

MENOMINEE COUNTY/TRIBE/MTE
INVASIVE SPECIES MANAGEMENT PLAN



**Spotted knapweed control area that is repopulating with natives in
Menominee County**

June 2014

Signature page

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Introduction and Background

Invasive species are categorized as species of plants, animals, fungi and microorganisms that can cause major disruptions in local ecosystems. Invasive species are exotic to the ecosystem they are populating. In many instances, invasive species will out-compete native species, which in turn may affect other species that depend on the displaced native species for food and/or habitat. These interactions, stemming from successful colonization of exotic invasive species, can even lead to local extinctions of native plants or animals, some of which may already be threatened or endangered such as the federally protected, Karner Blue Butterfly.

Consistent with the Menominee Indian Tribe of Wisconsin (MITW) Strategic Plan and the “County/Town of Menominee Comprehensive Plan 2030”, a partnering approach that includes several tribal departments, Menominee Tribal Enterprises (MTE), Menominee County, University of Wisconsin-Extension (UWEX), and other interested parties were consulted to develop this invasive species plan. The plan needs to be adaptive as new threats emerge, such as black swallow-wort. The plan will be used to prevent the introduction and help control aquatic and terrestrial invasive species within Menominee Reservation/County. Many other organizations and citizens have been partners in this effort. An effective management plan in Menominee will require cooperation from local, state and federal government programs, along with lake districts, lake associations and citizen volunteers. An example of external partnerships includes the Timberland Invasives Partnership (TIP), which is a cooperative weed management area that includes the surrounding counties of Shawano, Langlade and Oconto. MITW, MTE, UWEX and Menominee County are all part of the TIP through its formal MOU.

The main areas affected by invasive species within Menominee are highly traveled corridors and residential areas. These are pathways of introduction where humans have introduced invasive species into the area. The main travel corridors within Menominee are State Highways 47 and 55, and county roads M and VV. Maintenance along road corridors has been identified as a primary vector for the spread of invasive species. Residential areas with the highest potential for introduction of invasive species are the Legend, Moshawquit, Southeast Bass, Round, Keshena and LaMotte Lake areas. Additionally, given the high percentage of seasonal residences there is significant additional potential of introduction of invasive species into Menominee. The rest of the Reservation/county is primarily sustained yield forest lands with scattered developed Trust and private parcels where there is lower potential for introduction. There is also the possibility of local people moving species about the reservation through intentional and unintentional means. Examples include dumping of contaminated material (e.g. soil from worm digging, forest products, bilge water) or driving through infestations which can lead to spread of invasive species propagules.

Other invasive species are introduced through natural means, such as their own dispersal mechanisms, wind, and birds. Gypsy moth, emerald ash borer, oak wilt, and annosum root rot are capable of advancing through forested areas by natural dispersal. Although the spread of these species can certainly be accelerated through human activities, it should be recognized that many species will move into the Reservation through natural

spread. Therefore, emphasis on reducing the susceptibility of the forest to the spread of invasive species should be addressed through integrated pest management techniques (e.g. cutting bans and/or precautions on oak and pine during highly susceptible time periods).

Aquatic and terrestrial invasive species have been appearing in Menominee County/Reservation over the last few decades . Some of the recently found plant invasive species include Eurasian water-milfoil (EWM), leafy spurge, spotted knapweed, wild parsnip, Japanese knotweed, common reed, garlic Mustard, buckthorn, honeysuckle, and curly-leaf pondweed. Although EWM was only first discovered in 2002, it is currently widespread in Legend Lake and has spread to Moshawquit Lake. Controls starting in 2004 were minimally effective, but with continued effort and treatment the EWM stands have been significantly reduced in Legend Lake and Moshawquit Lakes. Controlling the spread of EWM will take additional cooperation from local partners and require additional grant funding. The tribe, state, county and lake district have worked collaboratively on this threat with great success that we hope to use as a model for other invasive species actions. A new and significant concern is zebra mussels that were found in Moshawquit Lake summer of 2008 and in the eastern basins of Legend Lake in fall of 2008.

Some invaders have been established for several years and will take major efforts to contain and/or eradicate. species that are in this category are Eurasian honeysuckles, purple loosestrife, garlic mustard, and spotted knapweed. Eurasian honeysuckles are prevalent around residential areas, abandoned homesteads and adjacent natural areas; Purple loosestrife is widespread along the entire reach of the Wolf River within Menominee; garlic mustard is prevalent along state highway 47 north of Neopit, scattered patches along highway 55, and within sustained yield forest lands of the Reservation; and spotted knapweed is widespread around Keshena, Legend Lake and highway corridors. These species, as well as the other invasives threatening Menominee County/Reservation, are described in more detail later in this document.

Gypsy moth is another invasive that has been in Menominee for at least fifteen years. It causes major defoliation of many trees and shrubs in early-summer. It can lead to increased mortality in many tree species it prefers to feed on, such as oak and aspen. The county and tribe have been working to control this pest since 2001 with good success. MTE manages the forest to ensure maximum tree vigor, which reduces the likelihood of mortality occurring during an outbreak. This collaborative approach is the key to maximizing our efficiency and efficacy in controlling these threats.

Public Awareness and Education

Educating citizens is integral to slowing or stopping the spread of invasive species. Citizens need to be made aware of the critical roles they play and steps they should take to minimize the chance of their introducing and spreading invasive species in Menominee County/Reservation. The Tribe plans to use mechanisms already in place to raise public awareness, as well as engage in public education. First, the tribe will partner with the county to use the existing Menominee County Land and Water Resource Management

Plan (LWRMP). Second, the tribe will partner with the county using the “County/Town of Menominee Comprehensive Plan 2030” which addresses invasive species issues of concern. The guidance given within the work plan of the LWRMP is to educate the public on invasive species awareness and help control spread. Lastly, the tribe will take advantage of the resources of the Wisconsin Department of Natural Resources (WDNR), WI Department of Agriculture Trade and Consumer Protection (WI-DATCP), UWEX, United States Department of Agriculture (USDA) State and Private Forestry, US Fish and Wildlife (USFWS), Animal Plant Health Inspection Service (APHIS), Natural Resource Conservation Services (NRCS), United States Department of Interior (USDOJ), Bureau of Indian Affairs (BIA), and other agencies through their programs, funding and informational brochures.

There are five education resource centers in Menominee Nation where information is made available for the public to learn more about invasive species. The five centers are the Menominee County Land Conservation Department (LCD), UWEX office, Legend Lake Lodge, College of Menominee Nation and Menominee Forestry and Environmental Services Center.

Prevention, Early Detection, and Rapid Response

The prevention of invasive species introduction and controlling the spread of established invasive species within the county/reservation is critical to our efforts. Keeping invasive species out of new areas will save labor hours, dollars and habitats from being degraded or lost. Some species cannot be eradicated once established so prevention is the only viable approach to preserving habitat and indigenous species. The time and money spent on prevention education is minor compared to control costs. As mentioned in the previous section, active education of the public on prevention methods is a key component of this plan and needs to be a high priority. Acquiring adequate funding will be a critical component in the success of these tasks.

Early detection of new infestations of invasive species will come from several sources. The LCD, Environmental Services Department (ESD), MTE, Tribal Conservation, and citizen volunteers will be observant for new outbreaks of invasive species. Many other entities such as the County Highway Department and the Legend Lake Protection and Rehabilitation District (LLPRD), WI-DNR, with assistance from volunteer groups and the public will be relied upon to report any newly discovered invasive species infestations.

After a discovery of an invasive species, rapid response is important for giving us the best chance at eradication. The LCD will take the lead in organizing personnel and supplies that will be needed for a rapid response control program for the county and ESD, Conservation and MTE will take the lead for all sustained yield lands. The lead agency will partner with one or more of the departments/organizations listed above. Lake associations and other affected members will be included as partners as the need arises. Treatment options of newly discovered invasive species may include herbicide treatment. See Appendix 6 for protocol of treatment.

The entities involved will maintain a common public reporting form of possible invasive species. If one agency is notified by the public, a form must be filled out and routed to all partner agencies identified in this plan. The notifications will be provided to all workgroup members to ensure that all members are kept aware of activities in Menominee. A decision will be made at that time to determine which entity is charged with verification and what the next step will be. Please refer to appendix 2 for a copy of the form.

High Potential for Invasive Species

Here is partial list of invasive species that have a high potential to infest Menominee:

Terrestrial Species:

Emerald ash borer	Multiflora rose	Celandine	Porcelain berry
Annosum root rot	Oriental bittersweet	Mile-a-minute vine	Thistles
Hemlock wooly adelgid	Kudzu	Hedge-parsleys	Wineberry
Asian longhorned beetle	Swallow-worts	Teasels	Giant hogweed
Japanese stilt grass	Chinese yam	Tree-of-heaven	Japanese hops
Giant knotweed	Wild chervil	Hill mustard	Creeping bellflower
Hemlock woolly adelgid			

Aquatic Species:

Flowering rush	European frog-bit	Manna grass	Silver carp
Hydrilla	Water chestnut	Didymo or rock snot	Asian carp
Water chestnut	Fanwort	Brittle waternymph	White perch
Brazilian Waterweed	European marsh thistle	VHS	Spiny and fishhook water fleas
Parrot feather	African elodea	Sea lamprey	Round goby
Yellow floating heart	Australian swamp stonecrop	Quagga mussel	Ruffe

*Neither of the above tables represents an all-inclusive list of potential invaders of Menominee lands or waters.

Presence and Extent of Invasive Species

As of 2014, the following invasive species have been documented as present with in Menominee:

Terrestrial Species:

Spotted knapweed	Wild parsnip	Spurges	Common tansy
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Gypsy moth	Oak wilt	Reed canary grass	Norway maple
Japanese barberry	Garlic mustard	Honeysuckles	Basswood thrips
Autumn olive Buckthorn	Japanese knotweed		
Dutch elm disease	Introduced pine sawfly	European shoot moth	European pine sawfly
Larch casebearer			

Aquatic Species:

Eurasian water milfoil	Common or Giant reed(<i>Phragmites</i>)	Curly-leaf pondweed	
Purple loosestrife	Zebra mussels	Narrow-leaf cattail	

Mapping is on-going for invasive insects, diseases, and weeds such as garlic mustard, oak wilt, buckthorn, phragmites, leafy spurge, curly leaf pondweed and EWM. Surveys and mapping are done using GPS with the help of the Menominee County Graphic Information Systems (GIS)/Land Information office for LCD. MTE has GIS personnel that can create digitized maps of invasive species present on sustained yield lands. Locations of species will be updated on a continual basis and stored in GIS, which will be available to all partners. This data can be utilized in maps that will help planning for control efforts and allow comparisons to be made from year to year as controls are implemented. Maps of current species extents and completed controls can be viewed at LCD, ESD, Conservation, or MTE offices.

Monitoring

Monitoring is critical to controlling existing invasive species extent as well as identifying expansion of populations. Monitoring surveys will be completed for extent and spread of Eurasian water-milfoil, curly-leaf pondweed, zebra mussels, gypsy moth, garlic mustard, oak wilt, leafy spurge, spotted knapweed, reeds and wild parsnip. Surveys will be completed on a limited basis for purple loosestrife. The focus of purple loosestrife surveys will be to locate any new infestations, as well as determine how *Galerucella* beetle populations are progressing and if they continue to be effective.

The county LCD and MITW ESD will complete monitoring for gypsy moth, garlic mustard, leafy spurge, spotted knapweed, reeds, wild parsnip and purple loosestrife. Legend Lake will be surveyed for EWM and curly-leaf pondweed annually by a contractor through LLPRD. MITW Conservation ESD, with limited help from LCD and citizen volunteers on a few lakes, will complete aquatic invasive species surveys on all other Reservation lakes as time permits. This effort includes “Clean Boats, Clean Waters” programs that have already been started by LLPRD for Legend Lake and the Moshawquit Lake Association. MTE continually monitors the sustained yield lands and records the incidence of native pest outbreaks and invasive insects, diseases, and weeds.

LCD monitors the lakes area in South East Menominee for buckthorn each fall when the leaves are still green and other species have had leaf drop.

Additional monitoring will be conducted through on the job awareness by MTE and County Highway Department field staff. WDNR will also be active in identification . Foresters and loggers for MTE will need to be consistently looking for new infestations of garlic mustard, buckthorn, honeysuckles and other invasive plants. MTE GIS databases need to be updated to reflect current species and their extents known. At a minimum, annual training should be completed to update MTE workers and identify any new invasive they need to be looking for. The timing for training should take into consideration species-specific life cycles. Sharing any possible discoveries with personnel also promotes training opportunities.

Menominee County, MITW and MTE will work together on a regular basis to share all GIS mapping information related to invasive species. Coordination of this sort is crucial to developing and implementing control activities for invasive species management. At a minimum, data should be synchronized before the start of each field season, and standards will be implemented to ensure consistency in data collection and mapping criteria.

Infestation Management/Controls

The distribution of known invasive species of major concern will require the implementation of complete surveys and mapping. As mentioned earlier, surveying and mapping have occurred, as well as control work for some species. The following list contains each invasive species, the history of occurrence, recommended controls and other actions to be taken. Appendix 1 will provide a description of the current known extent of invasive species, and what treatments have been implemented since 2009. Parties will update this appendix annually.

Aquatic Species:

Eurasian Water-Milfoil - *Myriophyllum spicatum* – EWM was found in Legend Lake for the first time in 2002. It was presumed present for at least one to two years prior based on the number of areas found infested. In 2006 as many as 660 acres of EWM infested Legend Lake; with treatment in 2009 the acreage number is down to 156. In 2007 approximately an acre of EWM was also found and treated in Moshawquit Lake. Although the acreage is still small it has increased to nine acres.

Preventing the spread of EWM to other county/reservation lakes is very important. An education campaign has been started to inform local citizens of the problem and how they can help prevent spreading EWM to other lakes. Legend Lake also has a Clean Boats/Clean Waters program run by LLPRD to inform boaters of the importance of cleaning boats and trailers when leaving lakes. We will have to continually monitor other

county/reservation lakes to ensure that any new infestations are caught early enough to make controls easier.

Chemical treatment with 2,4-D will continue to be the main action to control EWM where it has become established. The best source for EWM control information will be available in two separate documents put together by contractors for LLPRD titled Legend Lake Aquatic Plant Management Plan and Legend Lake Eurasian Water-milfoil Treatment Plan. Copies of these plans, with maps, are available for viewing at the LCD office and the Legend Lake Lodge.

Purple Loosestrife - *Lythrum salicaria* – Purple loosestrife is a serious concern because it displaces native wetland plants and can become the dominant plant, thereby reducing species diversity and changing the ecosystem of a wetland. A single purple loosestrife plant with multiple stems can produce between one and two million seeds that are easily dispersed along rivers and waterways. Even a few purple loosestrife plants pose a serious threat to an entire wetland.

Possible controls are hand pulling/digging, chemical, and biological controls. The first two options are only viable on small sites, such as pioneering plants that have seeded in from another infestation. Chemical controls with glyphosate and triclopyr, both in the formulation for use near water, have proven effective in other areas of the State. Foliar treatment must be done very carefully to minimize drift and effect on non-target species. Bundled cut stem applications are more labor intensive, but will work well on small sites and have less chance of affecting other plants.

Biological controls have been well tested and documented to be safe for Wisconsin use with *Galerucella sp.* beetles. These insects will not eradicate loosestrife, but have been shown to significantly reduce the population so cohabitation with native species becomes a possibility. The beetles feed primarily upon purple loosestrife and have a low preference for a few native *Decodon* and *Lythrum* species. The risk to these native species was determined to be far greater if we did nothing, because their habitat would be overrun by purple loosestrife.

In 2002, the Menominee Tribe began the initial phase of introducing biological control agents, *Galerucella californiensis* and *Galerucella pusilla*. The current extent along the Wolf was partially surveyed in 2005 by LCD and ESD and it was determined that purple loosestrife infests a majority of the extent of the Wolf River in Menominee. There are a few small sites away from the Wolf as well in the Legend Lake area.

The Menominee Tribe has seen the best results using biological control of purple loosestrife. In summer, when the plant is flowering, personnel are able to put a net over purple loosestrife with leaf eating beetles, and have been successful moving them to sites infested along the Wolf River. This effort is showing positive results. The best way to continue purple loosestrife control in Menominee is to promote spread of the beetles by both natural population expansion and with net capture transfer of beetles.

Curly-Leaf Pondweed - *Potamogeton crispus* – Curly-leaf pondweed is an aquatic invasive plant that forms surface mats that interfere with aquatic recreation and hampers native aquatic plant growth. The plant usually drops to the lake bottom by early July. Curly-leaf pondweed was the most severe nuisance aquatic plant in Wisconsin until Eurasian water-milfoil appeared.

It was first found in Peshtigo Lake (a northern basin of Legend Lake) in 2004. It is in several small areas and control will be addressed along with Eurasian water-milfoil by LLPRD and MITW within the Legend Lake Aquatic Plant Management Plan. CLP was first noted in Moshawquit Lake in 2010 and is being addressed along with EWM by Moshawquit Lake Association and MITW.

Zebra Mussel - *Dreissenia polymorpha* – The zebra mussel is a tiny (1/8-inch to 2-inch) bottom-dwelling clam native to Europe. The mussel takes its name from its striped shell. They were first found in Wisconsin waters of Lake Michigan in 1989. They spread throughout the Great Lakes and are now found in a number of inland Wisconsin waters, including Shawano Lake recently. Particular concern relates to their potential impacts on aquatic food chains, native clams and Wisconsin's fisheries. Adult zebra mussels have been found in both Legend Lake and Moshawquit Lake in the Reservation/County. Public education must be enhanced to teach boaters and fishermen how they can prevent spreading this aquatic invasive animal.

The ESD along with help from WDNR has surveyed occasionally for veligers, the larval form of zebra mussels. There is a surveying method with equipment that should be used. Monitoring effort should start as soon as possible in other high use lakes, in County/Reservation.

Common Reed - *Phragmites australis* – The exotic common reed has become a major threat to wetlands in Wisconsin. A native species is also invasive but it is uncommon. Preventing spread of these species can be achieved by public education to restrict the spread of these highly invasive plants. They invade wet areas such as marshes, ditches and shorelands. These reeds can out-compete native species and create large monotypic stands.

These reeds were found for the first time in Menominee in 2005. The small stand found north of Neopit along Highway 47 is a small patch in the ditch approximately 15 feet by 30 feet. A second patch was found in March 2006 along highway VV west of Keshena near Max Martin Road. This small patch is within a wetland approximately 50 feet north of highway VV and is about 10 feet by 30 feet in size. As of 2009 the patches have only spread slightly by underground runners. More recent finds include; a stand adjacent to Rainbow Falls Road southeast of Neopit just south of the powerline in the wetland previously flooded by beaver, Minnow Creek Road just west of the Old South Branch intersection at the small lake on the south side of the road and a small stand located adjacent to the ponds in the old Vigues Trout Ponds highway 55, just a few hundred feet east of the Wolf River.

One control method proven fairly effective elsewhere that can be implemented is a combination of stem cutting in late July and glyphosate (for use near water) stem applications immediately following. Bundling before cutting stems make the application easier. This can be an effective control method for small populations before they become too large to treat in this manner. The dead reed stalks should then be cut back several weeks later to stimulate growth of native plants in the area. The control method that has been effective in Menominee from 2012-2013 has been foliar treatments in June or July. Glyphosate (Rodeo®) is used to treat the leaves of the plants during active growth in summer. This has proven to reduce the stands significantly in the two years it has been implemented. This will be the primary control method to keep these stands under control.

Miscellaneous aquatic invaders listed in *Prevention and Early Detection Section*

Prevention of species entering Menominee waters will be done mainly through public education and outreach. A Clean Boats Clean Waters program has been undertaken by LLPRD over the past few years and will continue. This program, along with LCD, WDNR programs and Menominee's Invasive Species Collaborative should help educate the public about controlling the spread of these aquatic invasives. If any of these species are positively identified within Menominee, a species specific management plan will be devised at that time with all applicable agencies involved.

Terrestrial Species:

Garlic Mustard - *Alliaria petiolata*– Garlic mustard grows in upland and floodplain forests, savannas, yards, and along roadsides, occasionally in full sun, but is shade-tolerant and generally requires some shade. In Menominee, it is found primarily along the State Highway 47 and Highway 55 corridors, although other isolated small-scale infestations have been discovered and treated annually. It is mainly found in the right-of-way, but has spread into the forest, especially along forestry roads. Garlic mustard was also found in two small locations near Legend Lake in 2004 and was hand pulled before seed release.

All locations along Highway 47 and within the sustained yield forest are mapped annually by MTE. There is a garlic mustard control plan developed by MTE and MITW implemented each year for the controls including hand pulling and chemical control with glyphosate. We will continue to utilize mechanical and chemical controls (glyphosate) for garlic mustard throughout the period of this plan. Hand pulling and digging, before seed release when possible, will continue for any new patches that are encountered. We will update maps annually as well to compare with previous years to determine how effective control efforts are. Additional surveys will be required along main corridors throughout the county/reservation each spring during flowering stage to find any new populations.

Local experience with control efforts indicates that it is most effective if multiple treatments are conducted each year. Starting in early spring, first-year rosettes can be treated with herbicide before the leaf-out of native plants, spot-treatments and hand pulling is effective in removing older plants that were missed during the initial spring

treatment. This must be completed before seedpod maturation in mid-July. If possible, another herbicide treatment on emerging rosettes in the fall may be performed after native plants have gone dormant.

Gypsy Moth - *Lymantria dispar* – Control for gypsy moth will continue as it has since 2001. Egg mass surveys will be completed each year by the LCD in August – September throughout the southeastern portion of the county/reservation where the majority of preferred host species are present (oak species) and housing is most concentrated.

Landowners can be made aware of actions to take to lower populations on small tracts of land. On a larger scale, egg mass surveys will help determine areas infested with large amounts of gypsy moth that are eligible for aerially treatment with Gypchek® through the WDNR grant/control program.

MTE limits the effect of gypsy moth and other defoliators on the Menominee forest by emphasizing the management of stands to maximize the health of individual trees (i.e. those not growing under suppressed and stressed conditions). Healthy stands have been proven to be much less susceptible to higher-than-normal levels of mortality than those under suppressed conditions.

Spotted Knapweed - *Centaurea biebersteinii* – Spotted knapweed often attains high densities on sunny wild lands--even ones undisturbed by humans. Knapweed tends to dominate sites at the expense of community diversity, and is negatively impacting wild lupine patches (Karner Blue Butterfly habitat) in several locations within Menominee. Knapweed infestation can also increase surface run-off and sedimentation due to its poorly developed root system.

Known knapweed infestations include the southeast portion of the County/Reservation and in Keshena. The Legend Lake and Southeast Bass Lake area have had the most invasion of knapweed, mainly in right-of-way areas. LCD has been hand pulling and treating with triclopyr since 2007 to reduce threat to native species. The MITW has hand pulled and treated additional areas with glyphosate in 2013 (see appendix 1).

For newly discovered infestations, the most effective control is early detection and removal of pioneering plants. Small populations can be removed by digging or pulling. This is best done where the soil is moist and the entire root can be removed. For existing areas where populations are too large for mechanical removal, hot prescribed burns that remove most of the duff layer can reduce knapweed numbers. Plants that resprout can be hand pulled or spot treated with glyphosate or triclopyr. Reseeding with native species for that habitat type should then be done to help native populations reestablish.

Where burning is not appropriate, mowing just before flowers bud in July will stress plants and make them more susceptible to herbicide treatments with triclopyr or glyphosate. This combination of mowing followed by selective herbicide treatment with triclopyr will be a control method of spotted knapweed around Legend Lake.

Leafy Spurge - *Euphorbia esula* – Leafy spurge is a deep-rooted, Eurasian perennial that is adapted to a wide range of conditions. The plant occurs primarily in non-cropland habitats, including roadsides, prairies, savannas, and woodlands. It is tolerant of a wide range of habitats, from damp to very dry soils. In Wisconsin it is usually found in lighter, dry soils.

Leafy spurge has only been found in two small roadside locations (Old South Branch Road near Northstar addition to Legend Lake and along Rushes Lake Road) in 2004 and 2009 respectively. Both sites were immediately mapped and hand pulled/dug out to remove roots as well. In the second year, the sites were mapped and then chemically treated with glyphosate. There have been a few plants encountered at each site per year up to 2013. We will complete roadside surveys in that area each year and manually remove any plants encountered and use chemical control with glyphosate. Continual annual control has kept leafy spurge contained to just a few scattered plants at each site. If other small patches are found, digging will be considered, as well as chemical control to spot treat plants. An online manual from USDA can be consulted at <http://www.team.ars.usda.gov/herbicidemanual.pdf> for more control information.

Cypress Spurge – *Euphorbia cyparissius* – Cypress or graveyard spurge is very similar to [leafy spurge](#) but is generally a smaller plant, has narrower leaves, and blooms earlier than leafy spurge. It can form large colonies and is becoming a quite common weed in open areas and woodland edges that receive adequate sunlight.

Cypress or graveyard spurge has been found in four locations since 2010. There are two roadside sites along STH 55, one in Keshena along STH 47/55, and along CTH VV by Long Lake Road. This invader, like leafy spurge, is difficult to control as it is very persistent and hardy. Manual controls by mowing before flowering and herbicide treatments with Glyphosate can help reduce the areas at each site. Each infestation requires several years of control work to eradicate the plant from that area.

Wild Parsnip - *Pastinaca sativa* – Wild parsnip grows readily in road right-of-ways, but is tolerant of a wide range of conditions, including dry, mesic, and wet-mesic prairies; and oak openings. Wild parsnip is another species that was first found in Menominee in 2005. It was found along Highway 47 in Zoar. It was a relatively small area along the ditch right-of-way 12 feet by 154 feet. Wild parsnip has been controlled annually in Zoar and as of July 2009 it was not detected in that location. Window surveys need to continue for findings new infestations and eradicating them early. New infestations have been discovered in 2012 and 2013 within the South Branch and Keshena areas.

The best way to control wild parsnip is early detection and eradication. An effective control method in other areas of the U.S. is to cut the entire root just below ground level with a sharp shovel or spade, which should prevent resprouting. This is the control method attempted in 2005 before seed release on the infestation found in Zoar.

**Caution must be taken not to have plant juices come in contact with your skin because of possible reaction to sunlight that leads to rash and/or blistering.

If the population is too large to hand-cut or pull, a power brush-cutter can be used just after peak flowering and before the seeds set. Plants may resprout when cut above the ground, and should be cut again a few weeks later to prevent flowering. Another potential method is to burn the site, then follow with spot application of 3% active ingredient glyphosate. Immediately after a burn, wild parsnip is one of the first plants to green. Glyphosate can be spot applied to the basal rosette of the parsnip with little effect on dormant species.

Exotic Honeysuckle - *Lonicera spp.* – Bush honeysuckle, such as Tatarian honeysuckle (*L. tatarica*); has been located in some forestlands and around the villages within Menominee Reservation. Their vigorous growth inhibits development of native shrub and ground layer species; eventually they may entirely replace native species by shading and depleting soil moisture and nutrients.

Since honeysuckle roots are fairly shallow, small to medium-sized plants can often be dug or pulled. Plants are particularly easy to remove in spring when the soil is moist. A shovel or grubbing hoe will often loosen the roots enough to allow a fairly large plant to be pulled. Additionally, honeysuckles can be controlled by cutting the stems at the base and the stumps should be treated immediately with a 20% active ingredient glyphosate solution. Control for honeysuckles will only be completed where they are becoming numerous enough to affect forest composition and regeneration.

Autumn Olive – *Elaeagnus umbellata* – Autumn olive exhibits prolific fruiting, rapid growth, is widely dispersed by birds and can thrive in poor soil. It has the ability to produce up to 80 pounds of fruit in a single season. Due to its nitrogen fixing capabilities, it has the capacity to adversely affect the nitrogen cycle of the native communities that may depend on infertile soils.

Autumn olive was located for the first time in 2013 in the Blue Heron addition to Legend Lake. It was located along a roadside and within a LLPOA beach club. Controls were completed by cutting all plants found close to the ground and treating the stumps with systemic herbicide to prevent regrowth. All plant tops, many with fruit, were piled in an open area and burned. This area and nearby lands will be surveyed and monitored for additional plants to control.

Reed Canary Grass - *Phalaris arundinacea* – Reed canary grass can grow on dry soils in upland habitats and in the partial shade of oak woodlands, but does best on fertile, moist organic soils in full sun. This species can invade most types of wetlands, including marshes, wet prairies, sedge meadows, fens, stream banks, and seasonally wet areas.

Reed canary grass is difficult to eradicate; no single control method is universally applicable. One control method that could be used where canary grass is becoming problematic is to mow or burn the area in spring and then chemical treat the area in late August with glyphosate formulated for use near water. The area will have to be monitored for possible re-treatment and native seed planting.

There may be small areas infested with reed canary grass in Menominee; however these areas have not been mapped in any way. As time permits for the partners within this plan, large infestations encountered will be mapped, assessed and decided whether controls should be undertaken. These controls should be focused in areas where reed canary grass is threatening native biodiversity and specific habitats that should not be lost.

Buckthorns - *Rhamnus spp.* – Common buckthorn (*R. cathartica*) and glossy buckthorn (*R. frangula*) are problem species that can invade many habitat types. Common buckthorn invades the understory of oak, oak-beech, maple, and riparian woods, prairies, and savannas. It aggressively competes with local flora, mainly on well-drained soils. Glossy buckthorn is an aggressive invader of wetter soils, sometimes moving into uplands; and can grow in sun or shade.

Buckthorns are most effectively controlled by recognizing their appearance early and removing isolated plants before they begin to produce seed. With large infestations, the largest seed-producing plants should be removed first. Chemical control methods are best done during the fall when most native plants are dormant yet buckthorns are still actively growing and have green leaves. This lessens the risk of affecting non-target plants. Cutting stems off near ground level and treating them with a 20 – 25% active ingredient glyphosate solution successfully curbs sprouting.

The best defense for controlling buckthorn infestation is early detection and killing the plants before they overtake the site. It will be crucial that MTE foresters are trained to recognize buckthorns and report any plants to managers so effective control strategies are implemented as soon as possible. The County LCD will monitor and complete surveys around the Legend, Moshawquit, Round, LaMotte and Southeast Bass Lake areas annually to detect infestations early and control them.

Current extent of buckthorn is in patches around Keshena, Legend Lake, LaMotte Lake, Wolf River Circle and Max Martin Road. Controls around Legend Lake and LaMotte Lake have been ongoing since fall of 2008. Hand pulling and cut surface stump treatment with glyphosate have been used for control.

Japanese Knotweed – *Fallopia japonica* – Japanese knotweed is an aggressive invader of terrestrial areas, usually along waterways or ditches.

This stout, shrub-like plant forms large dense clumps that measure between 3-9 feet high. It reproduces by seed and by large rhizomes which may reach a length of 15- 18 feet. The stems are reddish in color, ridged, jointed and hollow. The leaves are alternate on the stem, broadly truncate at the base and 2-3 inches wide. The leaf veins are often reddish and the petioles are 1 inch long and ridged. The flowers bloom in late summer and are small and greenish white.

Two infestations were located in 2012 and 2013 respectively. The area located in 2012 is at the LLPOA compost site, which is open, sandy and dry. The area infested by knotweed in 2012 was 40 feet by 80 feet. It most likely started there due to a homeowner dumping cuttings from a yard in the fire pit to be burned in winter as the infestation is

around the edge of the pit. It is unknown where this may have originated, but there is continual monitoring around the lakes to locate any other infestations.

The area found in 2013 is along Long Marsh Road, northeast of Legend Lake. This site was located in an old dumping spot where there is a variety of trash from many years of people discarding of unwanted materials. This site was 30 feet by 40 feet when first located in 2013. It is a dry, upland site in an oak forest.

Emerald Ash Borer (EAB) – *Agrilus planipennis* – EAB is an exotic insect that is causing high mortality rates to ash trees of Michigan, northern Ohio, northern Indiana, and parts of southern Canada it has also been found in numerous WI counties. EAB attacks all ash species (*Fraxinus spp.*) regardless of health status, unlike most secondary borers that only attack stressed trees. It is native to Asia and was first discovered in southeastern Michigan in 2002.

The States of Michigan and Wisconsin and the United States Department of Agriculture have been taking Legislative actions to slow the spread of this beetle through firewood movement. Michigan has quarantines and does not allow any firewood to cross the Mackinac Bridge to the Upper Peninsula. Wisconsin has recently passed a rule that does not allow people to bring any firewood into state park or forest campgrounds.

Preventing the spread of this harmful invader is our best defense for slowing the potential spread of EAB. Information will be distributed to the public regarding firewood movement (ash in particular). Information will also be distributed on what symptoms people can look for in ash stands and who to contact in case they suspect EAB. Professional personnel for MTE, MITW and LCD will ensure that they know what signs to look for in areas where symptoms may be present on ash trees. A separate plan with WDNR and federal agencies would be completed to assure rapid response and control of this pest before it could inflict major damage to the ash resource of Menominee. Outreach to the Tribal public and the Cultural Community is ongoing, though coordination with the MITW Historic Preservation Department.

MTE is addressing this threat in two ways: First, by using EAB traps throughout the Reservation/County for early detection; second, by reducing the stocking of ash in stands where ash is found in high concentrations. While this will not necessarily eliminate the threat of EAB infestation, it will minimize the long-term impact of EAB on forest stands when the infestation begins.

Oak Wilt – *Ceratocystis fagacearum* - Oak wilt is a fungal disease, fatal to most oak trees, especially in the red oak group. It is widespread on the reservation, and while initially found almost exclusively in pin oak stands, it is increasingly being found in higher value northern red oak stands across the Reservation. Oak wilt initially infects a tree through a wound, vectored by native sap feeding beetles. Once infected, the tree is quickly killed as the fungus spreads throughout the vascular tissue of the tree, effectively stopping the flow of water and nutrients. Infected trees then pass fungal spores to nearby oak trees through root grafts. If unchecked, the infected pocket may continue to spread outward through the grafted roots and kill dozens of oaks over the course of several

years. The infected trees also serve as a source of fungus mats, or inoculum, to be picked up by beetles and further spread infection to new sites in other stands.

Oak wilt is so widespread in pin oak stands that it is impossible to eliminate and/or control on those sites. Broken branches from storms, inadvertent damage by people and vehicles, and other wounds serve as infection points for oak wilt. The risk of infection is compounded by the extensive root grafting that occurs in the sandy soils where pin oak is concentrated. A ban on cutting oak by Town Ordinance from April through October, the season during which the bark beetles are active, is intended to slow the overland spread of oak wilt in these stands.

Once oak wilt is present in an oak stand, active management is needed to prevent its spread. Trenching with a vibratory plow can be employed to break the root grafts and slow the spread of infection, but this tactic is economically feasible only at small scale (e.g. for a small area near homes). With uneven topography and rocky conditions at many of the sites on Menominee, an alternative method is needed. MTE is attempting to reduce the spread of oak wilt expansion by using a treatment identified by USDA Forest Service and currently in use on the Chequamegon-Nicolet forest to the north. With this method, infected and adjacent trees are cut and removed. Then an excavator or backhoe is used to remove and overturn the stumps and root masses. By doing this, the root grafts are broken and diseased tissues are isolated from neighboring healthy oaks. Treatment sites are then monitored and evaluated annually to assess the results.

MITW, with assistance of the ISMP Committee, will work to develop ordinance language that will identify how to better regulate individuals cutting oak within the boundaries of the reservation for personal use. Options could include an amendment to the existing firewood ordinance or development of a new regulation that would address this and other forest health-related invasive species that have the potential to be spread by individuals harvesting trees for personal use i.e. firewood.

Norway Maple – *Acer platanoides* -A deciduous tree in the maple family (*Aceraceae*) growing 40- 60 feet in height, but can reach heights of 100 feet with dense foliage, broad-rounded crown, and stout stems. Norway maple can be confused with many maple species, especially sugar maple (*Acer saccharum*). Milky white sap that oozes out of leaf veins and stalks when broken can help distinguish them from native maples. Also bud tips of sugar maple are pointy and sharp to the touch, while those of Norway maple are more rounded and not sharp to the touch.

Trees produce a large quantity of seeds that can germinate rapidly and crowd out native species. Norway maples have been found in woodlands near cities, especially in the northeastern U.S. It has escaped cultivation and invades forests, fields, and other natural habitats. The species can be locally dominant in forest stands, create dense shade, and displace native trees, shrubs and herbs. Its dense canopy also can shade out native wildflowers. Homeowners should be encouraged to plant native species and not Norway maple. Controls include: Manually pull seedlings when soil is moist, dig out larger plants to include the root systems, cut down large trees and either g rind out the stump or

herbicide treat the stump. Large trees can also be girdled to prevent them from producing more seed.

Japanese Barberry – *Berberis thunbergii* – Japanese barberry is a low-growing spiny deciduous shrub found most often on well-drained soils, but is also found in wet muck soils in swamps. It is typically found in locations of partial sunlight along woodland edges, but can also thrive under closed forest canopies. Japanese barberry is commonly planted as an ornamental shrub for landscaping and often escapes cultivation. Birds commonly eat the berries and disperse the seed widely. In recent studies it was found that Japanese barberry can alter the soil chemistry in areas it inhabits, making it more difficult for native plants to compete with it.

Controlling barberry is most effective when identified in smaller numbers while the individual shrubs are small. Pulling the smaller individual shrubs tends to be effective because the root system is very shallow but can be very tough to remove as the shrub ages and the roots grow thicker and longer. Once the shrub gets larger and better established, herbicide is a better control option. Cutting and spraying the stump with triclopyr or non-foliar glyphosate tends to be most effective.

Current infestations of Japanese barberry are found around Keshena and most of the southeastern portion of the Reservation. Identification by all staff working within the Reservation is essential to attempt to control this species.

For many of the species listed above, there are biological controls being tested presently. If approved bio-control methods are proven safe to humans and the environment, they will be considered as an option for control, generally in lieu of chemical controls.

All the chemical controls listed above will be completed in accordance with all State, Federal and MITW guidelines, as well as label and MSDS information. For additional information regarding any of the above invasive species, the following WDNR website can be consulted: <http://dnr.wi.gov/topic/Invasives/>

The WDNR has compiled a field guide to terrestrial invasive plants that can be viewed at: <http://dnr.wi.gov/files/pdf/pubs/fr/fr0436a.pdf>

Training

At a minimum, annual training should be completed to update all field personnel and to increase their ability to identify new and existing invasive species. DNR and UWEX would be a good resource for training assistance in addition to other resources (i.e. GLIFWC, USDA Forest Service Forest Pest Management, and CMN-SDI).

One of the annual training opportunities should be conducted prior to the growing season, and should be a collaborative effort between all field personnel of the MITW, MTE and Menominee County. Follow-up training can be conducted as refresher training for personnel or as specific issues/ invasive species are identified throughout the year.

In addition to MITW, MTE and Menominee County personnel, specific training opportunities can be conducted for loggers, County Highway and Road Maintenance personnel.

Partners and Personnel Involved

Menominee County LCD, MITW ESD, MITW Conservation, , MTE and UW Extension will work in partnership to address invasive species and identify the lead agency in addressing the pest. These partners will have the majority of work hours to control and monitor invasive species within the county/reservation. Field personnel need to be aware of the current and potential invasive and notify the appropriate agency when new infestations are located. Ongoing training should occur on an annual basis to ensure that staff is able to identify invasive species through the course of their normal duties. Additional details of implementation and partnership responsibilities can be found in the following section. If you have questions please see the contact list under the References/Contacts section.

Some state and federal partners that will help with the invasive prevention and control effort will be the WDNR, WI-DATCP, UWEX, USDA State and Private Forestry, USFWS, APHIS, USDA, NRCS, USDOJ, BIA. Their efforts will most likely focus more on prevention and education, but there are funding sources listed in the next section by these agencies. Other organizations involved will be LaMotte Lake Association, the Moshawquit Lake Association, and the county/nation-wide Invasive Species Collaborative at the UWEX office. These organizations will be instrumental in helping disseminate educational information to their memberships and helping to unite volunteers for prevention and control efforts on those respective lakes. The LCD will work with the Moshawquit and LaMotte Lake Associations to coordinate an AIS monitoring program to enhance the rapid response to an early detection of, and early response to any aquatic invader. Continued involvement in external organizations like the TIP, will also be essential in the success of prevention and control.

The MITW ESD will take the lead in addressing any aquatic invasive species issues located on Tribal lands. This includes monitoring and treatment of lakes. Coordination between ESD and any of the other entities listed within this document is crucial to help with the prevention and controls of invasive species.

MTE will take the lead in addressing any terrestrial invasive species problems located on Tribal sustained yield lands in Federal trust. This includes monitoring, treatment, and educating the public and resource professionals on the steps that should be taken to reduce the impact of invasive species on the Menominee forest. MTE works closely with other local, state and federal jurisdictions including MITW Environmental Services and Menominee County.

Menominee County LCD will monitor all lands and right-of- ways within County jurisdiction annually. This includes state and county roadways, town roadways, and much of the lakes area, especially around Legend Lake. Legend Lake area is the most populated, has the most public land, and has the highest potential to see new invaders. Addressing species that cross-jurisdictional boundaries, which has the potential will be

most of them, will require a cooperative effort. We have done this in the past very effectively with garlic mustard controls along Hwy 47 right of way and into the MTE sustained yield forest land.

The County Forester/Conservationist will be the implementation coordinator for Menominee County. This person will work in conjunction with designated personnel in charge from other agencies for each invasive species prevention or control strategy.

TIP (Timberland Invasive Partnership Cooperative Weed Management Area) is a newly formed collaborative that encompasses a four county area. The major partners are: Menominee County, MITW, Langlade County, Oconto County, Shawano County and Stockbridge-Munsee Tribe. There are many other partners within the area such as Lake Associations and other governmental groups.

This group has hired a coordinator to help garner a more regional approach to invasive species awareness and control. TIP will be a new player in helping fight invasives within and around Menominee.

Implementation and collaboration

As referenced above, the entities involved will be responsible for assuring success and implementation of this plan. This group has unified and formed “The Menominee Invasive Species Committee” (ISMP Committee). This ISMP Committee will meet at least quarterly to discuss invasive species which are current, new, and threatening the reservation. The committee will evaluate the findings and discuss all possible solutions of control and management of the invasive species. Treatment options of newly discovered invasive species may include pesticide treatment. See Appendix 6 for protocol of treatment. The listed entities will continue to apply to available funding sources each year to prepare for management of invasive species. Adequate funding of cross-jurisdictional efforts along with administrative support and public education are critical to success. Funding to support Federal cost-share programs where no match dollars are available must be more actively pursued, especially where no other program support exists. Local committees will be updated annually with accomplishments made.

The ISMP will promote all lake associations to write and update a lake management plan. Such plans will help address invasive species and controls within that specific lake.

Development of Workplans

Work plans will be part of the ISMP Committee quarterly meetings, which are described above. As the ISMP Committee identifies needs and agrees to an approach of addressing the needs, work on a plan of action will begin. The work plan should identify the tasks that will be accomplished over the next one to five years (depending on the species), assuming funding is secured. The work plan identifies and prioritizes tasks of the committee and identifies the budget requirements needed to accomplish those tasks. The work plan will be reviewed annually and amended as conditions warrant. For example, control of purple loosestrife may involve biological control, mechanical removal, and other methods. Consideration of the environmental impacts of control actions requires

that environmentally sound methods be available and judiciously deployed, especially in highly sensitive areas (e.g. wetlands). See Appendix 5.

Evaluation of Plan Progress

The evaluation process for Menominee Invasive Species Management Plan will enable “the Committee” to monitor progress toward prevention, control, and abatement of invasive species as well as ensure appropriate implementation of the management actions by making "mid-course" corrections as needed. In essence, by incorporating the best scientific and management knowledge with periodic public evaluation, we will be implementing an adaptive management program. The process will involve quarterly evaluation and dissemination of information to the public.

The evaluation effort will not only examine progress in meeting the goals of the plan, but also place a special emphasis on identifying funding needs to successfully accomplish objectives and associated tasks.

Dissemination of information is addressed in the above section entitled Public Awareness and education.

Funding Sources

The majority of LCD, ESD, Conservation, and MTE staff time will be from existing budgets and grants. All time put forth toward invasive species for the LCD will be from current State grant sources that are 100 percent reimbursed. ESD and trust resources staff time for invasive species management will mostly be through the LCD State grant or related directly to a project that each grant is awarded. MTE will use existing budgets and personnel for surveying and controls.

Grants for control work may come from any of the following sources: WDNR Aquatic Invasive Species Grants, USDA Environmental Quality Incentives Program, USDA Wildlife Habitat Incentives Program, USDA Wetlands Reserve Program, Environmental Protection Agency grants, USFWS Partners for Fish and Wildlife as well as Landowner Incentives Program grants, BIA Invasive species, BIA Noxious Weeds, Great Lakes Restoration Initiative(GLRI) and National Fish and Wildlife Foundation grants through the Pulling Together Initiative. WDNR AIS grants can be applied for in three separate categories: 1) Education/Prevention/Planning, 2) Early Detection/Rapid Response, and 3) Control of Existing Infestations. All funding opportunities will be explored and applicable ones will be sought for education, prevention, and controls.

Local Ordinance Development

Ordinance development should be completed by both Menominee County and MITW. Invasive species are a problem for all people within Menominee County/Reservation and it will be beneficial for the county and MITW to work together and have similar laws. The scope and goal of developing regulation should be to deter the transport, planting and growing of noxious invaders.

A local ordinance could name individual species and the restrictions to harboring and transporting these specific exotic pests. An “Illegal to Transport” provision in each ordinance would help reduce the spread of invasive species if backed by strict enforcement. These regulations would be installed for the purpose of protecting recreational opportunities, native species and their habitat, natural systems within Menominee and surrounding counties. A primary goal is to adopt local ordinances that include enforcement stipulations within two years of the adoption of this plan and containment.

Current Menominee Tribal Ordinances:

MITW Code Chapter 340, Article I, Forest Management and Development Firewood:
<http://www.ecode360.com/12092642>

Tribal Ordinance 08-12 Control Spread of Fish Disease & Exotic Species:

Current Menominee County Ordinances:

Applicable State Laws – Chapter NR 40

County Laws – Section 22.080, County Zoning Ordinance

Town Laws – Ordinance #46 – Injurious Forest Insects and Diseases

Use of Best Management Practices (BMPs)

When enacted in concert with broader BMPs for invasive species within the Menominee Reservation/County, each of the BMP listed herein will foster the on the ground protocols necessary for helping to contain the spread of invasive species. Engaging user groups and the general public through consensus oriented BMPs is an essential component of a comprehensive approach that also includes strategies based around policy and legislation, financial resources, clarifying the role of various agencies, research needs, regional assessment and coordination, early detection and response and a strong campaign of information and education. Successful adoption of effective and appropriate BMPs will have the following benefits:

- Increase awareness among recreational forest users of the threats posed by invasive species and appropriate actions to minimize their spread.
- Incorporate invasive species considerations into the routine practices of recreational users whose activities depend on healthy forests.
- Eliminate or minimize the spread of invasive species BETWEEN sites by recreational users.
- Eliminate or limit the spread of early stage invasions WITHIN sites by forest users or recreational equipment.
- Improve the level of cooperation between agencies, recreational stakeholders and neighboring landowners.
- Foster public support for more comprehensive control of invasive species.
- Conserve the health and productivity of Wisconsin’s forests, and the resources and jobs they support.

Below are lists of Wisconsin BMPs that will be part of the plan as described in the following sub-sections.

BMP TYPES (see Website <http://council.wisconsinforestry.org/invasives/>)

- Forestry BMPs - Will be utilized for the purpose of forest management activities. The manual includes standards of practice that will aid landowners, land managers, and loggers in limiting the introduction and spread of invasive plants, invertebrates, and diseases.
- Recreational Forest User BMPs - Recreational users should be familiar with BMPs before engaging in any activity that would have the potential to bring risk to introduce invasive species. Through various forest and road-based activities, hikers, hunters, horseback riders, anglers, birders, and motorized vehicle riders among others can unknowingly cause new infestations of harmful invasive species in previously unaffected forest ecosystems. Recreation BMPs will form the foundation of an educational approach that informs and assists recreational users from a diversity of stakeholder groups to control the spread of invasive species and mitigate their negative ecological and economic impacts.
- Urban Forestry BMPs - Urban forestry professionals and homeowners alike can play a role in helping to reduce the impacts of invasive species by following the practices outlined in this manual. The goal is to provide guidance by incorporating invasive species considerations into routine urban forestry activities. Ultimately, everyone involved in the care and management of trees, shrubs and other vegetation shares in the responsibility of preventing and controlling invasives. By taking reasonable and practical precautions today, we can help protect Wisconsin's urban forests and other lands into the future.
- Transportation and Utility Rights-of-way BMPs – The overall goal of the Utility and Transportation Rights-of-Way BMP was to develop a broad set of voluntary practices to minimize the further introduction and spread of invasive species within Transportation and Utility Corridors. The MITW envisions the BMPs as the first steps in minimizing the spread of invasive species through outreach and employee education. Anyone utilizing the transportation or utilities right of ways will need to be familiar with this document. All work within the right of ways must adhere to these BMPs

References/Contacts

<http://invasivespecies.wi.gov>

<http://dnr.wi.gov/topic/invasives>

<http://www.grants.gov>

<http://www.invasivespeciesinfo.gov>

<http://www.protectyourwaters.net>

<http://www.team.ars.usda.gov/herbicidemanual.pdf>

<http://www.uwsp.edu/cnr/uwexplakes/ecology/APMguide.asp>

<http://www.wiscwetlands.org/phragmites>

USDA – US Forest Service. 2005. Chequamegon-Nicolet Non-native Invasive Plant

Control Project plan.

Wisconsin DNR - Division of Forestry

<http://dnr.wi.gov/forestry/Fh/index.htm>

Wisconsin Emerald Ash Borer Portal Site

<http://emeraldashborer.wi.gov/>

Wisconsin Gypsy Moth Portal

<http://gypsymoth.wi.gov/>

Purple Loosestrife Biological Control Manual for Educators

http://dnr.wi.gov/org/es/science/publications/ss981_2003.htm

The Nature Conservancy

<http://tncweeds.ucdavis.edu/>

Alien Plant Invaders of Natural Areas

<http://www.nps.gov/plants/alien/>

Wisconsin Council on Invasive Species

<http://invasivespecies.wi.gov/awareness/index.asp>

Invasive Plants Association of Wisconsin

<http://www.ipaw.org/>

Invasive Plants of the Upper Midwest: An Illustrated Guide to Their Identification and Control

<http://www.wisc.edu/wisconsinpress/InvasivePlants.html>

Contacts:

Menominee County Land Conservation Department – 799-5710

Menominee Indian Tribe of Wisconsin Conservation Department – 799-5116

Menominee Indian Tribe of Wisconsin Environmental Services Department – 799-6154

Menominee Tribal Enterprises – 715-799-3896 ext. 2246

University of Wisconsin Extension – 799-4654

Wisconsin Department of Natural Resources – 799-2266

Appendix 1 – 2009 invasive species extent and controls.

Aquatic

Eurasian water milfoil

In the spring 2009 156.4 acres of EWM were treated on Legend Lake and 3 acres on Moshawquit Lake. Treatment was done with a herbicide called Navigate 2, 4-D. Another plant survey was completed in the fall and there are approximately 129 acres that need to be treated in 2010 for Legend Lake. Treatment and survey results have been completed by Cason and Associates, expenses covered by the LLPOA.

Purple loosestrife

No active management in 2009.

Curly-leaf pondweed

5 acres treated in LL with Aquathol Super K. See permit/Plan. In spring/summer 2009 5 acres of CLP were treated on Legend Lake using an approved herbicide called Aquathol Super K.

Zebra mussels

In 2009 ESD sampled for zebra mussel veligers on Legend, Moshawquit, LaMotte and Keshena Lakes. The samples were sent into WDNR for analysis. Veligers were found in both Legend and Moshawquit Lakes. Even though adults had been found in those two lakes, we were advised to sample to find out if there was breeding population within the lakes.

Common reed

MITW DoTR summer interns did some field removals of Phragmites at the CTH VV west wetland near Max Martin road. Control consisted of hand removal and bundling stems that were in close proximity of each other. Although MITW is not yet able to use herbicide within these wetlands, the small stand was entirely cut and will be monitored in the upcoming field season.

Terrestrial

Garlic mustard

In 2009 LCD treated around 1 acre in 10 separate spots along Hwy 55. 9 spots are located in the right-of-ways between Keshena Falls and Spirit Rock and 1 spot is at the intersection with Hwy WW. Also detected and treated a 200 sq. ft. patch near Silver Canoe Rd. All areas of garlic mustard treated by LCD used glyphosate.

Garlic Mustard was treated in several areas on the reservation in 2009. This consisted of a combination of spraying with glyphosate herbicide in the spring and early summer, and hand pulling mature plants before seed release in July. Some areas along Highway 47 were sprayed a third time in late fall prior to snowfall. The areas where garlic mustard was heaviest include along Highway 47 from the top of Dutchman hill to the tornado blowdown strip northwest of Zoar, and along Highway 55 just south of Spirit Rock road.

Small pockets were also located near the intersection of County WW and Highway 55, in the Legend Lake area (vicinity of Silver Canoe road) and southeast Bass Lake. Follow up treatments will take place in 2010 in a continuing effort to reduce the extent of the area affected by Garlic Mustard. The public should continue to be educated on this issue, because vehicles driving through infected patches easily spread Garlic Mustard to new areas.

Gypsy moth

Treated 309 acres in 2 areas around Legend Lake and 106 acres around Moshawquit Lake through DNR aerial treatment program. Sprayed Gypchek, Nucleopolyhedrosis Virus (NPV) on all three treatment areas.

Spotted knapweed

Treated around 10 acres at 22 spots around Legend and Southeast Bass Lakes. Areas treated ranged from small patches with 50 plants to 5 acres around the Legend Lake Dam #3. Used both glyphosate and triclopyr on the knapweed.

Leafy spurge

Same patch along Old South Branch Rd. retreated. There were only 20 plants left that were treated with glyphosate. A follow up inspection will be done in 2010 to see if that patch has been eradicated.

Wild parsnip

No treatment needed. The only known patch in Zoar has possibly been eradicated. A follow up inspection will be completed in 2010.

Exotic honeysuckles

No active management in 2009.

Reed canary grass

No active management in 2009.

Buckthorns

Cut and stump treated/hand pulled saplings of all visible buckthorn plants on 2 acres around Legend Lake area (encompassed 6 spots). Ranges of treatments were from single specimens to a one acre stand along Silver Canoe Rd.

Emerald ash borer

An intense monitoring program is conducted annually to serve as an early warning of EAB occurring on the reservation. Initially, the MITW ESD worked with the Wisconsin Tribal Conservation Advisory Council (WTCAC) and USDA APHIS to set up detection tree sampling at approximately 5 sites within the reservation. This sampling consisted of selection and girdling of pairs of ash trees, which then have tangle foot adhered to the sample tree. After a period of two years the trees are taken down and peeled according to a set protocol that allows for detection of larva and visual observations. During this sampling period the project was moved to MTE (Forest Ecologist) and the next phase of sampling began with the use of traps provided through WTCAC/APHIS. The purple traps

are scent based, utilizing a wood based oil that imitates exposed tree phloem. Approximately 10 sites were selected with two traps per site most of the locations were in the same immediate area as were the detection tree sites. The traps attract adult EAB beetles, which provide advanced notice of an infestation. This will allow MTE staff with time to implement the steps called for under the EAB Management Plan, currently under review by the BIA. To date there has been no detection of EAB within the Reservation/County.

Oak wilt

58 prevention permits written out to landowners needing to cut oaks for construction or hazardous circumstances. No vibratory plowing completed in 2009. LCD typically completes several thousand feet of vibratory plowing in any given year, mainly around Legend, LaMotte and Moshawquit Lakes.

In Red Oak stands, MTE monitors the forest for signs of new oak wilt pockets. Infected trees and nearby trees that are likely to be root grafted to the infected trees are marked for removal. The marked trees are removed during the fall and winter, when the risk of causing damage to the uninfected part of the stand is lowest. The stumps are mechanically pulled to break the root grafts; trenching is often not practical in most northern red oak stands because the rocky soil would easily damage the trenching equipment. If caught and treated early enough, these actions should be sufficient for slowing, and sometimes stopping, the spread of oak wilt in high value stands.

In 2009, a prescription was developed and approved for the treatment of oak wilt-infected areas. It specifies the cutting of all trees within a buffered area in and around infected positively identified oak wilt pockets; the buffer distance is in accordance with WDNR guidelines. According to this prescription, 12 sites were marked and submitted as a bid unit to the loggers. These units will be cut and the stumps pulled in 2010.

Norway maple

No controls done to date. All agencies need to keep watch for potential areas on routine survey activities. Forest infestations of Norway maple will most likely occur nearby homes and yards.

Japanese barberry

As of late spring 2009 Japanese barberry was identified in multiple locations with scattered individuals and occasional clumps. Primarily it was identified in and around forested areas in the community of Keshena and in forested areas around Legend Lake, Keshena Lake, Moshawquit Lake and Round Lake. Although it has not been identified the shrub is most likely around the other residential southeastern lakes because it is commonly planted as a landscape plant and escapes with the help of birds. It may also be around Neopit, but has yet to be identified.

There have been no known control measures instituted as of the end of 2009.

Appendix 1 – 2010 invasive species extent and controls.

Aquatic

Eurasian water milfoil

In May of 2010 129 acres of EWM were treated on Legend Lake and 9 acres were treated on Moshawquit Lake. Mapping was done again in October 2010 and 119 acres were mapped in Legend Lake and less than 1 acre in Moshawquit Lake. These treatments will take place in spring of 2011. Treatment and survey results have been completed by Cason and Associates, expenses covered by the LLPOA.

Purple loosestrife

No active management in 2010.

Zebra mussels

In 2010 adult zebra mussels are spreading westward in Legend Lake and have been identified as far as Little Blacksmith basin. In 2010 the Environmental Services Department sample for zebra mussel in LaMotte, Round and Sand Lakes. The samples that were sent to WIDNR were clear of zebra mussels.

Curly-leaf pondweed

CLP was identified in Moshawquit Lake, but no controls have been implemented yet. Controls will most likely be implemented in 2011, similar to what Legend Lake has done. In spring of 2010 7 acres of CLP were treated in Legend Lake, but at that time it was noted that there was more plants that needed treatment approximately 20 in total.

Common Reed

Three of the four sites were cut back with all seed heads collected and disposed of. The only one that did not have cutting completed was the site at the former Vigue Trout Ponds along STH 55. The sites just north of Neopit along STH 47, at Rainbow Falls Road and VV west were all completed in fall 2010. Assistance was provided by MTIW DoTR Staff and Seasonal Interns. It is planned to herbicide treat all four sites in spring 2011. A new site has been discovered at Rushes Lake, which consists of numerous plants in and around the boat landing area.

Terrestrial

Japanese barberry Extent

A few mature plants were found while conducting buckthorn surveys in a few areas by Legend Lake. Each of them was cut and stump treated with a triclopyr solution in fall 2010.

Garlic mustard

In 2010 LCD treated around 1 acre in 10 separate spots along Hwy 55 prior to seed formation. Nine spots are located in the right-of-ways between Keshena Falls and Spirit Rock and 1 spot is at the intersection with Hwy WW. LCD also retreated a 200 sq. ft.

patch near Silver Canoe Road by Legend Lake. All areas of garlic mustard treated by LCD were completed with glyphosate.

Gypsy moth

Treated 226 acres in one area at Legend Lake and Round Lake through DNR aerial treatment program. Sprayed Gypchek, Nucleopolyhedrosis Virus (NPV) on the treatment area.. Worked with MITW to get new areas surveyed in the Legend Lake, Moshawquit Lake and S.E. Bass Lake areas for submittal to the State Suppression program to determine eligibility of treatment in 2011. Cost for treatment is shared between the County and the Tribe.

Spotted knapweed

LCD treated around 12 acres at 26 spots around Legend and Southeast Bass Lakes. Areas treated ranged from small patches with 50 plants to 5 acres around the Legend Lake Dam #3. LCD used both glyphosate and triclopyr on the knapweed. More follow up needed in 2011. New sites were discovered within the sustained yield forest areas in the southeastern part of the Reservation. One of the sites is being managed by MTE Fire Staff and will require treatment in the upcoming field season. The other sites are smaller and will be addressed in the same time period

Leafy spurge

Same patch along Old South Branch Rd. retreated. There were only 15 plants left that were treated with glyphosate. A follow up inspection will be done in 2011 to see if that patch is finally eradicated.

Cypress spurge

Five small patches of this invader were identified along CTW VV near Long Lake Road in summer 2010. Each patch was herbicide treated with glyphosate and about a week later they were all hand pulled and collected as they already had seeds formed on them. Follow up surveys will be required in 2011.

Wild parsnip

No treatment needed. The only known patch in Zoar has possibly been eradicated. A follow up inspection will be completed in 2011.

Exotic honeysuckles

Many mature shrubs were cut and stump treated in the northeast Legend Lake area in fall 2010. Another area along Silver Canoe Rd was treated along with buckthorn and garlic mustard. Control areas probably totaled around 40 acres. There are many more in this area that will need to be controlled in 2011.

Reed canary grass

No active management in 2010. Additional locations have been noted within areas of the sustained yield lands.

Buckthorns

Cut and stump treated/hand pulled saplings of all visible buckthorn plants on 50 acres around Legend Lake area in fall 2010 (encompassed at least 40 small locations). Some scattered specimens were located along STH 55 and each of them within the right-of-way was cut and stump treated. Ranges of treatments were from single specimens to a one acre stand along Silver Canoe Rd. We need to work on controlling additional specimens on tribal lands in 2011; each of them was marked with GPS coordinates.

Emerald ash borer

LCD helped MTE and MITW place eight purple sticky traps in four locations on northern side of Legend Lake within ash stands. No EAB has been detected to date. These sites are new trap locations added to the 10 monitoring sites previously trapped the past two years. In total there were 14 new trap locations added in 2010 and as stated above no EAB have been detected within the Reservation. Monitoring will continue into the future and will probably include the same 17 trap locations next year.

Oak wilt

32 prevention permits written out to landowners needing to cut oaks for construction or hazardous circumstances. Vibratory plowing was completed at one site for control of an existing pocket at Legend Lake in 2010.

Norway maple

No controls done to date. All agencies need to keep watch for potential areas on routine survey activities. Forest infestations of Norway maple will most likely occur nearby homes and yards.

Tansy

Several areas have been found within the sustained yield forest lands in 2010. Two of the sites were treated by MTIW Community Development, but it has not been determined if the treatment was consistent with protocols of the ISMP and will require further monitoring to detect additional spread that may have resulted due to inadequate treatment methods. Other sites should be treated in the upcoming 2011 field season, but limited resources may be an issue.

ISMP Workgroup Progress toward Control and Eradication in 2011

Appendix 1 – 2011 invasive species extent and controls.

Aquatic

Eurasian water milfoil

In May of 2011 119 acres of EWM were treated on Legend Lake and 6 acres were treated on Moshawquit Lake. Mapping was done again in October 2011 and 123 acres were mapped in Legend Lake 7 acres in Moshawquit Lake. Treatment and survey results have been completed by Cason and Associates, expenses covered by the LLPOA.

Purple loosestrife

LCD identified several flowering plants around the shores of Southeast Bass Lake in summer. LCD plans to move a few trap plants from the Keshena area, with Galerucella beetles on them, to these shores to introduce the bio-control beetles in 2012. ESD surveyed along the Wolf River. Several small groupings of flowering plants were noted throughout the river system within the Reservation.

Zebra mussels

Adults are spreading westward in Legend Lake and have been identified as far as Spring Lake. ESD sampled for Zebra mussel veligers on LaMotte, Round, Sand and S.E. Bass lakes this season. The samples were sent into a WI DNR lab and have been returned to ESD all being negative for zebra mussel veligers.

Curly-leaf pondweed

CLP was identified and surveyed in Moshawquit Lake, but no controls have been implemented yet. Controls will most likely be implemented in 2012, similar to what Legend Lake has done. Hand pulling was to be accomplished in summer 2011, but volunteer efforts did not get to it in time. It was estimated to be at about 7 acres in June 2011. In addition to the 19.3 acres that were treated in Legend Lake in May, 10.8 acres of new curly-leaf pondweed beds were identified in the June survey. This suggests that curly-leaf pondweed is still increasing in Legend Lake. However it is unlikely that all 30.1 acres of curly-leaf pondweed that were identified will need treatment in 2012.

Common Reed

LCD completed a foliar herbicide treatment with Rodeo™ brand glyphosate to the area of common reed along Highway 47 north of Neopit. This treatment was approved by MITW ESD for aquatic application. A survey will be completed in early summer 2012 to see how effective this treatment was on this reed extent.

Terrestrial

Japanese barberry Extent

Several mature plants were found while conducting buckthorn surveys in a few areas by Legend Lake. Each of them was cut and stump treated with a triclopyr solution in fall

2011. New infestations of barberry have been discovered around the village of Keshena and one area of numerous plants in the southwestern part of town along the wolf river will need to be treated as soon as practical.

Garlic mustard

In 2011, LCD treated around 1 acre in 13 separate spots along Hwy 55 prior to seed formation. 10 spots are located in the right-of-ways between Keshena Falls and Spirit Rock, 1 spot is at the intersection with Hwy WW, and one additional spot was found just north of the road to Big Smokey Falls. Two spots were found and treated in Zoar in 2011 by LCD. LCD also retreated a 300 sq. ft. patch near Silver Canoe Road by Legend Lake. All areas of garlic mustard treated by LCD were completed with glyphosate. DoTR coordinated with LCD on survey and treatment plans for large area of garlic mustard at Shotgun Eddy.

Gypsy moth

LCD and MITW DoTR completed aerial treatment of 600 acres at Legend, Moshawquit, and Southeast Bass Lakes. There was very little problem with gypsy moth caterpillars in 2011. No treatments will be required in Menominee in 2012.

Spotted knapweed

LCD treated around 12 acres at 29 spots around Legend and Southeast Bass Lakes. Areas treated ranged from small patches with 50 plants to 5 acres around the Legend Lake Dam #3. LCD used both glyphosate and triclopyr on the knapweed. Many mature plants in later summer were hand pulled, bagged and disposed of properly. MITW DoTR and MITW Conservation utilized summer interns and youth employees to coordinate a hand pulling treatment in the middle village area. Two separate sites were pulled, bagged and disposed of totaling approximately 1 acre. More follow up will be needed in 2012 and should consist of surveys and treatments. New sites were discovered within the sustained yield forest areas in the southeastern part of the Reservation. One of the sites is being managed by MTE Fire Staff and received treatment during the field season. The other sites are smaller and will be addressed in the same time period

Leafy spurge

Same patch along Old South Branch Rd. retreated. There were only 12 plants left that were treated with glyphosate. A follow up inspection will be done in 2012 to see if that patch is finally eradicated.

Cypress spurge

Treatments in 2010 appeared very effective as no signs of this invader were found in 2011 along CTH VV. A new spot of cypress spurge was located along STH 55 about 1 mile north of Dickie Rd. It is located on the east side of the highway and about 600 sq. ft. in the ditch. There may be controls completed in 2012 by LCD if time permits.

Wild parsnip

A large patch of wild parsnip was located by CHD and LCD marked and mapped it along CTH M. The area on the south side of M is approximately 500 feet long in the ditch. This area is fairly dense with about 200 mature, flowering plants. The area on the north

side has a few scattered plants along 200' of ditch. Herbicide controls with glyphosate will be completed in summer 2012.

Exotic honeysuckles

Many mature shrubs were cut and stump treated in the northeast Legend Lake area in fall 2011. Another area along Silver Canoe Rd was retreated along with buckthorn and garlic mustard. Control areas probably totaled around 40 acres. There are many more in this area that will need to be controlled in 2012. As was the situation with Japanese barberry, many infestations of honeysuckle have been located within the Keshena area during work on urban forestry data collection. These areas will need to be attended to in upcoming field seasons.

Reed canary grass

No active management in 2011 by LCD. Additional locations have been noted within areas of the sustained yield lands. Under the supervision of the ESD the USFWS treated a 1 acre wetland that is shared by the Tribe and by a Berry Lake resident.

Buckthorns

LCD cut and stump treated/hand pulled saplings of all visible buckthorn plants on 40 acres around Legend Lake area in fall 2011. Some scattered specimens were located by Southeast Bass and LaMotte Lakes, and each of them within the right-of-way was cut and stump treated. LCD and MITW DoTR hand pulled, and cut and stump treated a ½ acre area along the Wolf River between MITW Tribal Clinic and Menominee County Veterans Office. Follow up on this area should be done in 2012. We need to work on controlling additional specimens on tribal lands in 2012; each of them has been marked with GPS coordinates. Several infestations of buckthorn have been located within the Keshena area during work on urban forestry data collection. These areas will need to be attended to in upcoming field seasons.

Oak wilt

24 prevention permits written out to landowners needing to cut oaks for construction or hazardous circumstances. Vibratory plowing was completed at 3 sites for control of 2 existing pockets at Legend Lake in 2011.

Norway maple

No controls done to date. All agencies need to keep watch for potential areas on routine survey activities. Forest infestations of Norway maple will most likely occur nearby homes and yards.

Tansy

Several areas have been found within the sustained yield forest lands since 2010. Two of the sites were treated by MTIW Community Development, but it has not resulted in control of the invasive due to the mechanical method used and this will also require further monitoring to detect additional spread that may have resulted due to inadequate treatment methods. Other sites should be treated in the upcoming 2012 field season, but limited resources may be an issue.

Japanese knotweed

An area of knotweed was identified in the LLPOA yard waste site along Silver Canoe Rd. It is on a berm around the brush/burn pit and about 1,000 sq. ft. All stems were cut and placed on the burn pile by LLPOA and LCD in fall 2011, and all newly growing shoots will be treated with glyphosate in early summer 2012.

ISMP Workgroup Progress toward Control and Eradication in 2012

Appendix 1 – 2012 invasive species extent and controls.

Aquatic Invasives

Eurasian water milfoil

In May of 2012 123.1 acres of EWM were treated on Legend Lake and 6.5 acres were treated on Moshawquit Lake. Mapping was done again in October 2012 with 60 acres being mapped in Legend Lake and 9.25 acres in Moshawquit Lake. Treatment and survey results have been completed by Cason and Associates, expenses covered by the LLPOA. Hand pulling will also take place in those areas shallow enough to do so.

Purple loosestrife

LCD identified several flowering plants around the shores of Southeast Bass Lake in summer. Time constraints and inadequate access to the shoreline with purple loosestrife didn't allow this to occur. Will try to accomplish in 2013. River float surveys and mapping were conducted by summer interns on the Wolf River covering the river from the north line to Keshena.

Zebra mussels

LCD received a report that zebra mussels have moved into Skice Lake. Zebra mussels are now found throughout the Legend Lake chain as of 2012. ESD sampled for veligers in LaMotte, SE Bass, Upper Bass lakes and the Neopit Mill pond and we are still waiting to hear from DNR on the results.

Curly-leaf pondweed

CLP treatment took place on both Legend and Moshawquit Lakes in 2012. In May of 2012 19.3 acres of CLP were treated in Legend Lake and 7.6 acres were treated in Moshawquit Lake. Both lakes were surveyed again in October with 27.9 acres being found in Legend and 3 acres being found in Moshawquit. Hand pulling will also take place in those areas that shallow enough to do so.

Common Reed

LCD, MTE, ESD, and DoTR completed herbicide treatments with Rodeo at four of five known locations of exotic phragmites within the county/reservation. The one location not treated is along Highway 55 at the former Vigue Trout Ponds. This site is within the Wolf River Corridor and could not be treated under current restrictions. Foliar treatments were very effective along Highways 47, M, and VV. The treatment appeared to be less effective along Rainbow Falls Road. All sites will be monitored in 2013 and retreated as necessary. Three additional sites were found: one along CTH M, one at Rushes Lake, and along Minnow Creek Road. These three sites were determined to be native reed and not the exotic reed. In cooperation with MITW-Environmental Services and Menominee Co., MTE assisted in the spraying of common reed with Rodeo herbicide (Glyphosate) on Co. Hwy.

VV west, Rainbow Falls Rd., and Co. Hwy. M. A total of 19 gallons (5% active ingredient) were sprayed.

Terrestrial Invasive Plants

Japanese barberry Extent

LCD found several (around 10) scattered barberry plants throughout the lakes area in 2012 and cut and stump treated any that were on public land. MITW planning is underway to treat the areas within the village of Keshena. Additional plants were located behind the basketball course on top of the hill in Keshena. About 5-7 plants were identified during wildfire suppression. MTE sprayed several small plants with Accord herbicide (glyphosate) along the forest edge and highway 47 right-of-way, across the street from Rainbow Saloon.

Garlic mustard

Treatments by LCD included herbicide treatment with glyphosate along the same 13 spots on highway 55, the area near Silver Canoe Road by Legend Lake, and the small area in Zoar. Two new locations were found in 2012, the first being along Old South Branch Road near Bent Tree Path, and the second being along Lawe Avenue in Neopit. The site along Old South Branch Road was herbicide treated and the site in Neopit (along with the Shotgun Eddy site) was hand pulled and all plants were burned at the MTE mill in Neopit. Approximately 1/3 of the Shotgun Eddy site was also herbicide treated to keep the plants away from the driveway and parking areas to avoid spread by campers and rafters. MTE surveyed approximately 35% of the road systems for garlic mustard in 2012. All known garlic mustard infestations were spot-sprayed with Accord herbicide (glyphosate) in the spring before seed development along Rt. 47 North of Middle Village to the Reservation border, satellite infestations on Camp 23 Rd., Old South Branch Rd., Crow Settlement Rd., Rice Beds Rd., Camp 26 Rd., and forest roads and woods infestations in compartments 333, 104, 105, 347, 217 and 234 (west). A total of 249 gallons (2-5% active ingredient) were sprayed. The same sites above were hand-weeded in the early summer before seed dispersal and burned in the Mill's boiler room. A total of 941 pounds of garlic mustard were hand-pulled. Suspended logging and road closures continue in compartment 333 (Dutchman Tower area), 104 (Potato Patch Rd. area), 234 (Juniper Rd. area), and 225 (Crow Settlement Rd. area).

Spotted knapweed

LCD treated 30 spots totaling approximately 12 acres around Legend and Southeast Bass Lakes. Areas treated ranged in size from small patches with 50 plants to 5 acres around the Legend Lake Dam #3. LCD used glyphosate for all treatments of knapweed. Many mature plants in later summer were hand pulled, bagged and disposed of properly.

Leafy spurge

A few plants were again found again in 2012 along Old South Branch Road and treated with glyphosate. A new patch about 10 feet by 80 feet was located along Rushes Lake Road. This site was also herbicide treated with glyphosate in 2012. Both sites will be revisited in 2013.

Cypress spurge

The spurge along STH 55 was herbicide treated in 2012 and monitoring in 2013 will determine if follow up treatments are required.

Wild parsnip

The wild parsnip along CTH M was herbicide treated early in 2012 to address the plants before they grew large. By fall, no plants were detected in this area and monitoring will continue in 2013 for additional treatment. A new site of wild parsnip was identified by the county highway department along St. Joseph Church Road. This site is along the eastern ditch and extends for 100 feet or so.

Exotic honeysuckles

LCD took GPS coordinates of all remaining honeysuckle found within the lakes area in fall 2012. No treatments were completed by LCD in 2012. MITW ESD located and acquired GPS location of a very large stand near the Middle Village area within sustained yield forest. MTE sprayed several patches of honeysuckle with Accord herbicide (glyphosate) along Max Martin Rd., the southern reservation border in compartment 234 (east), Hwy 47 right-of-way from the forestry center to the Reservation border, compartment 231 (northwest), and East Line Rd. A total of 68 gallons (5% active ingredient) were sprayed. Large shrubs were cut with a chainsaw and stumps were glazed with Accord herbicide (glyphosate) at 100% concentration. A total of 3 quarts were used for stump treatments.

Reed canary grass

No active management in 2012.

Buckthorns

LCD cut and stump treated about 12 saplings and trees as they were encountered on taxable lands in 2012. A new stand of buckthorn was located in Tribal Office Loop Road.

Norway maple

No controls done to date. All agencies need to keep watch for potential areas on routine survey activities. Forest infestations of Norway maple will most likely occur nearby homes and yards.

Tansy

Several areas have been found within the sustained yield forest lands since 2010. Two of the sites were treated by MTIW Community Development, but it has not resulted in control of the invasive due to the mechanical method used and this will also require further monitoring to detect additional spread that may have resulted due to inadequate treatment methods. Other sites should be treated in the upcoming 2012 field season, but limited resources may be an issue. The sites continue to be monitored but no treatment was completed in 2012.

Japanese knotweed

The knotweed at the LLPOA yard waste site did not receive herbicide treatment in 2012. All mature plants were scraped and dug out mechanically and all debris placed on the burn pile to be burned in early 2013. Follow up monitoring in 2013 will provide information on what treatment will be needed in 2013.

Autumn Olive

MTE sprayed one small tree with Accord herbicide (glyphosate) along the forest/highway right-of-way on Highway 47, just west of the forestry center.

Forest Insects

Gypsy moth

Numbers of egg masses have increased slightly. No treatments will be required in Menominee in 2013. MTE did not find a potential for damaging populations of the gypsy moth in 2011 and no treatment was applied in 2012. Egg mass surveys in fall 2012 indicate a low probability for defoliation in spring 2013, as well

Invasive basswood thrips

MTE observed that early spring damage to new leaves by this small insect were very minor during general forest health surveys

Emerald ash borer

MTE deployed purple prism traps and visually searched for signs and symptoms of the wood boring beetle. Results were negative for adults, larvae, or damage in 2012.

Forest Pathogens

Beech bark disease

MTE detected beech scale insects in compartment 104 (Potato patch rd. area) and 101 (Bonita Rd. area). Beech scale insects in association with *Neonectria* spp. fungal cankers cause beech bark disease. *Neonectria* spp. has not been observed to date.

Oak wilt

30 prevention permits written out by LCD to landowners needing to cut oaks for construction or hazardous circumstances.

MTE surveyed approximately 75% of high quality red oak stands for oak wilt disease pockets. A total of 166 disease pockets were located and are currently being controlled by harvesting the diseased trees and severing root grafts among diseased and healthy oaks by extracting stumps.

***Heterobasidion irregulare* root disease**

MTE did not detect any signs or symptoms of this pathogen in 2012, however infestations exist in neighboring counties. Treatment of conifer stumps with Cellu-treat wood preservative continued during logging operations to prevent establishment of the root rot disease. A total of 1,750 gallons (5% active ingredient concentration) were applied from April through November.

Butternut canker

MTE observed the unrelenting decline of butternut trees due to this pathogen during general forest health surveys. No practical integrated pest management methods exist, but fortunately several large diameter, undamaged, and potentially resistant trees were located. Long-term studies on how to regenerate butternut with WI-DNR Forest Health Protection staff are ongoing.

Dutch elm disease

MTE observed that elms that reach poletimber size continue to succumb to this disease during general forest health surveys. No potentially resistant trees were located.

White pine blister rust

MTE continued to manage this pathogen by pruning during forest development projects to remove diseased branches and increase airflow in the stand.

ISMP Workgroup Progress toward Control and Eradication in 2013

Appendix 1 – 2013 invasive species extent and controls.

Invasive species management and control crew hired for 2013

Through a cooperative effort with the Wisconsin Tribal Conservation Advisory Council, the Menominee Tribe was able to hire four college students (Interns) that worked during the summer to assist with management of invasive species within the Menominee Reservation and surrounding areas. The Interns were successful in management of several invasive species and the summaries of their accomplishments are outlined below within the respective species descriptions. References to their work accomplishments will be listed as MITW Interns. Maps were produced for the surveyed and treatment areas and are attached to this appendix, but are not included for the MTN Article. If interested in the maps, please contact Heather or Doug at the Environmental Services Department.

Aquatic Invasives

Eurasian water milfoil

In May of 2013 60.6 of EWM were treated on Legend Lake and 9.25 acres were treated on Moshawquit Lake. Treatment and survey results have been completed by Cason and Associates, expenses covered by the LLPOA. Hand pulling has also taken place in those areas shallow enough to do so and will be continued.

Purple loosestrife

LCD identified several flowering plants around the shores of Southeast Bass Lake in summer. Time constraints and inadequate access to the shoreline with purple loosestrife didn't allow this to occur; this will be coordinated and accomplished in 2014. The Wolf River survey was conducted by the MITW Interns covering the river from the north line to Keshena. The survey also included detailed data collection and mapping, as well as some treatment of stands adjacent to the river along highway 55 and Sanapaw Fields Road. Follow up survey and treatments will be conducted again in 2014.

Zebra mussels

While there was no actual sampling for zebra mussel veligers this year, the ESD staff continued visual monitoring of any lake that field work was taking place on. Veliger and adult sample will be continued next year.

Curly-leaf pondweed

CLP treatment took place on both Legend and Moshawquit Lakes in 2013. In May 27.9 acres of CLP were treated in Legend Lake and 3 acres were treated in Moshawquit Lake. Hand pulling will also take place in those areas that are shallow enough to do so.

Common Reed

The MITW Interns completed approximately 2 acres of herbicide treatments with Rodeo at four locations within the reservation and MITW ESD coordinated treatment of approximately one acre on Berry Lake in Oconto County. Five known locations of exotic Phragmites have been verified within the county/reservation. Highway 55 at the former Vigue Trout Ponds, Highway 47 near the Neopit Millpond, County M northeast of Neopit, County VV west of Keshena and a site along Rainbow Falls Road. A new site was reported during 2013, but has not yet been verified as a non-native species of phragmites. Management of all known areas will continue annually, as well as annual monitoring of the Wolf River as part of the purple loosestrife project. Approval protocols were followed in accordance with Ordinance 05-22 for the one site treated within the Wolf River Corridor.

Terrestrial Invasive Plants

Japanese barberry

LCD found nine scattered barberry plants throughout the lakes area in 2013 and cut and stump treated any that were on public land. The MITW Interns treated 3 acres of Japanese barberry and surveyed an additional 7.5 acres. Foliar treatments were only partially effective and follow up will be conducted in 2014.

Garlic mustard

Treatments in 2013 by LCD included herbicide treatment with glyphosate at 14 locations along highway 55, one area near Silver Canoe Road by Legend Lake, and one area along Old South Branch Road near Bent Tree Path. Treatments by LCD totaled around 1 acre. Suspended logging and road closures continue in compartment 333 (Dutchman Tower area), 104 (Potato Patch Rd. area), 234 (Juniper Rd. area), and 225 (Crow Settlement Rd. area). MITW Interns treated 18.1 acres of garlic mustard along right of ways and within village areas that also included an area that is being actively managed at Shotgun Eddy. The Interns additionally conducted road surveys for potential new occurrences. 25.6 miles of paved roads were completed and 35.8 miles of dirt/gravel roads were surveyed, with only one minor occurrence of plants located and treated.

Spotted knapweed

LCD treated 32 spots totaling approximately 12 acres around Legend and Southeast Bass Lakes. Areas treated ranged in size from small patches with 5 plants to 5 acres around the Legend Lake Dam #3. LCD used glyphosate for all treatments of knapweed. Many mature plants in later summer were hand pulled, bagged and disposed of properly.

MITW Interns successfully treated 15.2 acres of spotted knapweed and surveyed an additional 5 acres. This was by far the most prevalent invasive within the village and developed areas. Most of the occurrence is in the village of Keshena.

Leafy spurge

A few plants were again found again in 2013 along Old South Branch Road and treated with glyphosate. A second patch about 10 feet by 40 feet was treated along Rushes Lake Road. This site was also herbicide treated with glyphosate in 2013. Both sites will be revisited in 2014.

Cypress spurge

The spurge along STH 55 was herbicide treated in 2013 and monitoring in 2014 will determine if follow up treatments are required. This patch was significantly reduced since 2012 from one application. The treatment in 2013 was about ¼ of the amount in 2012. The MITW Interns completed follow up treatments along the highway 55/47 intersection during 2013. Monitoring indicates that treatment was only partially successful and additional work will be required in 2014.

Wild parsnip

The wild parsnip along CTH M was herbicide treated early in 2013 to address the plants before they grew large (down to approximately 40 plants from about 200 in 2012). By late summer, one mature plant was detected in this area and dug out to be disposed of properly. Monitoring will continue in 2014 for additional treatment. The MITW Interns treated wild parsnip along St. Joseph Church Road and also new areas of parsnip within the village of Keshena near the Wastewater Treatment Plant. Continued management of these areas will be necessary due to the size and locations of the parsnip. It was discovered that there is active vegetation mowing occurring in both areas and this will have to be monitored and controlled in order for treatments to be successful.

Exotic honeysuckles

LCD cut and stump treated 12 mature plants near Legend Lake in 2013. More controls will be needed moving forward as there are a large amount of mature plants throughout the southeast corner of Menominee.

Reed canary grass

Some small areas were treated by the MITW Interns and areas along the main stem of the Wolf River were mapped.

Buckthorns

LCD cut and stump treated 16 saplings and trees as they were encountered on taxable lands in 2013.

Norway maple

No controls done to date. All agencies need to keep watch for potential areas on routine survey activities. Forest infestations of Norway maple will most likely occur nearby homes and yards.

Tansy

Several areas have been found within the sustained yield forest lands since 2010. Other sites should be treated in the upcoming 2014 field season, but limited resources may be an issue. The sites continue to be monitored but no treatment was completed in 2013.

Japanese knotweed

Assistance was provided to Menominee County in the Legend Lake area and Shawano County in the northern part near the southern Reservation boundary. LCD treated the patch at the LLPOA yard waste site in 2013 with the help of LLPOA and MITW interns.

The knotweed was cut back to the ground in July, then it was herbicide treated with 2,4-D in August. Monitoring will be done in 2014 to see how it reacts to the treatment. A new patch was located along Long Marsh Road where tribal and LLPOA lands are intermixed. A cooperative effort was done in September with LCD, LLPOA and ESD to cut back an area about 1,200 square feet, then herbicide treat with 2,4-D. This site will also be monitored in 2014 for follow up treatments.

Autumn Olive

LCD and LLPOA located a large infestation in Blue Heron addition to Legend Lake in early October 2013. The entire area encompassed around 1 acre and had many mature plants full of fruit. All plants were cut; stump treated, and piled on the beach club for winter burning. Follow up in 2014 will be completed for seedling controls.

Forest Insects

Gypsy moth

Monitoring was completed throughout the Southeast lakes area; numbers of egg masses are very low. No treatments will be required in Menominee in 2014.

Invasive basswood thrips

Present within Menominee County, no controls are being done.

No information was provided by MTE for this report. MTE has informed the workgroup that they will be completing a biannual report on work accomplished and planning activities.

Emerald ash borer

No information was provided by MTE for this report. MTE has informed the workgroup that they will be completing a biannual report on work accomplished and planning activities.

Forest Pathogens

Beech bark disease

No information was provided by MTE for this report. MTE has informed the workgroup that they will be completing a biannual report on work accomplished and planning activities.

Oak wilt

26 prevention permits written out by LCD to landowners needing to cut oaks for construction or hazardous circumstances. Fungicide controls were completed at 8 sites by LCD. The MITW Interns assisted Menominee County with oak wilt pocket treatments.

No information was provided by MTE for this report. MTE has informed the workgroup that they will be completing a biannual report on work accomplished and planning activities.

***Heterobasidion irregulare* root disease**

No information was provided by MTE for this report. MTE has informed the workgroup that they will be completing a biannual report on work accomplished and planning activities.

Butternut canker

No information was provided by MTE for this report. MTE has informed the workgroup that they will be completing a biannual report on work accomplished and planning activities.

Dutch elm disease

No information was provided by MTE for this report. MTE has informed the workgroup that they will be completing a biannual report on work accomplished and planning activities.

White pine blister rust

No information was provided by MTE for this report. MTE has informed the workgroup that they will be completing a biannual report on work accomplished and planning activities.

Appendix 2 - Invasive Plant Report Form

Collection information

State WI County Menominee Date collected / observed _____
Collector name _____
Street address _____ City _____ State _____ Zip _____
Phone _____ Email _____

Characteristics & location

Plant name (Common and/or Latin name) _____

Size & density of infestation _____

Habitat description. Describe general habitat type such as forest interior, forest edge, old field, prairie, wetland, lakeshore, crop field, pasture, disturbed ground, urban setting type. Is it public or private land?

Wisconsin INVASIVE PLANTS OF THE FUTURE Project
Menominee Invasive Species Management Plan

Location landmarks. Provide enough details so site can be found again. Note nearby landmarks such as city name, roads, intersections, driveways, lake edges and other natural and cultural features.

Geographic coordinates (Complete one. Pinpoint using www.TopoZone.com)

1. Latitude _____ N Longitude _____ W
2. UTM _____ E _____ N
3. Township, Range, Section, Part Section

Signature

Date received: _____ Received by: _____
Date Verified: _____ Verified by: _____

"Invasive Plants 911" for Wisconsin

Based on their invasive behavior in other states and provinces, these six target plants in particular are the ones we are most concerned about. Let us know right away if they have been found in the state.

- Japanese stilt-grass • Hydrilla • European frog-bit
- Swallow-wort • Water chestnut • Giant hoardeed

Appendix 3 – Invasive species photos

Aquatic



Eurasian water-milfoil (UWEX)



Zebra mussels (S. van Mechelen)



Common reed (WDNR)

Elizabeth J. Czarapata



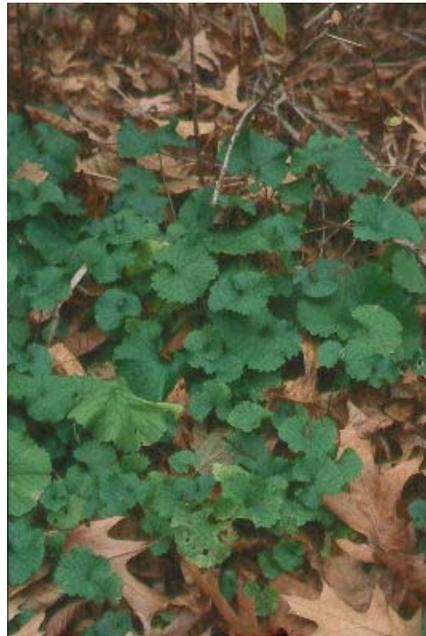
Purple loosestrife (E.J. Czarapata)



Elizabeth J. Czarapata

Curly-leaf pondweed (E.J. Czarapata)

Terrestrial



Garlic mustard – 1st year (WDNR)



Gypsy moth caterpillar (WDNR)



Gypsy moth egg mass (B. Queen)



Cypress spurge (Merel Black)



Leafy spurge (NRCS)



Honeysuckle (WDNR)



Wild parsnip (WDNR)



Reed canary grass (WDNR)



Japanese knotweed(Mde)



Buckthorn (WDNR)



Oak wilt (WDNR)



Emerald ash borer (USFS)



Norway maple



Japanese barberry (WDNR)



Tansy (Georg Slickers)

Appendix 4 – List of acronyms used

AIS	Aquatic Invasive Species
APHIS	Animal Plant Health Inspection Services
BIA	Bureau of Indian Affairs
BMPs	Best Management Practices
CLP	Curly-leaf Pondweed
ESD	Environmental Services Department
EWM	Eurasian Water Milfoil
GIS	Geographic Information Systems
GLRI	Great Lakes Restoration Initiative
ISMP	Invasive Species Management Plan
LCD	Menominee County Land Conservation Department
LLPRD	Legend Lake Protection and Rehabilitation District
LWRMP	Menominee County Land and Water Resource Management Plan
MITW	Menominee Indian Tribe of Wisconsin
MTE	Menominee Tribal Enterprises
NRCS	Natural Resource Conservation Services
TIP	Timberland Invasives Partnership
USDA	United States Department of Agriculture
USDOI	United States Department of Interior
USFWS	United States Fish and Wildlife Service
UWEX	University of Wisconsin- Extension
WDNR	Wisconsin Department of Natural Resources
WI-DATCP	Wisconsin Department of Agriculture Trade and Consumer Protection

Appendix 5 –Invasive Species Management Workplan

Project Title (species addressed):

Project Location:

Timeline:

Staff required (include any collaborative departments):

Treatment Type and Product Utilized (mechanical or chemical):

Estimated Cost:

Note; the workplan should also address if there is another plan detailing control application (e.g.... EAB Prescription)

Appendix 6 – Pesticide Protocol

A PROTOCOL

FOR THE REGULATION OF THE USE AND APPLICATION OF

HERBICIDES

And

INSECTICIDES

On the

MENOMINEE INDIAN RESERVATION

RE: USE OF HERBICIDES FOR POWER LINE
AND ROAD AND RAILROAD RIGHTS OF WAY (ROW'S),
FOR WILDLIFE HABITAT DEVELOPMENT,
FOR USE OF HERBICIDES FOR AQUATIC WEED CONTROL,
AND FOR INSECTICIDES FOR EMERGENCY USE IN FOREST MANAGEMENT
WHERE AQUATIC HABITATS MAY BE AFFECTED

Developed as a guideline for the use of herbicides

And other pesticides

In other applicable situations on the lands of the
Menominee Nation

Original version developed for analysis of:

ACCORD TM Herbicide (MONSANTO)

Date: April 15, 1992

Developed by:

George Howlett, Jr.; M.A.,M.S.

(Certified Professional Ecologist)

Environmental Services Department

Menominee Indian Tribe of Wisconsin

A PROTOCOL for the use of herbicides to remove plant cover for maintenance of line and road rights of way, for wildlife management purposes in conjunction with ROW maintenance, and for other uses of herbicides and other pesticides as situations occur which indicate that the pesticides may be an important tool for forest and vegetation management.

NOTE: This is a summarized version of the legislative approved herbicide protocol. The summary is given so that the reviewers will observe that the analysis of any requested use of a pesticide follows the specific technical requirements of the protocol for herbicide safety analysis.

1. STATEMENT OF PHILOSOPHY

It is the position of the Menominee Tribe of Indians of Wisconsin that the Menominee Lands must be maintained in as natural a state as possible, and that the quality of the natural ecosystem be maintained at the highest quality state possible.

The environmental scientists serving the Menominee Tribe wish to express their respect for the traditional values of the Menominee People with reference to maintaining the environmental integrity of the tribal lands. The following statements on pesticide use provide a technical analysis for the tribal legislature and executive offices so that said government branches can make decisions on herbicide and other pesticide use based on fact and in such a way that the traditional values are maintained so as to develop an Integrated Resources Management Plan (IRMP).

Herbicide Definition:

An herbicide is a chemical which is:

1. A plant growth regulator (auxin) which may imitate natural plant growth Regulators such as IAA (indol-3-acetic acid) to some degree and causes the plant to fail to grow under the control of natural feedback systems. Uncontrolled plant biochemical processes growth causes the plant to grow itself to death.

Or is:

2. A direct poison to a plant biochemical pathway and causes the plant to die by interfering with plant metabolism.

Qualities of an herbicide which have environmental side effects.

A. Strangeness (Xenobiotic reaction)

The compound and/or its constituent moieties are not normally found in natural systems and are “strange” to metabolic pathways (xenobiotites).

B. Toxicity

The compound causes death or seriously limits the health of an organism.

Subcategories of Toxicity:

B.1. Lethality:

Lethality is the capability to cause death. Sub-lethality is the capability of a compound to cause sickness or illness which is significant but does not by itself cause death. Organisms in poor health may die if affected by large doses of a sub-lethal compound.

B.2. Mutagenicity:

Mutagenicity is the capability of a compound to cause genetic mutation and thus affect the form or function of offspring.

B.3. Carcinogenicity:

Carcinogenicity is the capability of a compound to cause cancer in an organism (often called oncogenicity).

C. Toxicity of Breakdown products:

The decomposition products are often as toxic as or more so than the pesticide. (example in insecticides: DDE is as toxic as DDT).

D. Toxicity of by-products of manufacture:

E.g.; 2-4-D and 2-4-5-T have had Dioxin as an accidental by-product of the manufacturing process. 2,3,7,8-TCDD Dioxin is a very toxic molecule.

E. Persistence:

If a compound does not remain in an environment suitable for breakdown, it will be more persistent. Water soluble pesticides such as Atrazine go to groundwater and escape degradation. Compounds with strange or stable molecular radicals will be difficult to breakdown.

E.1. Bio-accumulation:

The compound is persistent, and is lipid soluble (non-polar). It remains in the fatty tissues rather than being excreted in the water waste.

E.2. Bio-magnification:

The bio-accumulation compound concentrates as it moves up the food chain.
e.g. DDT in eagle eggs.

F. Mobility:

The compound may be immobilized by ionic or polar chemical absorbency to soil and organic particles, or may be freely soluble in water without charge attraction to soil and organic particles, and thus freely leachable and transmissible to surface or groundwater.

G. Formulation of pesticide:

There are various formulations of almost any pesticide. These are necessary for the many conditions of application. Each presents problems as to toxicity and decomposition. This includes the surfactants and other "inert ingredients" which may have their own toxicities.

THE TECHNICAL REQUIREMENTS (TR's) FOR PESTICIDES TO BE CONSIDERED FOR POSSIBLE USE ON THE MENOMINEE RESERVATION

Herbicides which may be used on the Menominee Reservation should as closely as possible have the following features which duplicate naturally occurring herbicides such as Juglone, naturally produced by the genus Juglans.

TR-1: The Herbicide is Composed of Naturally Occurring Chemical Subunits:

TR-2: Herbicide Acute Toxicity is in category III or IV:

TR-3: The Herbicide is essentially Non-Mutagenic:

TR-4: The Herbicide is essentially Non-Carcinogenic:

TR-5: Herbicide Breakdown By-Products Meet Standards of TR-2, TR-3, TR-4:

TR-6: Contaminating By-Products of Herbicide Manufacture Meet Standards of TR-2, TR-3, TR-4:

TR-7: The Herbicide is Non-Persistent (Rapid Degradation):

TR-8: The Herbicide must not Bio-accumulate or Bio-magnify:

TR-9: The Herbicide is Immobile:

TR-10: Herbicide Formulation Meets the Above Requirements:

TR-11: The Herbicide is Selective for Target Organisms:

TR-12: The herbicide is Currently Registered and Approved by EPA;

TR-13: Applicators are Currently Trained and Licensed:

TR-14: Applicators have Properly Applied for Approval to Perform Herbicide Applications:

TR-15: Actual Application of Herbicide are within the Label Limits:

REQUIREMENTS FOR USE OF HERBICIDES ON MENOMINEE INDIAN LANDS

1. Use of chemical agents must meet the safety concerns expressed in the TECHNICAL REQUIREMENTS within reason.
2. The use of an herbicide is allowed only if the use of the herbicide is more environmentally positive than an alternative method for a necessary management action.
3. For ROW use, the use of the herbicide will better promote the tribal objectives for woodland and wildlife management than alternative methods, or herbicide use is considered integral to best management practices (BMP's) as a component in the inventory of land management tools.
4. The use of appropriate herbicides on Menominee lands will be part of the overall habitat management design only as long as all management actions are directed to reduce the need for herbicides and other vegetation removal actions to future years. The use of herbicides together with mechanical vegetation removal methods must be coordinated to the establishment of stable, long residency low plant communities such as meadow and low shrub communities. This will reduce the future quantity of herbicide application. It will also reduce the work load and costs for ROW maintenance, and reduce at the same time the disturbances to the land by any maintenance actions.
5. Herbicide application will be made by ground-based methods for right of way use.
6. No application of herbicides will be approved for use on submergent aquatic plants on any reservation lakes for limnological reasons. These reasons involve the known fact that herbicide use in lakes increases the rate of lake eutrophication. Nor may herbicides normally be used for the control of native emergent plants, again for limnological reasons. Until the ecology of the

introduced plant pest, purple loosestrife is better known and control methods are planned based on its life cycle, herbicides will not be used for purple loosestrife control except as scientifically controlled demonstration experiments.

PESTICIDES REVIEWED AND APPROVED
FOR USE ON THE
MENOMINEE INDIAN RESERVATION

Approved:	
ACEPHATE (Special emergency use insecticide)	Feb. 20, 1997
ENTRY II (Surfactant)	Mar. 15, 1996
GLYPHOSATE (in the ACCORD formulation)	Apr. 15, 1992
GLYPHOSATE (in the ROUNDUP formulation)	Mar. 15, 1996
TRICLOPYR (in the GARLON 4 formulation)	Apr. 15, 1992
TRICLOPYR (in the GARLON 3A formulation)	Dec. 29, 1995
OUST (SULFOMETURON METHYL)	Mar. 7, 1996
ENTRY II (Surfactant for Glyphosate products)	Mar. 15, 1996
VALENT X-77 (Surfactant)	Feb. 13, 1996
Minimal use requested because of potential nonylphenols after decomposition of ethoxides. Use Entry II if label allows.	

The above pesticides have been reviewed and approved by the MTE Forestry staff and by the Tribal Environmental Scientist for MITW.

Until The Tribal Environmental Staff and / or the Forestry Staff review the appropriate literature for additional pesticides proposed for potential use on the Menominee Reservation:

- A. And find that such an pesticide is determined to be safe and appropriate for a specifically designated use,
- B. And find that such an pesticide is more beneficial to approved environmental management plans than alternate management tools,

Appendix 7 - Public Notice Protocol

PART I Procedure for Public Notice

1. ISMP workgroup informed of field plans in the winter quarterly meeting
2. Lead Department will layout timeline for treatment according to ISMP workplan
3. Determine what information will be provided to the public from ISMP workplan that will adequately describe the treatment activity to the public
4. Lead department will develop draft public notice & circulate to other ISMP departments for review and comments
5. Provide public notice through local media, internet, postings of notice and signs
6. Any signs posted will be removed after adequate length of time (end of season) or the notices should be removed after it is judged safe to re-enter the area.

PART II Emergency Treatment

1. Special circumstances will apply to an emergency treatment to control invasive species outbreak
2. If any treatment occurs, the public will be notified through postings on the day of treatment
3. Tribal departments that conduct or coordinate treatments will provide additional notice through the internet on the day of treatment.

Appendix 8 – Education and outreach in 2013

Throughout the year all of the entities listed below provided educational materials and information including conducting training, meeting with stakeholders, handing out brochures, and articles.

- January** - MITW-ESD put an article on the ESD blog site that includes information from Appendix 1.
- Information was presented at the annual Tribal General Council.
- February** -
- March** -
- April** - LCD held invasive species training for all highway department workers.
- MITW-ESD put an article in the Tribal News that included information from Appendix 1.
- May** - LCD submitted articles to two local publications related to invasive species awareness.
- UWEX conducted the third Educational Event for SE Bass Lake residents. This has been an ongoing collaborative effort of UWEX, MITW-ESD, MITW-Conservation, and LCD.
 - Provided presentation and information at annual Moshawquit Lake Association meeting.
 - Attended Berry Lake Boat Landing Blitz event.
- June** -MITW-ESD gave invasive species training to our newly hired interns and tribal staff.
- July** - UWEX provided Clean Boats/Clean Waters training for MITW Environmental Services Department Interns
- August** -
- September** - LCD mailed 150 landowner packets to lake owners to inform on many issues, to include invasive species awareness and control.

October -

November -

December - MITW-ESD, UWEX, and LCD attended the annual Legend Lake AIS meeting.