

Invasive Species Inventory
of
Louis' Bluff State Natural Area

Tiesberg Lane
N1490 County Road N
Lyndon Station WI
T14N R6E S18

October 12th 2018



Pine relict atop Louis' Bluff 8/14/2018

Prepared by:
Alex Wenthe, Jake Puffer, Yasi Rezai
Quercus Land Stewardship Services
Black Earth WI 53515



Table of Contents

Introduction & Description.....	3
Methods.....	4
Inventory.....	5
Assessment Area 1.....	5
Assessment Area 2.....	8
Assessment Area 3.....	11
Assessment Area 4.....	14
Observations & Summary.....	16
Points of Interest List.....	17
Map Overview.....	18

Introduction

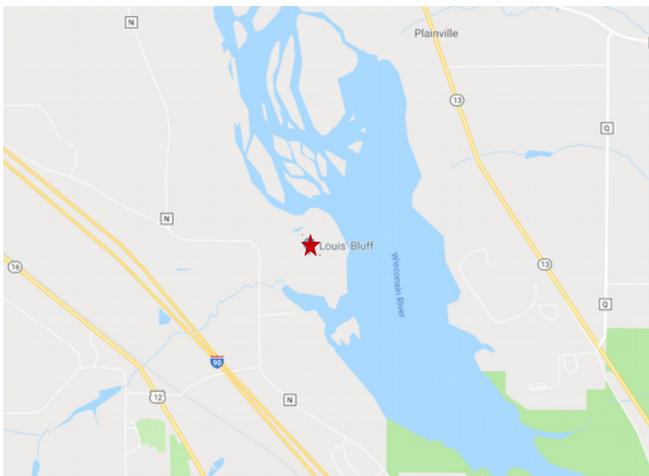
This is an inventory of the invasive plant species found at Louis' Bluff State Natural Area in Lyndon Station WI. The inventory focuses on identifying terrestrial and emergent plants from the WDNR-NR40 list of prohibited and restricted invasive species. The survey was completed between March and September of 2018 by Quercus Land Stewardship Services in cooperation with Groundswell Conservancy and the property owners Frank and Mariana Weinhold.

Site Description

Louis Bluff is a 134 acre property located approximately four miles northwest of the town of Wisconsin Dells. The property is situated along the west shoreline of the Wisconsin River and contains a wide variety of aquatic and terrestrial habitats. The namesake feature, Louis' Bluff, is a large sandstone outcropping that rises over a hundred feet from the river. The local geology and natural history give rise to many different upland and wetland communities on the property, including emergent marsh, shrub-carr, and floodplain forest, as well as dry-mesic forest and pine relict. The wide range of diverse natural communities allows numerous plants and animals to call this property home, including many not often found in this part of the state.

Along with interesting biological and geological features, Louis Bluff has a rich cultural history. The site has been occupied by humans for many centuries. High vantage points overlooking major bodies of water were significant in Native American culture and is evidenced on this site by the cave paintings found atop the bluff. Early in our county's history, the site was settled by pioneer Louis Dupless and remained in his family for generations. The Dupless family was laid to rest in a small cemetery on the property near the river. The cemetery is still intact and listed in the WI State Historical Society database as cemetery BJU-0025. The high biological diversity along with significant cultural history makes this a unique property in Wisconsin and worthy of long term protection, which is provided by a conservation easement held by Groundswell Conservancy and designation as a State Natural Area by the Wisconsin DNR.

Location Map



Aerial Photo



Methods

The goal of this survey is to complete a thorough and standardized observation of the invasive species found at Louis' Bluff SNA for management purposes. To meet this goal we combined elements from the current management plan with sampling techniques adapted from Wisconsin Rapid Assessment Methodology (WDNR 2018 <https://dnr.wi.gov/topic/Wetlands/documents/TimedMeanderSamplingProtocol.pdf>).

We completed the survey in three separate trips to the property over the course of one growing season. The first visit, in March of 2018, was a general overview and history of the property with the current landowner, Mariana Weinhold. The formal survey began on May 30th 2018 when we surveyed the majority of the terrestrial assessment areas. We returned on August 14th 2018 to complete the remaining areas and the assess the Wisconsin River islands.

We conducted a timed-meander survey in four (4) *Assessment Areas* with a *Search Interval* of six (6) hours per area. We used two Garmin Oregon 650 GPS devices to record sixty (60) *Points of Interest* throughout the Assessment Areas. Points were assigned at the discretion of the surveyor. The prevalence of each species was ranked as *Isolated*, *Scattered*, *Prevalent*, or *Dense* depending on the level of infestation within the Assessment Area. The agricultural fields and pine plantation were excluded from the formal survey, but still received informal assessments.

Management Units and Assessment Areas

The current management plan, created by Groundswell Conservancy, divides the property into distinct *Management Units*. The units are defined mostly by the natural communities that dominate each area. For consistency, we used the same Management Units in this inventory, including the agricultural and homestead zones. We also added a *Wisconsin River Islands* unit to include the sandbar portions of the property in our formal survey. In an effort to standardize our survey, we created the four Assessment Areas by grouping the Management Units that contain similar natural communities, geographic location, and acreages.

Management Units

- Alder Thicket/ Shrub Wetland
- Floodplain Forest - Stand 1
- Floodplain Forest - Stand 2
- Northern Dry-mesic Forest
- Southern Dry-mesic Forest
- Pine Plantation
- Pine Relict
- Wisconsin River Islands

Assessment Areas

- Shrub Wetland and Floodplain Forest 1N (~30 acres)
- Floodplain Forest stands 1S, 2 and Homestead (~23 acres)
- Pine Relict, Southern Dry-Mesic Forest, Northern Dry-Mesic Forest (~30 acres)
- Wisconsin River Islands (~28 acres)

Inventory

Assessment Area 1: Shrub Wetland and Floodplain Forest 1N (~30acres)

Observed invasive species

Burning bush (*Euonymus alatus*) Scattered

Found on the upland edges of the area and in pockets of higher ground near the center of the Shrub Wetland. Scattered individuals also on the eastern and southern edge of Floodplain Forest. Most individuals 2-5 years in age.

Bush honeysuckle (*Lonicera sp.*) Scattered

Scattered individuals throughout area. Most prevalent along southern edge near Floodplain Forest. Also found along northeastern edge near upland. Most individuals 2-3 years in age.

Bull thistle (*Cirsium vulgare*) Isolated

Uncommon, few individuals in southwest portion of unit.

Common buckthorn (*Rhamnus cathartica*) Scattered

Scattered individuals on edges of unit near uplands. Most prevalent along southern edge near Floodplain Forest. Individuals typically less than 5 years, occasionally 10+ years in age.

Motherwort (*Leonurus cardiaca*) Prevalent

Prevalent throughout unit. Dense patches form dominant ground-cover on maintained trails and in areas of dense shade.

Phragmites (*Phragmites australis*) Prevalent

Prevalent along the northern shoreline. Dominant in slough areas along shoreline and prevalent in central slough. Isolated in the interior of the unit.

Reed canary grass (*Phalaris arundinacea*) Prevalent

Prevalent throughout unit but rarely dense. Populations are not as dominant as typical infestations. The species is likely being suppressed by dense shade from the maple/birch canopy.

Points of Interest

<u>ID</u>	<u>Unit</u>	<u>Invasives present</u>	<u>Notes</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Date</u>
4	SC	Phragmites	Present throughout	43.6937258206308	-89.8285691253841	08/14/18
5	SC	Phragmites, RCG	Dense phragmites	43.6940270662308	-89.8301635310054	08/14/18
7	SC	Phragmites, RCG	Dense phragmites	43.6952181346715	-89.8322626110166	08/14/18
8	SC	RCG	scattered	43.6944788508117	-89.832620266825	08/14/18
9	SC	Phragmites, RCG	Dense phragmites	43.6957389023155	-89.8331862967461	08/14/18
10	SC	RCG	Near property boundary	43.6959984898567	-89.8334893863648	08/14/18
24	SC	RCG	scattered	43.6929866205901	-89.829678889364	05/30/18
25	SC	RCG	scattered	43.6934579350054	-89.827696653083	05/30/18
43	FPF1-N	Moonseed (native)	Very dense patch	43.6932290252298	-89.8272560164332	05/30/18
44	FPF1-N	RCG	Yam	43.6928637418896	-89.8270950000733	05/30/18
45	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6924429703504	-89.8276269994676	05/30/18
46	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6924579739571	-89.8276119958609	05/30/18
47	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6921760067344	-89.8278539814055	05/30/18
48	FPF1-N	RCG	Population	43.6920950375497	-89.8283360246569	05/30/18
49	FPF1-N	Buckthorn, Honeysuckle	Fruiting tree(s)	43.6919549759477	-89.8288520146161	05/30/18
50	FPF1-N	Buckthorn, Honeysuckle	Fruiting tree(s)	43.6919549759477	-89.8288530204445	05/30/18
51	FPF1-N	Buckthorn, Honeysuckle	Fruiting tree(s)	43.6919009964913	-89.8290739674121	05/30/18
52	FPF1-N	Buckthorn	Fruiting tree(s)	43.6918979790062	-89.8293049726635	05/30/18
53	FPF1-N	Buckthorn	Fruiting tree(s)	43.6919579934329	-89.8295310325921	05/30/18
54	FPF1-N	Buckthorn, Honeysuckle	Fruiting tree(s)	43.6919200234115	-89.8298359662294	05/30/18
55	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6921104602516	-89.8303974699229	05/30/18
56	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6922747455537	-89.8314670845866	05/30/18
57	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6926306411624	-89.8318514786661	05/30/18
58	FPF1-N	Autumn Olive, SKW	ROW edge	43.6917890142649	-89.8327800258994	243.373337

Threats

High – Reed canary grass, Phragmites

Medium – Burning bush, Bush honeysuckle, Common buckthorn, Moneywort

Recommendations

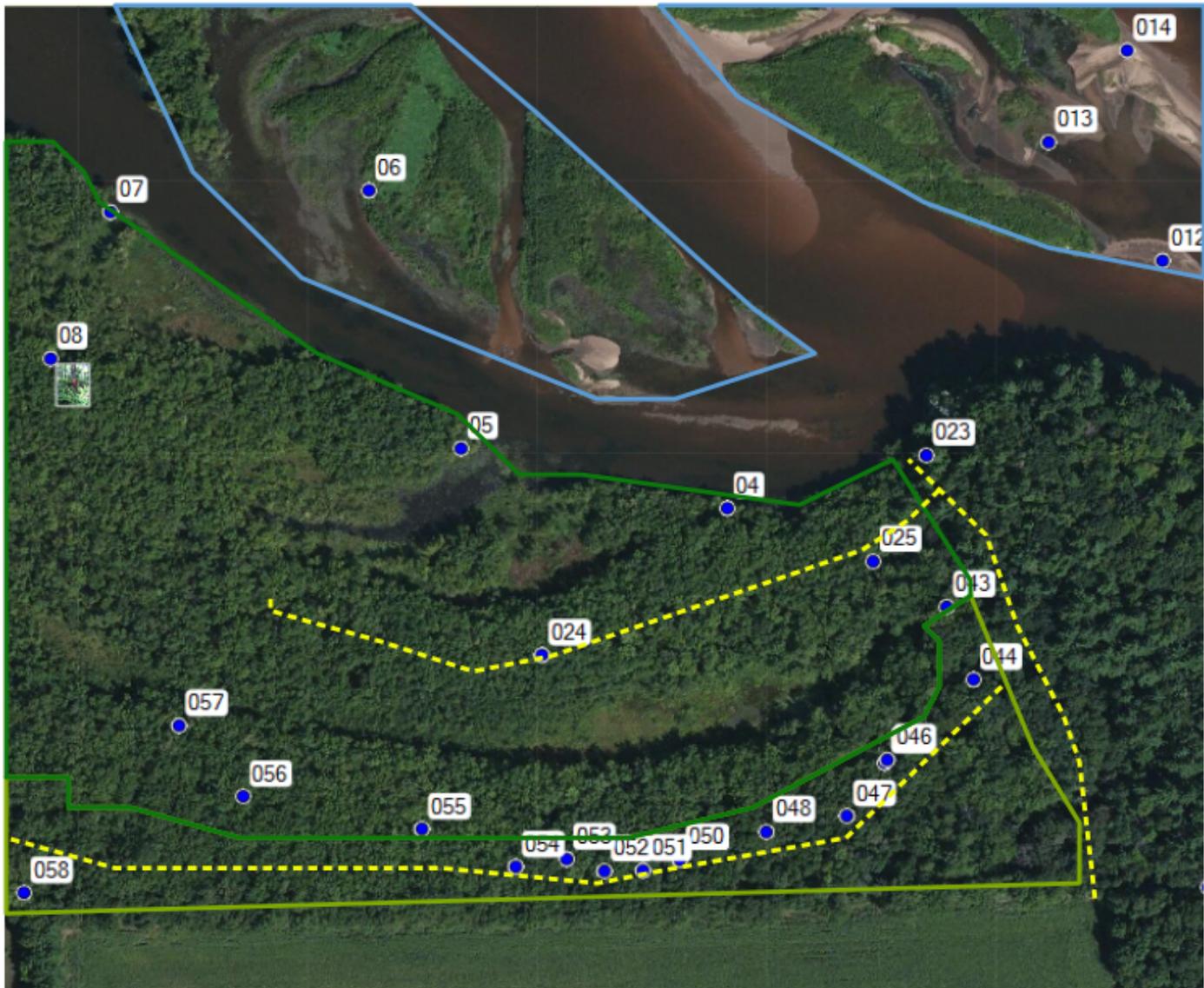
Control reed canary grass and phragmites in open areas where trees have fallen. Mow patches with string trimmer in the early summer and apply grass-specific or aquatic herbicides (as label permits) in the late summer.

Control invasive shrubs by cutting the plant and treating the stump with an approved herbicide. Use herbicides recommended for cut-stump application to the target species and **approved for aquatic areas**, such as Garlon 3A.

Monitor for new populations of invasive species, like narrowleaf bittercress, and focus efforts to prevent establishment of new invasives in this Area

Keep forest canopy intact to reduce invasion of reed canary grass and phragmites.

Louis Bluff
Invasive Species Inventory
2018



-  Point of Interest
-  Trail
-  Flood Plain Forest 1
-  Shrub Wetland
-  WI River Islands



Assessment Area 2: Floodplain Forest stands 1S, 2, and Homestead (~23 acres)

Observed invasive species

Autumn olive (*Elaeagnus umbellata*) **Isolated**

Small saplings along trail in FPF 1S. Few larger individuals along driveway, on field edge, and near Homestead.

Burdock (*Arctium minus*) **Isolated**

Uncommon, few individuals along driveway and field edges near Homestead.

Burning bush (*Euonymus alatus*) **Scattered**

Moderate population in forest around Homestead, near original ornamental planting. Individuals ranging from 1-10 years in age.

Bush honeysuckle (*Lonicera sp.*) **Isolated**

Much less apparent than than Assessment Area 1. Few small individuals along trails and in FPF2. Large individuals near driveway.

Common buckthorn (*Rhamnus cathartica*) **Scattered**

Few individual throughout area. Mostly smaller trees, <5 years old. Large, fruit-bearing, trees found along driveway near the southern edge of the area.

Dame's rocket (*Hesperis matronalis*) **Scattered**

Scattered individuals near homestead and along trails in upland.

Multiflora rose (*Rosa multiflora*) **Scattered**

Large individual in homestead garden. Smaller individuals along upland trails

Motherwort (*Leonurus cardiaca*) **Dense**

Prevalent to dense throughout FPF1S and 2. Found in patches throughout the area, especially near trails.

Narrowleaf bittercress (*Cardamine impatiens*) **Scattered**

Early Detection Rapid Response Species (EDRR). Hard to detect, seemingly scattered, but could quickly become prevalent throughout the area. Large patches found in southwest portion of FPF 2 (POI# 38 & 39).

Oriental bittersweet (*Celastrus orbiculata*) **Scattered**

Scattered individuals north and west of homestead along trails.

Periwinkle (*Vinca Minor*) **Isolated**

Two dense patches in homestead plantings near the Gazebo.

Phragmites (*Phragmites australis*) **Scattered**
 Scattered individuals along eastern shoreline of FPF2.

Reed canary grass (*Phalaris arundinacea*) **Prevalent**
 Prevalent throughout unit, but rarely dominant. Some dense patches along shoreline. Populations are not as dominant as typical infestations. It is likely being suppressed by dense shade from maple/birch canopy.

Sweet woodruff (*Galium odoratum*) **Isolated**
 Dense patch near homestead. Planting escaped onto nearby forested slope.

Points of Interest

ID	Unit	Invasives present	Notes	Latitude	Longitude	Date
15	HM	Autumn Olive, Buckthorn	Fruiting tree(s)	43.6901448201388	-89.8323663789779	08/14/18
16	HM	Buckthorn	Fruiting tree(s)	43.6901311576366	-89.8302605096251	08/14/18
17	HM	Chickory, Burdock, Dame's Rocket	scattered	43.6903638392687	-89.8266171477735	05/30/18
29	HM	Oriental Bittersweet, Winged Euonymus	scattered individuals	43.6905670166016	-89.8256259877235	05/30/18
30	HM	Vinca minor, Woodruff	Homestead	43.6902630049735	-89.8251929786056	05/30/18
31	HM	Daylilies, Multiflora rose	Homestead	43.6901830416173	-89.825659012422	05/30/18
32	HM	Daylilies, Burdock, Dame's rocket, Multiflora rose	Throughout homestead	43.6900180019438	-89.8249980155379	05/30/18
33	FPF1-S	RCG	scattered	43.6892965715379	-89.8243359290063	05/30/18
34	FPF2	RCG	scattered	43.688393002376	-89.8246868792921	05/30/18
35	FPF2	RCG	scattered	43.6892965715379	-89.8235336970538	05/30/18
36	FPF2	Phragmites, RCG	Scattered, prevalent	43.6888461280614	-89.8230521567166	05/30/18
37	FPF2	RCG	scattered	43.6875989008695	-89.8228819202632	05/30/18
38	FPF2	Narrowleaf bittercress	EDRR	43.6877795308828	-89.8230641428381	05/30/18
39	FPF2	Narrowleaf bittercress	EDRR	43.688247743994	-89.8233048710972	05/30/18

Threats

High – Reed canary grass, Phragmites, Oriental bittersweet

Medium – Burning bush, Bush honeysuckle, Common buckthorn, Moneywort

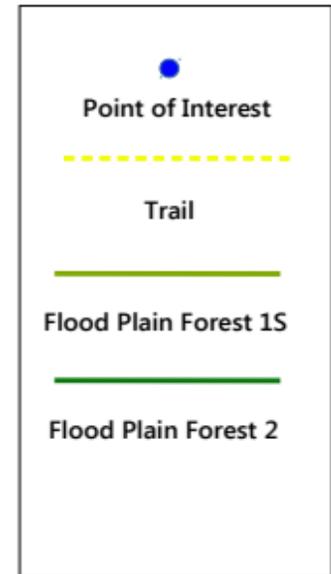
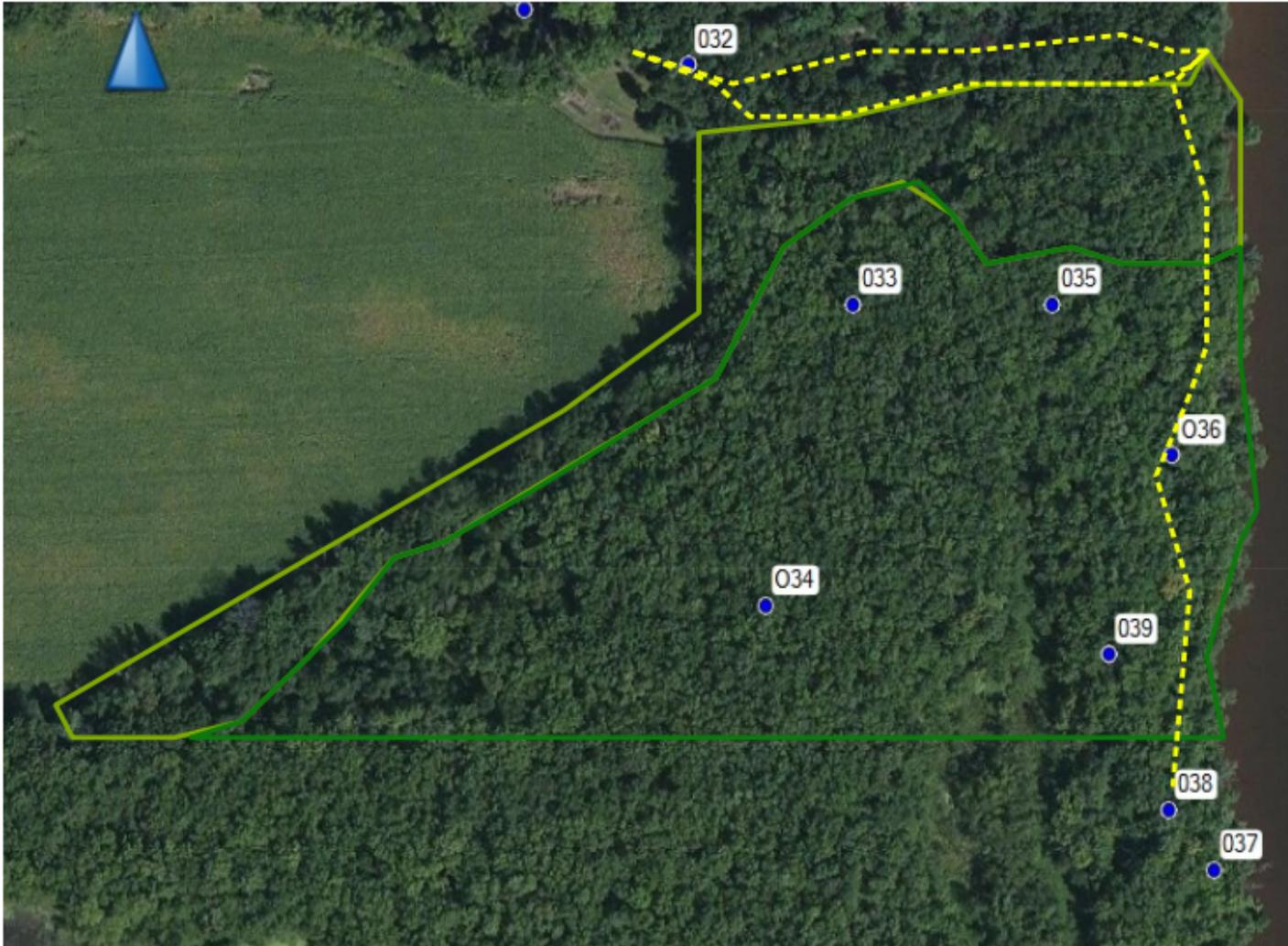
Recommendations

Control reed canary grass and phragmites in open areas where trees have fallen. Mow patches with string-trimmer in early summer and apply grass-specific or aquatic herbicides in the late summer, as label permits.

Control invasive shrubs, including oriental bittersweet, by cutting the plant and treating the stump with an approved herbicide. Use herbicides recommended for cut-stump application to the target species in aquatic areas, such as Garlon 3A.

Monitor for new populations of invasive species not on this list, like narrowleaf bittercress, and focus removal efforts to prevent establishment in this unit.

Louis Bluff
Invasive Species Inventory
2018



Assessment Area 3: Pine Relict, Southern Dry-Mesic, Northern Dry-Mesic Forest (~30 acres)

Observed invasive species

Black locust (*Robinia pseudoacacia*) Isolated

Small clone near “first beach” with a few saplings and large trees. Also a small clone with large trees is present along cliffs in Northeast (POI #03).

Bull thistle (*Cirsium vulgare*) Isolated

Uncommon, few individuals along deer trails on ridge-top and in open areas.

Burning bush (*Euonymus alatus*) Prevalent

Moderate population in Southern Dry Mesic Forest near Homestead. Few individuals along southern point above trails. 1-5 years in age.

Bush honeysuckle (*Lonicera sp.*) Scattered

Scattered individuals in Northern Dry-Mesic Forest. Concentrated in areas of open canopy caused by oak wilt and wind-throw. Few individuals in southern edge of Southern Dry-Mesic Forest and in Pine Relict near outcroppings.

*Note: American fly honeysuckle (*Diervilla lonicera*) also present in the area.

Butter and eggs (*Linaria vulgaris*) Isolated

Moderate populations near first and second beaches in Southeast portion.

Eastern red cedar (*Juniperus virginiana*) Isolated

Few individuals along the northern point of the Northern Dry Mesic Forest. Located in an old windthrow or artificial opening (native species).

Day lilies (*Hemerocallis fulva*) Isolated

Ornamental planting near Dupless Cemetery. Watch for escapes.

European mountain ash (*Sorbus aucuparia*) Isolated

Few individuals observed near shoreline outcroppings South of POI #03.

Oak wilt (*Ceratocystis fagacearum*) Prevalent

Established on the property in a few areas. Large pockets along eastern edge on top of the bluff and in Southern Dry Mesic Forest.

Oriental bittersweet (*Celastrus loeseneri*) Scattered

Few individuals in Southern Dry Mesic Forest in northeast portion of property, along trail and near rock outcropping.

White mulberry (*Morus alba*) Isolated

Few individuals along trail and along shoreline near beach in southern portion of areas. Individuals ranging from 1-10 years old.

Points of Interest

<u>ID</u>	<u>Unit</u>	<u>Invasives present</u>	<u>Notes</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Date</u>
1	NDM	Black locust, daylillies	Dupless Cemetery	43.6903840396553	-89.8228649888188	05/30/18
3	NDM	Black locust, honeysuckle	Larger trees on cliff	43.6940770223737	-89.8251369874924	08/14/18
20	NDM	Honeysuckle	Few individuals	43.6928090080619	-89.8253201320767	05/30/18
21	NDM	Eastern red cedar, Honeysuckle	Few individuals	43.6935131717473	-89.8255893588066	05/30/18
22	NDM	Honeysuckle	scattered	43.6935953143984	-89.8250545933843	05/30/18
40	NDM	Honeysuckle	scattered individuals	43.691390035674	-89.8231700062752	05/30/18
41	NDM	Oakwilt	Patch of dead Q. rubra, v	43.6918559856713	-89.8236859962344	05/30/18
42	NDM	Pink lady slipper (native/rare)	two individuals near ridge	43.6918940395117	-89.8249000310898	05/30/18
26	PR	Winged Euonymus	individual	43.691815584898	-89.8256896901876	05/30/18
27	PR	Bullthistle	individual	43.6908571980894	-89.8243693728	05/30/18
28	PR	Winged Euonymus	scattered along trail	43.6904734745622	-89.8244676925242	05/30/18
19	SDM	Winged Euonymus	Fruiting tree(s)	43.691376959905	-89.8254138417542	05/30/18
23	SDM	Oriental bittersweet	Population	43.6939922813326	-89.8273776378483	05/30/18

Threats

High – Burning bush, Bush honeysuckle, Oriental bittersweet

Medium – Oak wilt, Dame’s rocket

Recommendations

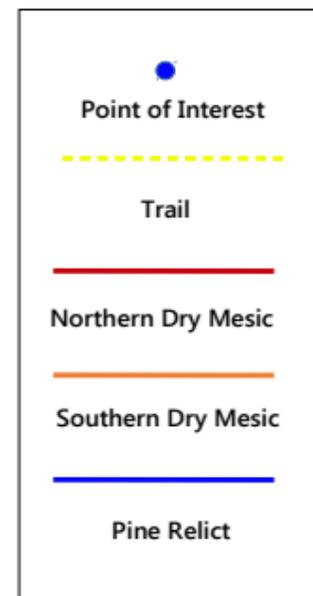
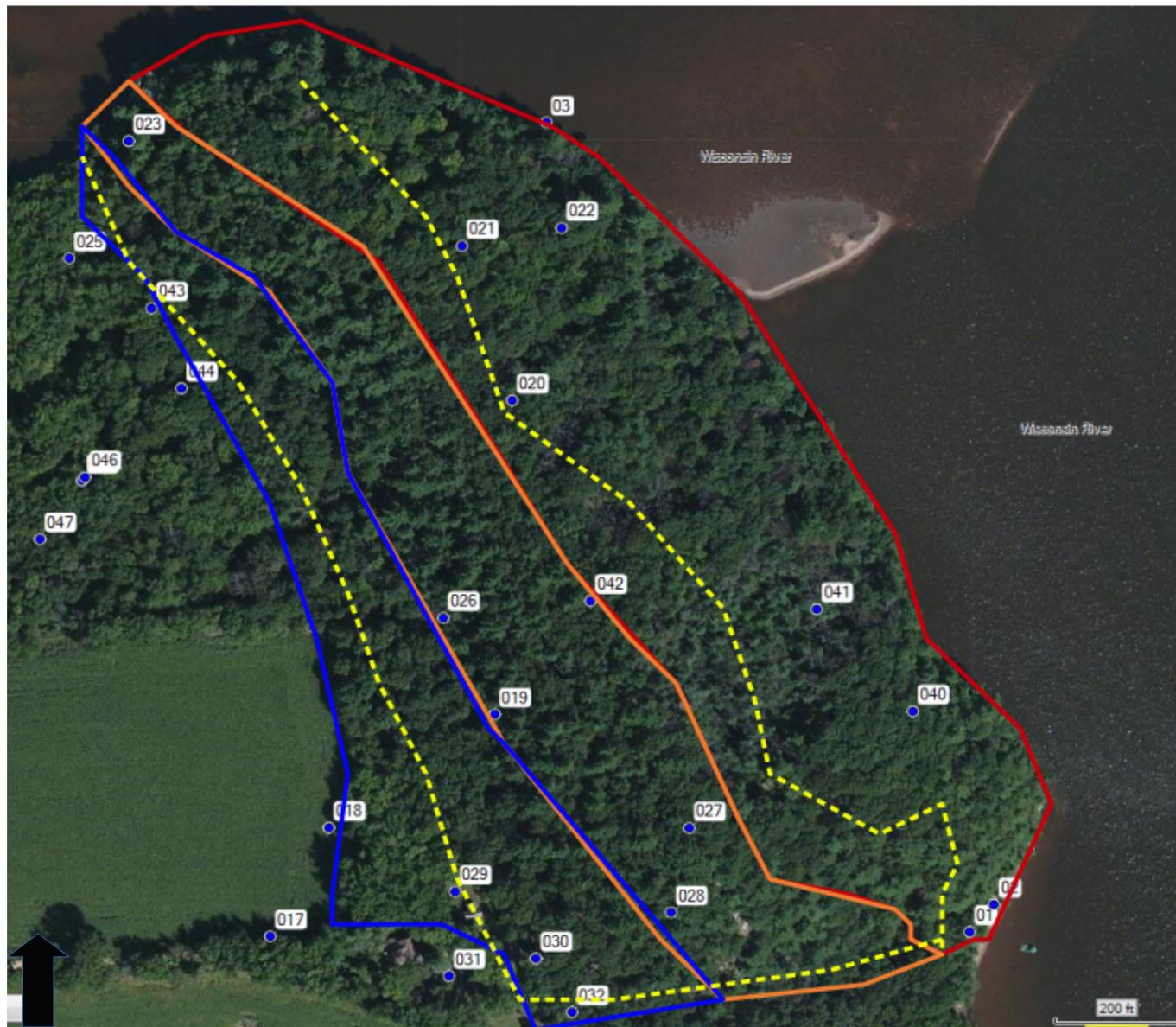
Control invasive shrubs by cutting the plant and treating the stump with an approved herbicide. Use herbicides recommended for cut-stump application to the target species.

Focus on controlling new populations of oriental bittersweet before it becomes established. Cut and treat or apply foliar herbicide to known populations within the next year if possible.

Watch for black locust and honeysuckle in newly opened areas of the canopy.

Monitor the entire area for garlic mustard and Dame’s rocket. Control individuals immediately as they will quickly invade these community types.

Louis Bluff
Invasive Species Inventory
2018



Assessment Area 4: Wisconsin River Islands (~28 acres)

Observed invasive species

Eurasian milfoil (*Myriophyllum spicatum*) **Scattered**

Found in WI River on lee side of islands in areas of low water (POI #012).

Forget-me-not (*Myosotis scorpioides*) **Prevalent**

Common along sandy beaches of WI River islands.

Purple loosestrife (*Lythrum salicaria*) **Isolated**

Individuals observed along southern shoreline (POI #13) and near “first beach” (POI #01). All plants were removed from the site.

Phragmites (*Phragmites australis*) **Dense**

Dense throughout many of the islands. Found along shoreline and interior sloughs. Also common on neighboring properties to North, South, and East.

Reed canary grass (*Phalaris arundinacea*) **Dense**

Prevalent throughout area. Dense in areas of full sun along shorelines and recently flooded islands with stands of willow and floodplain forest.

Points of Interest

<u>ID</u>	<u>Unit</u>	<u>Invasives present</u>	<u>Notes</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Date</u>
6	WRI	Phragmites	Dense phragmites	43.6953276861459	-89.83071506	08/14/18
12	WRI	Eurasian water milfoil	Aquatic species (blue number)	43.6949729640037	-89.82596403	08/14/18
13	WRI	Purple loosestrife	Single plant	43.6955700069666	-89.82664598	08/14/18
14	WRI	Forget me not	Common along sandbar	43.6960330232978	-89.82617601	08/14/18

Threats

High – Reed canary grass, Phragmites

Medium – Purple loosestrife

Recommendations

Controlling reed canary grass and phragmites in these areas would be very difficult. Consider ways to mitigate invasions of other areas on the property before committing to controlling invasives in these areas.

Monitor for additional purple loosestrife and control by cutting and treating the plant in later summer. Use an aquatic based herbicide, such as Imazapyr.

Louis Bluff
Invasive Species Inventory
2018



Noteworthy Observations

Mature osprey and bald eagles were sighted on both site visits and exhibited behaviors consistent with a nearby nesting grounds. They are potentially nesting in the large trees atop the bluff, but no nests were sighted. However, the osprey displayed particularly defensive behavior when we neared “first beach” along the eastern shoreline.

Narrow leaf bittersweet is an invasive species only known in a few areas of the state. An official observation was recorded with the WDNR and IPAW (Invasive Plant Association of Wisconsin). Controlling this species is difficult, but recommended. Potential funding is available, please contact Kelly.Kearns@wisconsin.gov for more information.

A green heron, great blue heron, and great white egret were observed fishing along the shorelines in various locations near the Wisconsin River islands.

Three pink lady slipper orchids (*Cypripedium acaule*) were observed under the pine trees along the trail on the ridge line in the Pine Relict. There is suitable habitat for rare plants on the dry and moist cliff communities found throughout the property.

No large waterborne trash was observed on the property, however our survey took place before the late-summer flooding events.

Summary

Louis’ Bluff is an excellent example of the diverse ecological features found in Wisconsin. The dramatic topography and proximity to the Wisconsin River create the unique conditions necessary for many different natural community types to persist. The natural communities on the property range from dry cliffs on 400 million year old sandstone, to sandbar islands that change by the second.

Invasive species infestations on the property are relatively low and could be generally controlled. Plants in the wetland and island portions of the property will be difficult to control due to the frequent flooding and constant seed source provided by the river. Focus should be placed on newly detected and upland invasive species.

This property is a good candidate for old forest habitat. Oak wilt is present on the property and will likely lead to a loss of large red oaks. Where appropriate, take action to slow the spread of this disease and manage for regeneration of other native tree species, like white oak, white pine, basswood, and birch. Timber harvesting is not recommended and likely not feasible due to wet terrain and other management objectives.

Overall, the natural communities on the property are relatively healthy and intact. However, they are facing modern threats like fragmentation, invasive species, climate change, and others. Louis’ Bluff is a unique location in the state and worthy of long-term conservation.

All Points of Interest

ID	Unit	Invasives present	Notes	Latitude	Longitude	Date
1	NDM	Black locust, daylilies	Dupless Cemetery	43.6903840396553	-89.82286499	05/30/18
2	Beach	Bouncing bet, RCG, Butter & Eggs	First beach	43.6905085947365	-89.82273633	05/30/18
3	NDM	Black locust, honeysuckle	Larger trees on cliff	43.6940770223737	-89.82513699	08/14/18
4	SC	Phragmites	Present throughout slough	43.6937258206308	-89.82856913	08/14/18
5	SC	Phragmites, RCG	Dense phragmites	43.6940270662308	-89.83016353	08/14/18
6	WRI	Phragmites	Dense phragmites	43.6953276861459	-89.83071506	08/14/18
7	SC	Phragmites, RCG	Dense phragmites	43.6952181346715	-89.83226261	08/14/18
8	SC	RCG	scattered	43.6944788508117	-89.83262027	08/14/18
9	SC	Phragmites, RCG	Dense phragmites	43.6957389023155	-89.83318663	08/14/18
10	SC	RCG	Near property boundary	43.6959984898567	-89.83348939	08/14/18
12	WRI	Eurasian water milfoil	Aquatic species (blue number)	43.6949729640037	-89.82596403	08/14/18
13	WRI	Purple loosestrife	Single plant	43.6955700069666	-89.82664598	08/14/18
14	WRI	Forget me not	scattered along sandbar	43.6960330232978	-89.82617601	08/14/18
15	HM	Autumn Olive, Buckthorn	Fruiting tree(s)	43.6901448201388	-89.83236638	08/14/18
16	HM	Buckthorn	Fruiting tree(s)	43.6901311576366	-89.83026051	08/14/18
17	HM	Chickory, Burdock, Dame's Rocket	scattered	43.6903638392687	-89.82661715	05/30/18
18	AG	RCG	dense patch	43.690858958289	-89.82630299	05/30/18
19	SDM	Winged Euonymus	Fruiting tree(s)	43.691376959905	-89.82541384	05/30/18
20	NDM	Honeysuckle	Few individuals	43.6928090080619	-89.82532013	05/30/18
21	NDM	Eatern red cedar, Honeysuckle	Few individuals	43.6935131717473	-89.82558936	05/30/18
22	NDM	Honeysuckle	scattered	43.6935953143984	-89.82505459	05/30/18
23	SDM	Oriental bittersweet	Population	43.6939922813326	-89.82737764	05/30/18
24	SC	RCG	scattered	43.6929866205901	-89.82967889	05/30/18
25	SC	RCG	scattered	43.6934579350054	-89.82769665	05/30/18
26	PR	Winged Euonymus	individual	43.691815584898	-89.82568969	05/30/18
27	PR	Bullthistle	individual	43.6908571980894	-89.82436937	05/30/18
28	PR	Winged Euonymus	scattered along trail	43.6904734745622	-89.82446769	05/30/18
29	HM	Oriental Bittersweet, Winged Euonymus	scattered individuals	43.6905670166016	-89.82562599	05/30/18
30	HM	Creeping Charlie, Vinca minor, Woodruff	Homestead	43.6902630049735	-89.82519298	05/30/18
31	HM	Daylilies, Multiflora rose	Homestead	43.6901830416173	-89.82565901	05/30/18
32	HM	Daylilies, Burdock, Dame's rocket, Multiflora rose	Throughout homestead	43.6900180019438	-89.82499802	05/30/18
33	FPF1-S	RCG	scattered	43.6892965715379	-89.82433593	05/30/18
34	FPF2	RCG	scattered	43.688393002376	-89.82468688	05/30/18
35	FPF2	RCG	scattered	43.6892965715379	-89.8235337	05/30/18
36	FPF2	RCG	prevalent	43.6888461280614	-89.82305216	05/30/18
37	FPF2	RCG	scattered	43.6875989008695	-89.82288192	05/30/18
38	FPF2	Narrowleafed bittercress	EDRR	43.6877795308828	-89.82306414	05/30/18
39	FPF2	Narrowleafed bittercress	EDRR	43.688247743994	-89.82330487	05/30/18
40	NDM	Honeysuckle	scattered individuals	43.691390035674	-89.82317001	05/30/18
41	NDM	Oakwilt	Patch of dead Q. rubra	43.6918559856713	-89.823686	05/30/18
42	NDM	Pink lady slipper (native/rare)	two individuals near ridge trail	43.6918940395117	-89.82490003	05/30/18
43	FPF1-N	Moonseed (native)	Very dense patch	43.6932290252298	-89.82725602	05/30/18
44	FPF1-N	RCG	Yam	43.6928637418896	-89.827095	05/30/18
45	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6924429703504	-89.827627	05/30/18
46	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6924579739571	-89.827612	05/30/18
47	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6921760067344	-89.82785398	05/30/18
48	FPF1-N	RCG	Population	43.6920950375497	-89.82833602	05/30/18
49	FPF1-N	Buckthorn, Honeysuckle	Fruiting tree(s)	43.6919549759477	-89.82885201	05/30/18
50	FPF1-N	Buckthorn, Honeysuckle	Fruiting tree(s)	43.6919549759477	-89.82885302	05/30/18
51	FPF1-N	Buckthorn, Honeysuckle	Fruiting tree(s)	43.6919009964913	-89.82907397	05/30/18
52	FPF1-N	Buckthorn	Fruiting tree(s)	43.6918979790062	-89.82930497	05/30/18
53	FPF1-N	Buckthorn	Fruiting tree(s)	43.6919579934329	-89.82953103	05/30/18
54	FPF1-N	Buckthorn, Honeysuckle	Fruiting tree(s)	43.6919200234115	-89.82983597	05/30/18
55	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6921104602516	-89.83039747	05/30/18
56	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6922747455537	-89.83146708	05/30/18
57	FPF1-N	Honeysuckle	Fruiting tree(s)	43.6926306411624	-89.83185148	05/30/18
58	PP	Autumn Olive, Spotted Knapweed	ROW edge	43.6917890142649	-89.83278003	05/30/18
59	PP	White poplar, Spotted Knapweed	Dense	43.6906670127064	-89.83275999	05/30/18
60	AG	Autumn Olive, Buckthorn, Wild Parsnip	Field edge	43.6893727630377	-89.83174469	05/30/18

Unit Codes	AG	Agricultural area	PP	Pine plantation
	FPF1-N	Floodplain Forest 1 (north)	PR	Pine relic
	FPF1-S	Floodplain Forest 1 (south)	SC	Shrub Carr (Shrub wetland)
	FPF2	Flood plain Forest 2	SDM	Southern Dry Mesic Forest
	HM	Homestead	WRI	Wisconsin River Islands
	NDM	Northern Dry Mesic Forest		

Louis Bluff
Invasive Species Inventory
2018

● Point of Interest

--- Trail

- - - Property Boundary

