

Van Etten Lake Ecological Reference Area (ERA) Management Plan

Administrative Information

- This management plan is for the Van Etten Lake Floodplain Forest, also known as the Van Etten Lake Southern Floodplain Forest. This ERA is located in the Grayling FMU, Compartment 72 (YOE2020) stands 1, 2, 3, 4, 5, 39, 401.
- This ERA is in Iosco County at T24N R9E, Section 6 E1/2 SW1/4
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 - Conservation planners:
 - Michigan Natural Resources Council, Phyllis Higman at mnac@cyberspace.org or at (517) 373-6983
 - Pine River Van Etten Lake Watershed Coalition (PRVEL):
 - Carole Plunkey, caroleplunkey@charter.net or (989) 344-0753
 - Doug Jager, dj62852@charter.net (586) 216-9899
- The Van Etten Lake ERA is in an MNFI Natural Community Element Occurrence (EO) for a southern Floodplain Forest that is 439 acres in size. Most of the ERA is privately owned with only 18% or 80 acres located on state forest land managed by the Grayling Forest Management Unit. The private portion of the EO is divided across 5 land owners with parcel sizes ranging between 20-120 acres.
- Other documents related to this ERA are the Van Etten Lake Floodplain Forest ERA Management Plan approved in 2008. This new ERA plan will replace the original ERA plan.

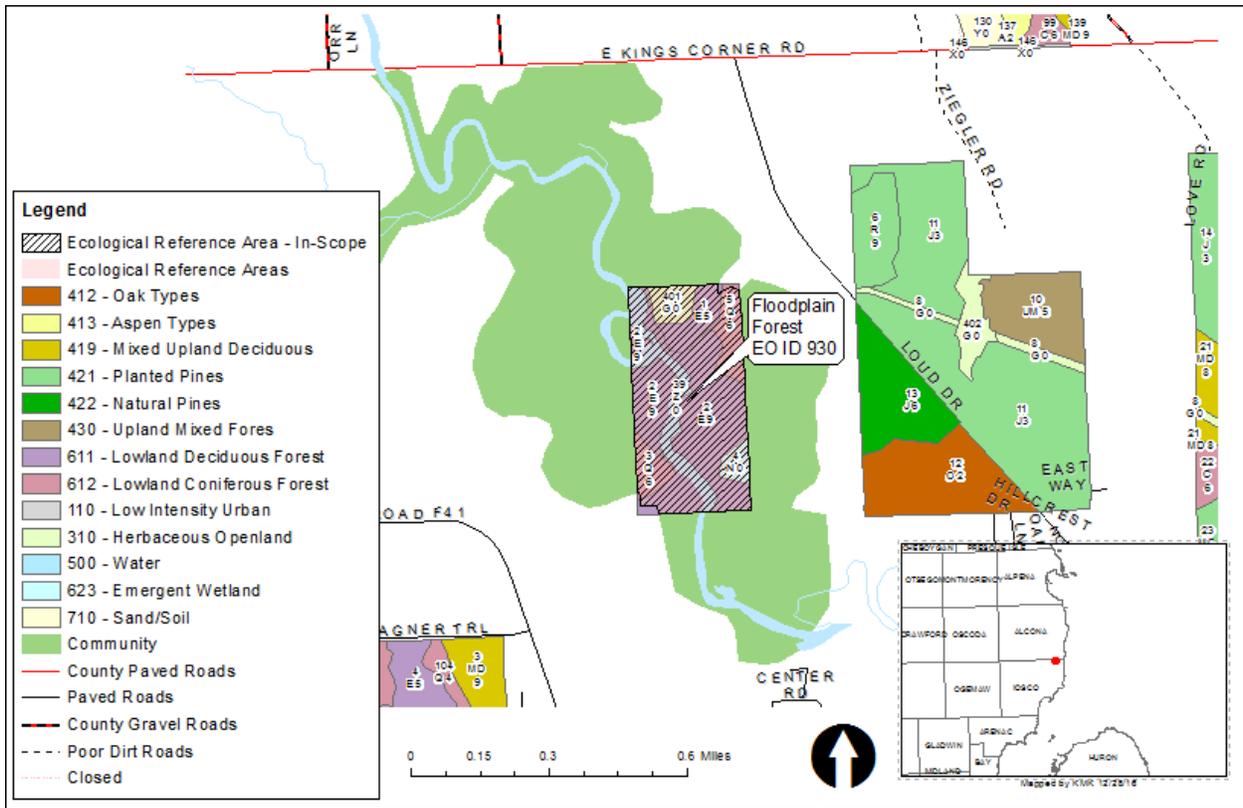


Figure 1: Van Etten ERA area map with EO ID Label, Forest Covertype, and MNFI Community Outline

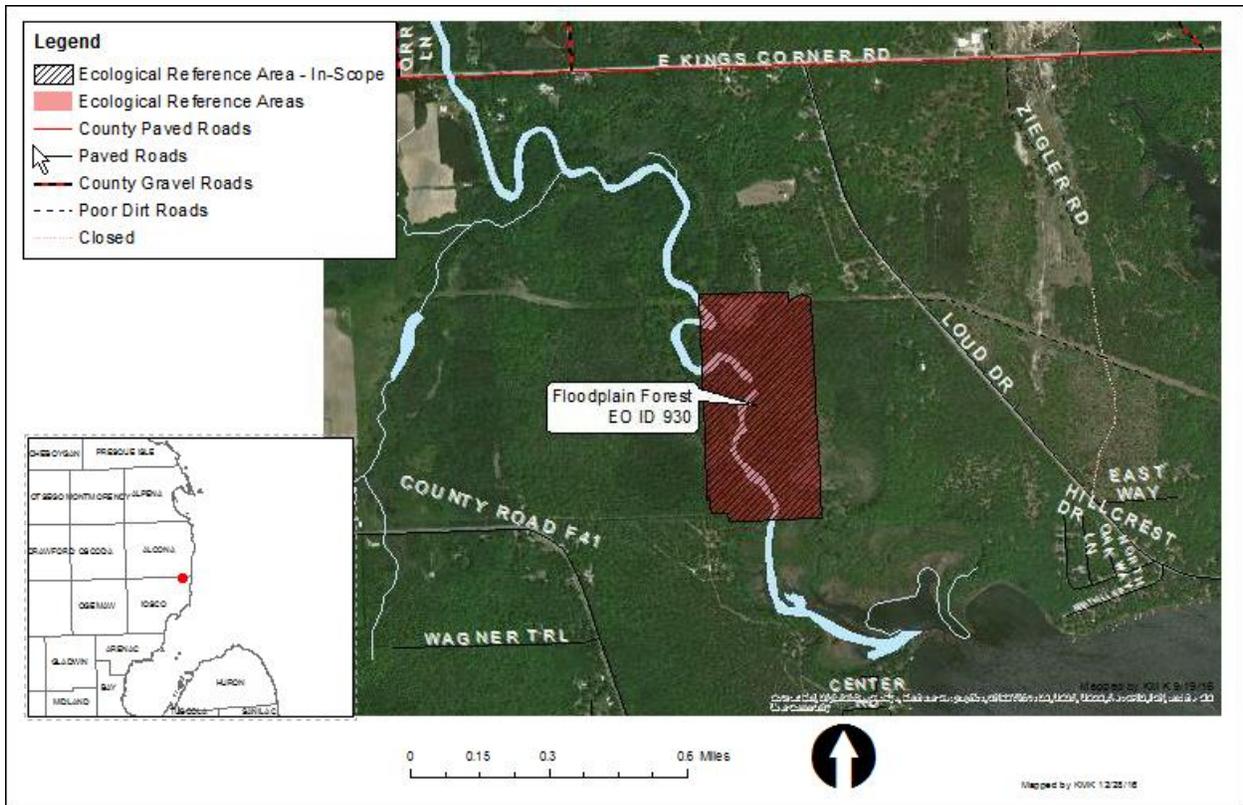


Figure 2: Van Etten Lake ERA Imagery

Conservation Values

Floodplain forest (G3 S3) is a bottomland, deciduous or deciduous-conifer forest community occupying low-lying areas adjacent to streams and rivers of third order or greater, and subject to periodic over-the-bank flooding and cycles of erosion and deposition. Species composition and community structure vary regionally and are influenced by flooding frequency and duration. Silver maple (*Acer saccharinum*) and green ash (*Fraxinus pennsylvanica*) are typically major overstory dominants. Floodplain forests occur along major rivers throughout the state, but are most extensive in the Lower Peninsula. Species richness is greatest in the southern Lower Peninsula, where floodplain species reach the northern extent of their range.

- Van Etten Lake ERA: EO_ID 930, BC Ranks, Last observed 2006-09-18

Van Etten Lake is one of 32 floodplain forests ranked BC or higher within the state. This floodplain forest occurs in the former channels of the Pine River in a flat, poorly drained lakeplain with sands, loamy sands, and loams. In addition to floodplain forest, the site also contains EOs for northern shrub thicket and northern wet meadow. The floodplain forest is dominated by an open canopy of silver maple (*Acer saccharinum*) in areas of frequent inundation. Wet swales are dominated by northern shrub thicket with nannyberry (*Viburnum lentago*), American Elm (*Ulmus Americana*), and black ash (*Fraxinus nigra*) and formerly flooded zones are now dominated by cattails (*Typha spp.*) and northern wet meadow species. Isolated meander scars on both sides of the river are dominated by well-developed hummock and hollow microtopography and a relatively thick well-developed moss ground layer. The floodplain forest borders a rich conifer swamp. Over 135 vascular plants were identified during the 2006 survey.

- High Conservation Value (HCV) attributes:

The Pine River flows through the Van Etten Lake ERA. This river is a Cold-Water Streams SCA (Type III Stream). Other values in the area to be considered when performing management in the ERA include:

- Sport Fisheries: Trout occur upstream from Van Etten Lake with walleye, green sunfish, small mouth bass closer to the lake. Salmonids (chinook and steelhead) run up river from Lake Huron.
- Globally imperiled or state endangered or threatened native species: (ranked G1, G2, G2 by NatureServe, and S1, S2 by MNFI, state/federally listed or proposed for listing as threatened or endangered (MI and U.S.) and on IUCN Red List within the Pine River or vicinity.
 - The Channel Darter (*Percina copelandi*) was last observed in 1994 upstream from the ERA (maybe more recent to be verified with the USFS). It is currently endangered (legally protected) while ranked as S1S2, ranging from critically imperiled to imperiled. Worldwide, the species is apparently secure (G4) though it may be quite rare in parts of its range.
 - In Michigan, Wild Rice (*Zizania aquatica*) is currently listed as threatened, last observed in 1937 around Van Etten Lake. Its state rank is uncertain ranging from

- imperiled to vulnerable (S2S3). Globally, wild rice is listed as a G5, meaning demonstrably secure.
 - The Eastern Massasauga (*Sistrurus catenatus catenatus*) was last observed in 1992. While listed as a species of special concern state-wide, the eastern massasauga is now federally listed as threatened species. Locally, it is ranked as a rare or uncommon in the state (S3) while globally, it is either very rare or vulnerable to extinction throughout its range.
- Species of special concern (SC)- Due to vulnerability, declining trends, disjunct distributions, or endemic status; Ranked S3 by MNFI
 - As a species of special concern (SC), the Blanding's Turtle (*Emys blandingii*) is not legally protected (SC). Even though it was not in the ERA, one individual last observed in 2005. Locally, the turtle is rare or uncommon in state (S3) while globally it is apparently secure (G4).
 - The Bald Eagle (*Haliaeetus leucocephalus*) is listed as a species of special concern (SC). The bird is listed as demonstrably secure (G5) globally while apparently secure (S4) in the state.
 - Even the secretive locust is a species of special concern (SC), it is considered imperiled (S2) or at risk of being endangered state-wide. Globally, the locust is uncertain ranging from imperiled to vulnerable.
 - As a species of special concern (SC), the Campeloma spire snail (*Cincinnatia cincinnatiensis*) statewide is classified as vulnerable (S3) while globally it is secure (G5).

Historically, logging infrastructure including corduroy roads and dams occurred within the Van Etten Lake ERA. In addition, the lake itself was used for log storage.

Threats Assessment

Primary threats to the Van Etten Lake Floodplain Forest are alteration of hydrology, transportation infrastructure, pollution, and invasive species. Alteration of hydrology through changing of water flow is from development of rural and urban development and water control infrastructures such as dams. The utility lines (transportation infrastructure) that bisect the site have locally degraded the upland and floodplain forest adjacent to it (assessment on degradation tbd this summer). Accounts of sedimentation have been recorded from erosion sites along the Pine River and Van Etten Lake.

Potential invasive species which may impact the ERA include:

Below the dam the following species have been documented: round goby (*Neogobius melanostomus*); common burdock (*Arctium minus*), common mullein (*Verbascum thapsu*), Japanese barberry (*Berberis thunbergii*), and lawn prunella (*Prunella vulgaris*). Currently common burdock is the main threat to species composition. Garlic Mustard (*Alliaria petiolata*) was reported downstream from Van Etten Lake along the AuSable River. Additional potential invasive species currently not found include Dame's rocket (*Hesperis matronalis*), moneywort (*Lysimachia nummularia*), ground ivy (*Glechoma hederacea*), purple loosestrife (*Lythrum salicaria*), narrow-leaved cat-tail (*Typha angustifolia*), hybrid cat-tail (*Typha xglauca*), reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), European marsh thistle

(*Cirsium palustre*), glossy buckthorn (*Rhamnus frangula*), common buckthorn (*R. cathartica*), Eurasian honeysuckles (*Lonicera morrowii*, *L. japonica*, *L. maackii*, *L. sempervirens*, *L. tatarica*, *L. xbella*, and *L. xylosteum*), multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), common privet (*Ligustrum vulgare*), white mulberry (*Morus alba*), and Norway maple (*Acer platanoides*). In addition to non-native plant species, non-native pathogens and insects have profoundly altered floodplain forests (e.g., the emerald ash borer has eliminated a majority of the ash trees). Remaining Ash in the vicinity may be more susceptible to Emerald Ash Borer (EAB) through stress from changing lake levels and the site's close proximity to a campground which can bring in EAB through transported firewood.

Management Goals

Goals and resulting management objectives to achieve those goals for the Van Etten Lake Floodplain Forest should address the following issues of importance to the specific site.

- Restoration of and/or expansion of the Floodplain forest ERA where applicable.
- Eliminate invasive species (or maintain an absence of invasive species). In some areas that may not be possible hence we want to minimize presence of invasive species.
- To maintain or increase the representation of native plants, indicator species, and rare species.
- Reduce other threats such as alteration of hydrology, etc.
- Allow natural processes to occur.
- Increase protection within Natural Community Elemental Occurrences through collaboration and promotion of Conservation Easements and acquisition. If possible, collaborate with local Land Conservancies to ID this as a priority area for acquisition.

Management Objectives

Management objectives are the means to achieve the management goals of the specific site and should be time specific if possible.

- Identify and prioritize critical areas within the ERA to treat for invasive species.
- Allow blowdown/windthrow and insect mortality to occur without salvage harvest.
- Determine if there are impacts to hydrological system.
- Work with adjacent landowners to conserve floodplain forest on adjacent ownerships; consider conservation easements and acquisitions.
- Continue working with Pine River Van Etten Lake Watershed Coalition (PRVEL) to address invasives, help with site restoration, monitor and repair resource damage sites (i.e. erosion, agricultural inputs, etc. at all levels of the watershed), and help to maintain the floodplain habitat.
- Monitor the remaining live Ash Trees on site to determine if any have EAB resistance or if we will totally lose the Ash component of the habitat.
- Assess EO quality every 10-20 years.

Management Actions

(M= Maintenance action, R= Restoration action)

- Monitor for invasives through use of volunteers (PRVEL etc.) (M)

- Remove invasive plants using appropriate control methods for that particular species (hand-pull, herbicide, Rx) (M, R) using staff, cooperative partners (USFS, Huron Pines) and volunteers (i.e; PRVEL) (R).
- Follow BMP Riparian Zone Management (RMZ) guidelines related to lake, stream, pond or open water wetlands, which require a minimum zone width of 100 feet. Activity within the RMZ is acceptable where there is little chance of significant soil disturbance, no chance of water sedimentation, and only select trees are being removed [2018 Forest BMP Manual, pg 11]. (M,R)
- Follow BMP guidance for fens, bogs, and other rare wetland types. Harvest activity immediately adjacent to fens, bogs, and other rare wetlands may encounter weak soils that are highly susceptible to rutting. When timber harvesting occurs adjacent to these features, ground and vegetation disturbance within the wetland area should be avoided. To prevent sedimentation or excessive nutrient delivery into a rare wetland, timber harvests should be avoided along slopes immediately above and leading into a rare wetland [2018 Forest BMP Manual pg. 16]. (M,R)
- Proposed activity including timber management within RMZs adjacent to ERAs should be evaluated on a case-by-case basis and are acceptable where there is minimal risk of soil disturbance and sedimentation, and minimal risk of negatively impacting ERA quality.
- Work with local units of government to manage floodplain forest at a landscape scale (M,R)
- Educate the public on the threats posed due to invasive species.
- Encourage volunteer/public involvement for habitat restoration through voluntary event days. (M,R)
- Install culverts if necessary to restore natural hydrological flow. (R)
- Update plan with additional knowledge as it becomes available. (M)
- Priority needs to be given to obtaining functional easements for access to state lands. (M,R)
- Address human caused erosion sites. (R)

Monitoring

- MNFI with the help of the DNR, will update the existing inventory of threatened and endangered species along with species of special concern. DNR staff with help from volunteers will see that the ERA is monitored annually to bi-annually and report any concerns to MNFI. DNR staff will work with MNFI and other experts to update EO inventory and re-evaluate the EO ranking. (M, R).
- We will request a MNFI survey in 10 years to evaluate the progress on management efforts and determine the EO ranking has changed.
 - The representation of native plants, indicator species, and rare species will be determined if they have been maintained or have increased.
 - Alteration of hydrology (if any notable) will be determined if still a threat based on viewing the status of identified/or restored soil eroded streambanks.
- Unit staff will evaluate the effects of invasive species treatment growing year post treatment and for two successive years thereafter (dependent upon removal method and species).
 - In treated areas, invasive species populations will be counted by the DNR, conservation groups (PRVEL), and volunteers.

Imagery

ERA boundaries are derived from the underlying Natural Community EO boundary which is mapped using NatureServe standards. EO Boundaries are informed by vegetation and other site characteristics including soils, landform, and/or historic aerial imagery. As a result, it is not uncommon for EO/ERA boundaries to differ from forest inventory stand boundaries. If these differences result in potential conflicts with proposed forest activities, consult with the Forest Conservation and Certification Specialist.

References

Kost, M.A., D.A. Albert, J.G. B.S. Slaughter, R.K. Schillo, C.R. Weber, and K.A. Chapman. 2007. Natural Communities of Michigan: Classification and Description. Michigan Natural Features Inventory, Report No. 2007-21, Lansing, MI. Floodplain Forest

Tepley, A.J., J.G. Cohen, and L. Huberty. 2004. Natural community abstract for floodplain forest. Michigan Natural Features Inventory, Lansing, MI.15 pp
https://mnfi.anr.msu.edu/abstracts/ecology/floodplain_forest.pdf

Floodplain Forest Natural Community Management Guidance by Michigan Natural Features Inventory
<https://mnfi.anr.msu.edu/>

Van Etten Lake Floodplain Forest ERA Management Plan FINAL-approved Nov 6, 2008 by Grayling Forest Management Units

Approvals

Forest Resource Division
Date

Wildlife Division
Date

Fisheries Division
Date

Parks And Recreation Division
Date