

## Crossroads at Big Creek Dwarf Lake Iris Transplantation Project

draft report

9/9/2020

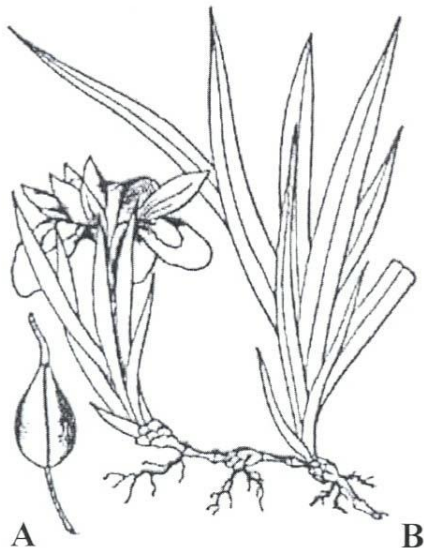
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### Summary:

Dwarf Lake Iris (*Iris lacustris*) is a federally threatened species that is known to occur in only 167 locations in suitable habitats near the northern shores of the Lake Michigan-Lake Huron system (1). A construction project on private property along Sand Bay Road (Section 6 Town 27N Range 25E) in the town of Nasewaupée, Door County, Wisconsin presented an opportunity to transplant a portion of a population of Dwarf Lake Iris (DLI).

Plants on private property are not protected in Wisconsin. However, with the aid of the WDNR the landowner agreed to permit transplantation of the portion of the DLI population located within a proposed driveway.

The WDNR attempted to find the most appropriate transplant setting. Several local conservation partners, some already stewarding populations of DLI on their lands, were contacted to host the transplanted specimens. Although Crossroads at Big Creek has no known populations of DLI, it was the only entity having suitable habitat that was also able to facilitate the removal and transplanting in the time frame allotted.



Dwarf lake iris (*Iris lacustris*) A – Seedling, B – Adult Figure Credit: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. Vol. 1: 540.

photograph by Joel Trick

## Existent Population Setting:

A population of approximately 550 ramets were removed on September 4, 2020 under the supervision of the WDNR. No evidence of flowering was seen in this population or the adjacent population. The population was growing nearly as a monoculture in some small patches approximately 1 foot across, and also in a matrix with other plant species.

The total population remaining after removal was estimated at more than 5000 ramets which straddles the adjoining property.

The population was located approximately 300 feet from the shore of Green Bay.

Light: Tree canopy cover was approximately 50 – 60 %. This could explain the absence of flowering in this population.

Hydrology: Areas immediately adjacent to the DLI population seemed to have briefly held standing water at some time this year. Although wetlands were found within 200 feet, no obvious springs we found nearby or noted on hydrological maps. Plants associated with this population range widely in wetland affinity from FACW to FACU.

Soil was Angelica Silt Loam (Ax); 0 to 8 inches 7.5 YR 2.5/1, 8 inches to 21 inches 7.5YR 5/4 silt loam, with bedrock found at 21”.

Plant community immediately affiliated with this DLI population included the list below. The species most tightly coupled with the DLI population matrix were *Carex eburnea* (Ivory Sedge), *Carex blanda* (Wood Sedge) and *Thuidium sp.* possibly *delicatum* (Delicate Fern Moss?).

Species found with DLI at this site	Wetland indicator	Common name	WI C value
<i>Abies balsamea (L.) Mill.</i>	FACW	Balsam Fir	5
<i>Aralia nudicaulis L.</i>	FACU	Wild Sarsaparilla	6
<i>Carex blanda Dewey</i>	FAC	Wood Sedge	3
<i>Carex eburnea Boott</i>	FACU-	Ivory Sedge	8
<i>Comandra umbellata</i>	FACU	Bastard-Toadflax	6
<i>Cypripedium parviflorum</i>		Yellow Lady-slipper	9
<i>Equisetum arvense</i>	FAC	Common Horsetail	1
<i>Fragaria virginiana</i>	FAC-	Wild Strawberry	1
<i>Linnaea borealis</i>	FAC	Twin Flower	9
<i>Populus tremuloides</i>	FAC	Quaking Aspen	2
<i>Symphotrichum lateriflorum</i>	FACW-	Calico Aster	3
<i>Thuidium (sp)</i>		Delicate Fern Moss?	
<i>Thuja occidentalis L.</i>	FACW	White Cedar	9
<i>Viola pubescens</i>	FACU-	Yellow Violet	5

## Transplantation Methods

Removal was done using two variations depending on the setting. The DLI spread by use of slender near-surface rhizomes.

Sod method: In areas where DLI was relatively dense (more than about 40 % coverage) and there were no trees the removal was done by creating a DLI “sod” that was approximately 4” to 6” thick. The blocks of DLI were removed by undercutting the soil with shovels until a patch of 12” or more was removable. This was the preferred method as the plants were more intact, less disturbed and could be transplanted with a complement of original soil and associated plants.



Nick Lutzke showing a removal of DLI using sod technique

Plug method: In areas where DLI was not dense or was interrupted with trees or shrubs the plugs were punched out in groups of 1 to 5 plants. In some cases the soil would fall away leaving the plant and rhizome dangling. This method was not preferred.

### Crossroads criteria for relocation site selection:

- Ax loam (requirement),
- Proximity to DLI associated plants, especially white cedar (requirement),
- Minimum likely competition stress (requirement),
- Light 20 – 80 % forest canopy coverage (requirement, with bias toward 30% - 40 % forest canopy coverage),
- Appropriate soil moisture (highly desired),
- Proximity to Green Bay within 600 feet for cool moist air (desired),
- Setting on land, locally flat and below Lake Nipissing (desired)

## Relocation Sites at the Crossroads

- 1a Ida Bay, Cedar canopy, below Lake Nipissing ledge, lower group, Coggin's sites
- 1b Ida Bay, Cedar canopy below Lake Nipissing ledge, upper group
- 2 Ida Bay, Cedar canopy above Lake Nipissing ledge
- 3 Cove, Cedar row, Dan's site
- 4 Tributary east bank, Nick's site
- 5 Sedge meadow north, Nancy's site



Installation of a DLI sod at location 5, Nancy's site

## References:

(1) **Dwarf Lake Iris (*Iris lacustris*) Recovery Plan**, U.S. Department of the Interior, Fish and Wildlife Service Midwest Region, 2013

[https://ecos.fws.gov/docs/recovery\\_plan/DLI%20RP%20FINAL%20AUG2013\\_1.pdf](https://ecos.fws.gov/docs/recovery_plan/DLI%20RP%20FINAL%20AUG2013_1.pdf)

(2) **Element Stewardship Abstract (ESA) for *Iris lacustris***, The Nature Conservancy, 1990

## Acknowledgements:

We would like to acknowledge and thank WDNR and Allison Willman of the WDNR for her guidance and facilitation of this project.

We acknowledge and thank the Crossroads at Big Creek staff Coggin Heeringa and Nick Lutzke, ecological restorationists Chrissy Bartelme and Jason Miller, and Landscapes of Place participants Nancy Aten and Dan Collins.



Character of the existing site along with characters at the existing population site.

**Addendum: Windfall** It is curious that the existing DLI site is the location of a windfall as noted in the 1830 GLO survey. Might windfall create sunny habitat that permits expansion of a DLI colony?



South Boundary 46		47	
Township No. 28 North.		Range No. 25 E, 4th Meridian M.T.	
West	On South Side Section 32	West	On South Side Section 31
35.00	Save Windfall	11.30	Cedar 12 in Diameter
40.00	Set quarter Section post	31.03	Do 10 in Diameter
<del>40.00</del>	Se. Cedar 12 N 28 E. 23	35.00	Enter Windfall C S E
	Sugar 10 N 37 W. 17	40.00	Set quarter Section post
43.00	Cedar Swamp C. W. W.		Aspen 3 N 31 1/2 W. 36
44.50	Stream 15 C N. W.		Do 4 S 54 W .43
57.25	Cedar 12 in Diameter	60.73	Elm 14 in Diameter
72.50	Do 16 in Diameter	66.00	Save Swamp C North
80.00	Set post corner Sections 31 & 32	68.18	Interventd Margin of Green Bay and set post
	Cedar 16 N 27 E 18		Yellow Pine 16 S 22 E. 09
	Hemlock 12 N 35 W. 42		Do 10 N 56 E. 34
	Land Polling and Stone		Save & Save
	3 <sup>rd</sup> Rate Except Swamp		
	Hemlock Beech Sugar		
	Cedar & C		
			May 30 <sup>th</sup> 1830