Plan is the avenue through which FWP qualifies for federal funding through the US Fish and Wildlife Service. An agreement has been reached with the US Fish and Wildlife Service concerning updates to the plan. FWP will focus on technical updates to the plan that will include incorporation of local efforts such as the Flathead Basin Aquatic Invasive Species Plan and information on the new AIS legislation and Administrative Rules. The update is expected to be completed in 2011. As part of the update process FWP plans on involving other state, federal and local agencies, in addition to user groups with an interest in aquatic invasive species.

All state hatcheries are analyzed for their vulnerability to aquatic nuisance species (ANS) and management actions are implemented to help prevent any ANS infestations in these facilities. This is an ongoing process and management actions are being incorporated as Hazard Analysis and Critical Control Points (HACCP) plans for each facility are updated and maintained. All state, federal and private hatcheries will be inspected during 2011. Additional inspections will occur at the facilities within the Flathead Basin and at Fort Peck due to the presence of EWM at Fort Peck and the potential for dreissenid mussels within the Flathead Basin.

Depending on the availability of funds, a primary goal in 2011 and 2012 is to expand early detection monitoring. Monitoring within the Flathead Basin will be substantially increased due to the potential suspect dreissenid infestation in Flathead Lake. Depending on availability of funds, early detection monitoring is planned at a minimum of 500 sites (see map for 2010, page 6). The department anticipates the collection of about 300 samples for submittal for dreissenid veliger analysis.

FWP is working with the Department of Agriculture to develop a plan for watercraft inspections in 2011 and 2012. FWP hopes to continue the inspection stations that have been conducted at high profile water bodies in addition to potentially adding additional inspections stations on highway border crossings and major travel routes. The Administrative Rule change is hoped to be in place early in 2011 to allow FWP to conduct mandatory watercraft inspection stations. In response to the potentially suspect dreissenid infestation in Flathead Lake FWP will have a containment strategy in place with the purpose to prevent the overland transport of dreissenids from Flathead Lake to other waters within the state. The primary time of concern for overland transport is when the invasive mussels would be spawning which would be late

June to early September, containment strategies will be focused to occur during this time period.

Budget

The 2009 Legislature approved the Department of Agriculture's budget request for \$667,000 for invasive species efforts over the FY10/FY11 biennium. Funding had been proposed for development and implementation of a statewide comprehensive invasive species plan, education and awareness, prevention, emergency response, inspection stations, establishment of management areas, and other activities¹. Funds have been allocated as follows:

Montana Invasive Species Budget

December 27, 2010

Expenditure Category	Fiscal Year 2010	Fiscal Year 2011	Expenditures To Date	Projected Expenditures (through 6/30/2011)	Total Expended To Date and Projected Expenditures
Personal Services ¹	\$ 72,049.17	\$ 83,835.74	\$ 155,884.91	\$ 43,571.22	\$ 199,456.13
Operating Expenses	\$ 32,763.86	\$ 50,345.49	\$ 83,109.35	\$ 95,620.10	\$ 178,729.45
Equipment ²	\$ 77,752.01	\$ -	\$ 77,752.01	\$ -	\$ 77,752.01
Grants ³	\$ 6,000.00	\$ -	\$ 6,000.00	\$ 13,000.00	\$ 19,000.00
Transfers ⁴	\$ 41,360.41	\$ 68,264.46	\$ 109,624.87	\$ 82,437.54	\$ 192,062.41
Total	\$ 229,925.45	\$ 202,445.69	\$ 432,371.14	\$ 234,628.86	\$ 667,000.00

1 Coordinator and Inspectors

2 Nine Wash Units

3 FY10: Sanders County, wash unit for Eurasian Watermilfoil efforts; FY11: Flathead Basin Commission

4 FWP Funded Efforts

1 Montana Department of Agriculture, Amended Fiscal Note for Senate Bill 343, Description of Fiscal Impacts, 2009 Legislature

For the biennium, funding has been focused on early detection and monitoring, at the lake inspection stations, border inspection stations, management area inspection stations, education and awareness, and coordination with local efforts.

Early Detection and Monitoring	\$ 28,000
Prevention	
FWP watercraft Inspections	\$ 68,935
Roving border inspection stations	\$138,673
Containment/Management Area	
Inspection stations	\$ 98,138
Surveying	\$ 9,000
Education and Awareness	
Public Information Plan (FWP)	\$ 95,127
MDA efforts	\$ 12,590
Local Efforts	\$ 15,500
Total Budgeted Amount	\$465,963

The total budgeted amount listed above does not include equipment purchases, personnel (coordinator, inspectors, technician), or general operating.

While funding was provided to support two FTE, the administrative/technical position was not initially hired. It seemed reasonable to hold off hiring the position until efforts exceeded the Department of Agriculture, Pest Management Bureau's capacity to provide administrative support. Funding for this position has been used to support AIS activities and efforts. The Department of Agriculture has requested, through Decision Package NP 3008, \$667,000 in one time only general fund for the next biennium.

In addition to the funding provided by the legislature, the state has partnered with others who have contributed funds and other resources critical to protecting the state against invasive species. Avista contributed \$15,000 in conjunction with \$30,000 from the Idaho Department of Agriculture to fund a Eurasian Watermilfoil (EWM) management area inspection station on Highway 200 at Clark Fork and provided other resources supporting the Noxon/Cabinet Gorge EWM Task Force efforts. The Noxious Weed Trust Fund provided grants to Sanders County and the Department of Agriculture totaling \$302,979 in 2009 and 2010 to address EWM. Broadwater, Valley, Lincoln, Gallatin, Jefferson, Madison, and Flathead Counties were involved in survey detection work, monitoring, and EWM emergency response in 2010. The Department of Fish, Wildlife and Parks conducted additional surveys that helped identify additional EWM sites within the state. Broadwater County, Valley County, DRNC, FWP, Army Corps of Engineers, and other stakeholders worked together in addressing EWM infestations. DNRC secured \$12,500 in funding to contract with ACE Diving for removal of EWM infestations at the

Toston Dam site. The drivers removed 1,316 pounds of EWM at the site in mid-October 2010, (figure 10).



Figure 10 EWM Removal By Divers From Toston Dam Site

The Army Corps of Engineers conducted EWM surveys and is working on an environmental assessment for EWM infestations associated with Fort Peck Reservoir. Broadwater, Ravalli, Lincoln, Beaverhead, Mineral, and Lewis and Clark County Weed Districts partnered with the Department of Agriculture in

conducting invasive species inspection stations. The Department of Transportation has provided signage valued at \$20,905 for permanent invasive species signs (Figure 11) at major entry points into the state and for inspection station efforts. Both FWP and Broadwater County

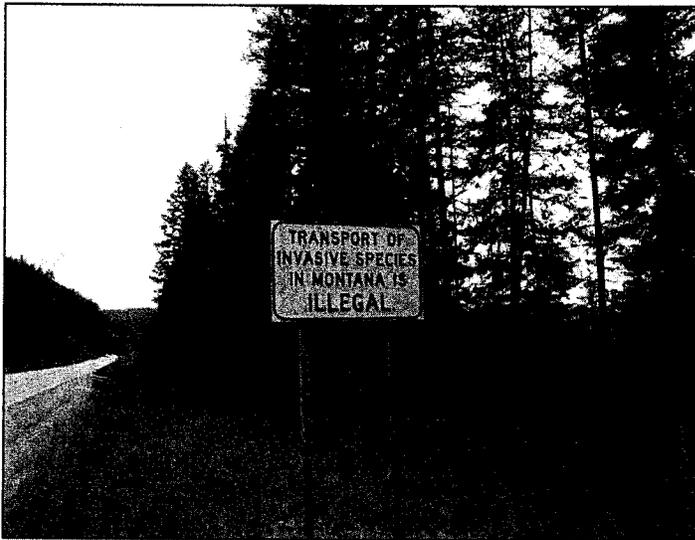


Figure 11 Permanent Invasive Species Signs

provided EWM signage. The Department of Agriculture has applied for Cooperative Agriculture Pest Survey funds and other USDA funding for aquatic noxious weed projects, which, if funded, will be used for future efforts. The Department of Fish, Wildlife, and Parks has received additional funding from the US Fish and Wildlife Service for early detection and monitoring in the Flathead in 2011.

The departments will continue to seek other potential resources. The Department of Agriculture is committed to identifying and securing other aquatic resources through cooperative endeavors, grants, and contributions.

The need for invasive species actions and activities that are protective of the state is critical. The described accomplishments and future plans, however, are not as protective as the agencies feel are needed. While the desire to protect the state is clear, there are limiting factors which require both agencies to make tough prioritization decisions. Funding is, as in most circumstances, a limiting factor. The departments have identified a scope of effort that

exceeds current funding availability. Both departments will be working together to coordinate and integrate efforts and to refine and adjust the scope of work to fit within the funding resources available.

Appendix A
MONTANA DEPARTMENT OF AGRICULTURE
Montana Aquatic Invasive Species List
Species of Agriculture Concern

Scientific Name	Common Name	Host	Habitat	Harmful Effects	Distribution	Primary State Jurisdiction
Pathogens						
<i>Phytophthora ramorum</i>	Sudden Oak Death	Many species affected	Multiple	Fungus causes a bleeding canker on the stem or leaf spot and twig dieback. Affected trees may survive for several years, until the crown begins to die.	Not known to occur in MT, known to occur in the US	Agriculture
Animals						
<i>Achatina fulica</i>	Giant African Snails	Numerous hosts, Parasite carrier	Riparian	The snail carries a parasite causing meningitis, which can be contracted by contact of mucus with human mucus membranes (eyes, nose, and mouth).	Exotic to the US	Agriculture
<i>Achatina achatina</i>	Giant Ghana or Tuger Snails	Numerous hosts, parasite carrier	Riparian	The snail carries a parasite causing meningitis, which can be contracted by contact of mucus with human mucus membranes (eyes, nose, and mouth).	Exotic to the US	Agriculture
<i>Cantareus apertus</i>	Green Burrowing Snail	Plants	Riparian	The snail can significantly damage a wide range of plants, including most leafy vegetables, cereal crops, lupins, pasture grasses and native plants.	Unknown	Agriculture
<i>Cermeuella virgata</i>	Cermeuella Snail	Plants	Riparian	The snail is a pest of cereal crops and pastures. It is also an intermediate host of several nematodes and trematode parasites of livestock.	VA, NC	Agriculture
<i>Cornu aspersa</i>	Brown Garden Snail	Cereals, Vegetables, Flowers and Trees	Riparian	Consumes leaves and may totally consume seedlings. Low growing plants suffer the most damage, but can also be a pest in citrus orchards.	Eastern & Western Coastal States into BC	Agriculture
<i>Helix pomatia</i>	Pulmonate Snail	Plants	Riparian	The snail can significantly damage a wide range of plants.	Unknown	Agriculture

<i>Otala lactea</i>	Lactea Snail	Plants	Riparian	The snail is a significant agricultural pest.	Limited distribution in SE US	Agriculture
<i>Pomacea canaliculata</i>	Channeled Apple Snail	Plants	Riparian	Had caused \$1,200 million worth of damage to aquatic crops in the Philippines.	Mid west and southern US, and spreading	Agriculture
<i>Theba pisana</i>	White Garden Snail	Ornamental, Crop, Cereal, Grapevines and Garden plants	Riparian	Has destructive feeding habit that leaves trail of slime that may inhibit flower pollination and degrade the quality of fruits and vegetables. Crushed snails may block farm equipment. Acts as a host for lungworm and other nematodes that are parasites of sheep and cattle.	California and Southern US primarily affected	Agriculture
<i>Cermeuella spp</i>	Exotic Snails	Grain, Beans, Sunflowers, Hardwood and Softwood Trees	Riparian	Snails consume crops and climb plants, making harvesting difficult and spoiling the product. They may also carry plant, animal, and human diseases.	Exotic to the US	Agriculture
<i>Dreissena polymorpha</i>	Zebra Mussel	N/A	Aquatic Environment	Potential to severely impact agriculture by impacting water infrastructure through colonizations that reduce flow, clog pumps, trash racks, pipes, gates and diversions.	Not known to occur in MT, known to occur in the US	Fish Wildlife & Parks
<i>Dreissena rostriformis</i>	Quagga Mussel	N/A	Aquatic Environment	Potential to severely impact agriculture by impacting water infrastructure through colonizations that reduce flow, clog pumps, trash racks, pipes, gates and diversions.	Not known to occur in MT, known to occur in the US	Fish Wildlife & Parks
Plants						
<i>Lythrum spp</i>	Purple Loosestrife	N/A	Riparian Wetland	Displaces native plants and animals.	Limited distribution within MT	Agriculture
<i>Butomus umbellatus</i>	Flowering Rush	N/A	Aquatic Environment	Displaces native plants and animals.	Limited distribution within MT	Agriculture
<i>Polygonum cuspidatum</i>	Japanese Knotweed	N/A	Riparian	Displaces native plants and animals. Can reduce property values.	Limited distribution within MT	Agriculture

<i>Polygonum sachalinense</i>	Giant Knotweed	N/A	Riparian	Displaces native plants and animals. Can reduce property values.	Limited distribution within MT	Agriculture
<i>Polygonum polystachyum</i>	Himalayan Knotweed	N/A	Riparian	Displaces native plants and animals. Can reduce property values.	Limited distribution within MT	Agriculture
<i>Egeria densa</i>	Egeria	N/A	Aquatic Environment	Overgrows in lakes causing dense mats and stands that displace native plants, degrade fish habitat and water quality and interferes with recreation. Can reduce property values.	Not known to occur in MT, known to occur in the US	Agriculture
<i>Hydrilla verticillata</i>	Hydrilla	N/A	Aquatic Environment	Hydrilla causes major water use problems. In canals it greatly reduces flow and causes clogging, which can result in flooding and damage to canal banks, structures, and pumps. In utility cooling reservoirs, disrupts flows necessary for adequate water-cooling. Hydrilla interferes with commercial vessel navigation, recreational boating and swimming. Ecologically, it displaces native vegetation communities, effects water quality, affects sportfish populations and can reduce property values.	Not known to occur in MT, known to occur in the US	Agriculture
<i>Myriophyllum spicatum</i>	Eurasian Watermilfoil	N/A	Aquatic Environment	Interferes with commercial vessel navigation, recreational boating and swimming; displaces native vegetation, impacts water quality, affects sport fish populations and can reduce property values.	Limited distribution within MT	Agriculture
<i>Iris pseudacorus</i>	Yellow Flag Iris	N/A	Aquatic Environment	Poisonous if ingested and irritating to the skin. Displaces native species and alters waterways.	Limited distribution within MT	Agriculture
<i>Tamaricaceae spp.</i>	Saltcedar	N/A	Aquatic Environment	Large plants use up to 200 gallons of water a day, reducing or eliminating water flow; out competes native plants, degrades habitat; reduces recreational and agricultural use, and increases wildfire frequency.	Wide Spread Distribution in MT	Agriculture
<i>Potamogeton crispus</i>	Curley Pondweed	N/A	Aquatic Environment	Dense mats interfere with recreation; limit growth of native aquatic plants, affects water quality, and impacts sport fish populations	Wide Spread Distribution in MT	Agriculture

Appendix B

MONTANA FISH, WILDLIFE and PARKS
Montana Aquatic Invasive Species List

(Prohibited Exotic Wildlife ARM 12.6.2215 and invasive fish pathogens)

Scientific Name	Common Name	Host	Habitat	Harmful Effects	Distribution	Primary State Jurisdiction*
Mollusks						
<i>Dreissena polymorpha</i>	Zebra Mussel	N/A	Aquatic Environment	Potential to severely impact water infrastructure through colonization that reduces flow and clog pumps, trash racks, pipes, gates and diversions. Displaces native mussel species	No confirmed occurrence in MT, known to occur in the US	Fish, Wildlife & Parks
<i>Dreissena rostriformis</i>	Quagga Mussel	N/A	Aquatic Environment	Potential to severely impact water infrastructure through colonization that reduces flow and clog pumps, trash racks, pipes, gates and diversions. Displaces native mussel species	No known occurrence in MT, known to occur in the US	Fish, Wildlife & Parks
<i>Potamopyrgus antipodarum</i>	New Zealand Mudsnaills	NA	Aquatic Environment	Population densities degrade habitat and impact of invertebrate food sources; has little nutritive value to fish as a food source	Established populations in Montana	Fish, Wildlife, & Parks
Amphibians						
<i>Xenopus laevis</i>	African Clawed Frog	NA	Aquatic Environment	Competes with and preys on native species	Found in isolated locations in MT	Fish, Wildlife & Parks
<i>Rana catesbeiana</i>	North American Bullfrog	NA	Aquatic Environment	Compete with and prey on native	Established in several locations in MT, particularly the Yellowstone drainage	Fish, Wildlife & Parks

Crustaceans						
<i>Orconectes rusticus</i>	Rusty Crayfish	N/A	Aquatic Environment	Potential to eliminate native <i>Orconectes</i> species; serious negative impacts on macrophyte populations; susceptible to a variety of bacteria and viruses which could be introduced to other crayfish species	Not known to occur in MT, native to North America	Fish, Wildlife & Parks
Fish						
<i>Hypophthalmic nobilis</i>	Bighead Carp	N/A	Aquatic Environment	Compete with native species for forage and habitat	Not known to occur in MT, present within Missouri River Basin	Fish, Wildlife & Parks
<i>Hypophthalmic molitrix</i>	Silver Carp	N/A	Aquatic Environment	Compete with native species for forage and habitat	Not known to occur in MT, present within Missouri River Basin	Fish, Wildlife & Parks
<i>Mylopharyngodon piceus</i>	Black Carp	N/A	Aquatic Environment	Serious threat to native mussels of North America, many of which are considered to be threatened or endangered.	Not known to occur in MT, present within North America	Fish, Wildlife, & Parks
<i>Ctenopharyngodon idella</i>	Grass Carp	N/A	Aquatic Environment	An herbivorous fish that can become very invasive and dramatically impact aquatic habitats by removing substantial amounts of aquatic vegetation.	Known. populations have been eradicated from MT, no known populations currently exist in MT. Occurs throughout North American	Fish, Wildlife & Parks

<i>Gymnocephalus cernuus</i>	Eurasian Ruffe	N/A	Aquatic Environment	In Europe, ruffe feed on whitefish eggs and compete with other more desirable fish. Spiny dorsal fin discourages predation by other fish. Yellow perch populations in Lake Superior have declined by 75%	Not known to occur in MT, known to occur in the Great Lakes	Fish, Wildlife & Parks
<i>Neogobius melanostomus</i>	Round Goby	N/A	Aquatic Environment	Competes with native bottom-dwelling fish, preys on darters and other small fish and, in laboratory experiments, also preys on lake trout eggs and fry; causes decline in native fish species where goby is abundant.	Not known to occur in MT, known to occur in North American	Fish, Wildlife & Parks
Genus <i>Channa</i> and <i>Parachanna</i>	Snakehead Fish (29 species)	N/A	Aquatic Environment	Predatory fish that can compete with native and recreationally important fish species of Montana.	Not known to occur in MT, known to occur in North America	Fish, Wildlife & Parks
<i>Clarias batrachus</i>	Walking Catfish	N/A	Aquatic Environment	An omnivorous invasive species	Not known to occur in MT, known to occur in North America	Fish, Wildlife & Parks
<i>Sander lucioperca</i>	Zander	NA	Aquatic Environment	Displacement, predation, and hybridization with walleye and sauger	Not known to occur in MT, present within the Missouri River Basin.	Fish, Wildlife & Parks
Mammals						
					Introduced, known to occur in TX, WA, OR, VA, and Great lakes area; literature report of individual animals in MT (1976) but no reproducing population	Fish, Wildlife & Parks/ Agriculture
<i>Myocastor coypus</i>	Nutria	N/A	Aquatic/Riparian Environment	Pest species known to disrupt irrigation systems, destroying native aquatic vegetation, and crops. The disturbance of native biota provides an opportunity for non-native plant species to become established.		

Invasive Fish Diseases, Parasites, and Viruses

<i>Viral Hemorrhagic Septicemia Virus</i>	VHS Virus	Virus of cold and warm water fish	Aquatic Environment	Deadly infectious fish disease that infects more than 50 fish species. Infection results in muscle lesions that can cause serious harm to fish. First found in yellow perch but may also be found in walleye, northern pike, flathead minnows, and other species.	Not known to occur in MT, present within the Mississippi River Basin	Fish, Wildlife & Parks
<i>Heterosporosis Infectious Hematopoietic Necrosis Virus</i>		Parasite of perch and other fish species	Aquatic Environment		Not known to occur in MT, present within North America	Fish, Wildlife & Parks
<i>Myxobolus cerebralis</i>	IHN Virus	Fish pathogen	Aquatic Environment	If introduced, has the potential to cause serious fish mortality.	Known to occur in states west of MT	Fish, Wildlife & Parks
	Whirling Disease	Metazoan parasite of fish and oligochaete worms	Aquatic Environment	Causes significant skeletal deformities in Salmonid species, known to impact rainbow trout populations in the Madison and Missouri River.	Established throughout Western Montana.	Fish, Wildlife & Parks
<i>Bothriocephalus acheilognathi</i>	Asian Tapeworm	Parasite of fish	Aquatic Environment	Difficult if not impossible to eradicate; affects many species of game, forage, and bait fish; reduces growth and results in poor condition of fish once infected	Not known to occur in MT, known to occur in the US	Fish, Wildlife & Parks