

Floristic Survey of Fens at
Proposed Fox Valley Subdivision
Johnson County, Iowa

Report Submitted to:
Iowa Department of Natural Resources
Des Moines, Iowa

By

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Introduction

This report presents the findings of a floristic survey that was conducted on two fens and adjacent land in rural Coralville, Iowa. The proximate purpose of the survey was to find eastern prairie fringed orchid *Platanthera leucophaea* and western prairie fringed orchid *P. praeclara*. The ultimate purpose of the survey is to satisfy regulatory requirements thus allowing Fox Valley, Inc. to develop a subdivision referred to as Fox Valley.

The survey was requested by the US Fish and Wildlife Service (FWS) and the Iowa Department of Natural Resources (DNR) as a precautionary measure. FWS and the DNR had concern that the proposed subdivision would destroy individuals of the species *P. leucophaea* and *P. praeclara*. The state of Iowa lists *P. leucophaea* as endangered, while the federal government lists it as threatened. *P. praeclara*, on the other hand, is listed as threatened by both levels of government. FWS and the DNR were prompted to request the survey as the result of an application for a Section 404 permit that Fox Valley, Inc. submitted to the Rock Island District of the Army Corps of Engineers (ACOE). The ACOE project number for the Fox Valley Subdivision is CEMVR-OD-P-2006-1501.

This report consists of a narrative with the following sections 1)Description of the Study Area, 2)Methodology, 3)Findings, and 4)Recommendations. The report also includes photos, an aerial-photo map of the areas surveyed (Figure 1), and a vicinity map (Figure 2). If you are reading an electronic version of this report you can use the zoom feature in Microsoft Word to look at the photos in detail.

Description of Study Area

The study area consists of two fens and two severely degraded, prairie remnants adjacent to the fens (Figure 1). The fens and prairie remnants are located on a 400± acre parcel located near the boundary between Coralville and North Liberty. The north fen covers approximately 1.55 acres, while the south fen covers 0.42 acres. The north and south prairie remnants cover 0.51- and 0.25-acres respectively.

The fens are separated by 200-feet of pasture. The terrain surrounding the fens is mostly moderately rolling. A ravine originates near the center of the north fen and heads west 600-feet to an unnamed, intermittent creek. The ravine is approximately 5-feet deep at the point that it exits the fen. During the current growing season through July 14, 2007, cattle had grazed the fens only lightly. In 2006 their grazing was at a moderate level

through most of the year. In contrast, the cattle have been grazing the pasture around the fens more heavily, presumably because its Eurasian vegetation is more palatable.

The geology of the area is somewhat unusual. Even though the entire 400-acre project site is in the Southern Iowa Drift Plain, it contains 3 natural potholes. Two of the potholes are upslope from the fens and may help keep the fens' moisture supply constant. The pothole that may be feeding the north fen is 930-feet horizontally from the fen's east end. The pothole that putatively feeds the south fen is 705-feet horizontally from its east end. In 2006 the Investigator used a soil probe to analyze the soils in the north fen. The analysis indicates that the fen is the result of subterranean water following a layer of very sandy soil to a point where the layer becomes exposed at the surface.

The fens are located between N41° 42' 57.41" and N41° 43' 03.82" and between W91° 37' 07.87" and W91° 37' 21.46". They lie almost entirely within the SE¼ of the SE ¼ of Section 23, T80 N, R7 W, of Clear Creek Township. With regards to roads, they are 0.4 miles south of Forevergreen Road and 0.6 miles west of Hwy. 965.

Methodology

Site visits were made on June 29- and July 14-, 2007 by botanist Tre Wilson (Investigator). During the June 29 survey, the Investigator walked belt-transects that were oriented north and south across the study area. Where the vegetation was tall, the Investigator spaced the center-lines of the transects 3 meters apart, and where it was short he spaced them up to 4 meters apart. During the July 14 survey, the Investigator shuttled along transects oriented east and west. Because the general height of the vegetation on July 14 was taller than on June 29, the Investigator spaced the transects more densely. Where the vegetation was tall, the Investigator spaced the center-lines of the transects 2 meters apart, and where it was short he spaced them up to 3 meters apart.

The widths of the transects gave the investigator consistently good visibility to see the inflorescences of any orchids that might lie within a belt-transect. However, the widths did not provide adequate slant-angle vision for detecting all non-flowering orchids. At the time of the surveys, the Fens' vegetation generally ranged between 0.5- and 1-meter tall. The vegetation's height in conjunction with its density was such that non-flowering orchids would have been readily visible only within 0.5 meters of the center-lines. In all cases the belt transects were spaced so as to cover 100% of the study area. In addition to looking for orchids, the Investigator looked for flowering and non-flowering examples of all state- and federally-listed plant species during the survey.

The Investigator took several photos and plant pressings during the surveys. He also took notes on selected species.

Findings

The Investigator did not observe any prairie fringed orchids nor any other listed plant species on the fens or adjacent prairie remnants. The following are 30 species which provide a sampling of the vascular plants observed in the study area.

GENUS	SPECIES	COMMON NAME	Notes
Pteridium	aquilinum	bracken fern	rare
Carex	scoparia	sedge	
Carex	vulpinoidea	sedge	
Juncus	tenuis	path rush	
Scirpus	atrovirens	dark green bulrush	
GENUS	SPECIES	COMMON NAME	Notes
Agastache	nepetoides	yellow giant-hyssop	
Asclepias	incarnata	swamp milkweed	
Asclepias	viridiflora	green milkweed	Rare
	N 41° 43.026'	W91° 37.250'	
Aster	novae-angliae	New England aster	
Boehmeria	cylindrica	false nettle	
Campanula	aparinoidea	marsh bellflower	rare
Daucus	carota	Wild carrot	
Erigeron	strigosus	daisy fleabane	
Eupatorium	perfoliatum	boneset	
Helenium	autumnalis	sneezeweed	
Hypericum	prolificum	shrubby St. John's-wort	
Hypericum	punctata	spotted St. John's-wort	
Hypericum	sphaerocarpum	round fruit St. John's-wort	
Impatiens	pallida	pale jewel weed	
Lysimachia	quadriflora	prairie loosestrife	
Lythrum	alatum	winged loosestrife	
Mimulus	ringens	monkey flower	
Monarda	fistulosa	wild bergamot	
Pycnanthemum	virginianum	Virginia mountain mint	
Rudbeckia	Hirta	black-eyed susan	
Solidago	gigantea	late goldenrod	
Teucrium	canadense	germander	
Verbana	urticifolia	white vervain	
Vernonia	altissima	tall ironweed	
Andropogon	Gerardii	big bluestem	
Dichanthelium	clandestinum	deertongue grass	rare
Spartina	pectinata	cordgrass	
Spiraea	alba	meadowsweet	

The Investigator estimates that over 100 plant species grow in the 2.73-acre study area. The most notable invertebrate was a great spangled fritillary *Speyeria cybele* observed on June 29. On August 30-, and 31-, 2006 the Investigator delineated the wetlands in the study area. Also at that time no protected species were observed.

Recommendations

Because of the high quality of the fens, they should be managed and preserved. In lieu of a detailed hydrologic study, the developer should preserve the two potholes that are assumed to provide sustained moisture to the fens. In addition, the Investigator recommends that light grazing and periodic controlled burns be used as management tools to prevent trees from invading the fens and adjacent prairie areas.

If the fens are preserved and managed, the developer, Fox Valley, will probably be able to use the fens as credit to reduce the number of acres of compensatory wetland it will need to create for its 404 permit.

Photos

See accompanying pdf file.

Photo 1. View looking east. The pothole presumed to feed the north fen, 9-2-6.

See accompanying pdf file.

Photo 2. Looking east-southeast. The pothole presumed to feed the south fen, 9-2-6.
Photos (Continued)

See accompanying pdf file.

Photo 3. View of north fen looking westerly, 7-14-7.

See accompanying pdf file.

Photo 4. View of south fen looking westerly, 7-14-7.