

March 3, 2014

PUC Docket Number (13-474)

RECEIVED

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MAILROOM

Larry Hartman, Environmental Review Manager
Energy Environmental Review and Analysis (EERA)
Minnesota Department of Commerce
85 7th Place East, Suite 500
St.Paul, MN 55101

Dear Mr. Hartman,

As of February 25, 2014, we were made aware of the proposed routing for the Sandpiper Pipeline Project through our property on Big La Salle Lake , located in Clearwater County, State of Minnesota. The correspondence packet included the two enclosed pictorials of the property (Exhibit "A", Page2).

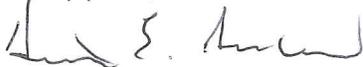
We are in opposition to this proposed routing. My family have been the land stewards of this property for fifty-three years. The terrain does not allow for expansion of current Minnesota Pipeline easement to the east (toward lake). The subsequent clear cutting of pine forest, compaction of soil, and tree root disruption of trees outside the permanent and temporary easement area, will allow for increased water drainage and damage from heavy rains and snow melt runoff. We are enclosing photos which indicate the damage to road access from heavy rains in 2002.

We are in opposition to granting temporary easement for Construction Work Space on our property. We suggest there is sufficient open space to the west of current Minnesota Pipeline easement.

We are including a report entitled "An Evaluation Of The Ecological Significance of the La Salle Creek And Chain Of Lakes" prepared by Erika Rowe, Minnesota DNR. Perhaps, this report provided the impetus for the purchase of Lake La Salle and surrounding acreage for current and future generations enjoyment.

In today's extensive environmental knowledge arena, we are somewhat taken aback that the industry would pursue a routing that puts a new crude oil pipeline within five hundred feet of a nearly pristine lake in Northern Minnesota, whose outlet flows into the Mississippi River a few miles away.

Sincerely yours,



David E. Sucher, Trustee
Avis M. Sucher, Trustee

24857 Old Church Rd.
Red Wing, MN. 55066
651-388-4979

EXHIBIT "A", Page 2

David E. Sucher and Avis M. Sucher Living Trust, dated April 19, 2011



124.3350 Feet = 7.5355 Rods
 Permanent Easement = 0.1423 Acres
 Temporary Easement = 0.4229 Acres
 Additional Temporary Easement = 0.1424 Acres

North Dakota Pipeline Company LLC



1 in = 150 ft



Legend	Property Boundaries
Proposed Pipeline	Proposed Easement
TWS	Adjacent Property Boundaries
ATWS	

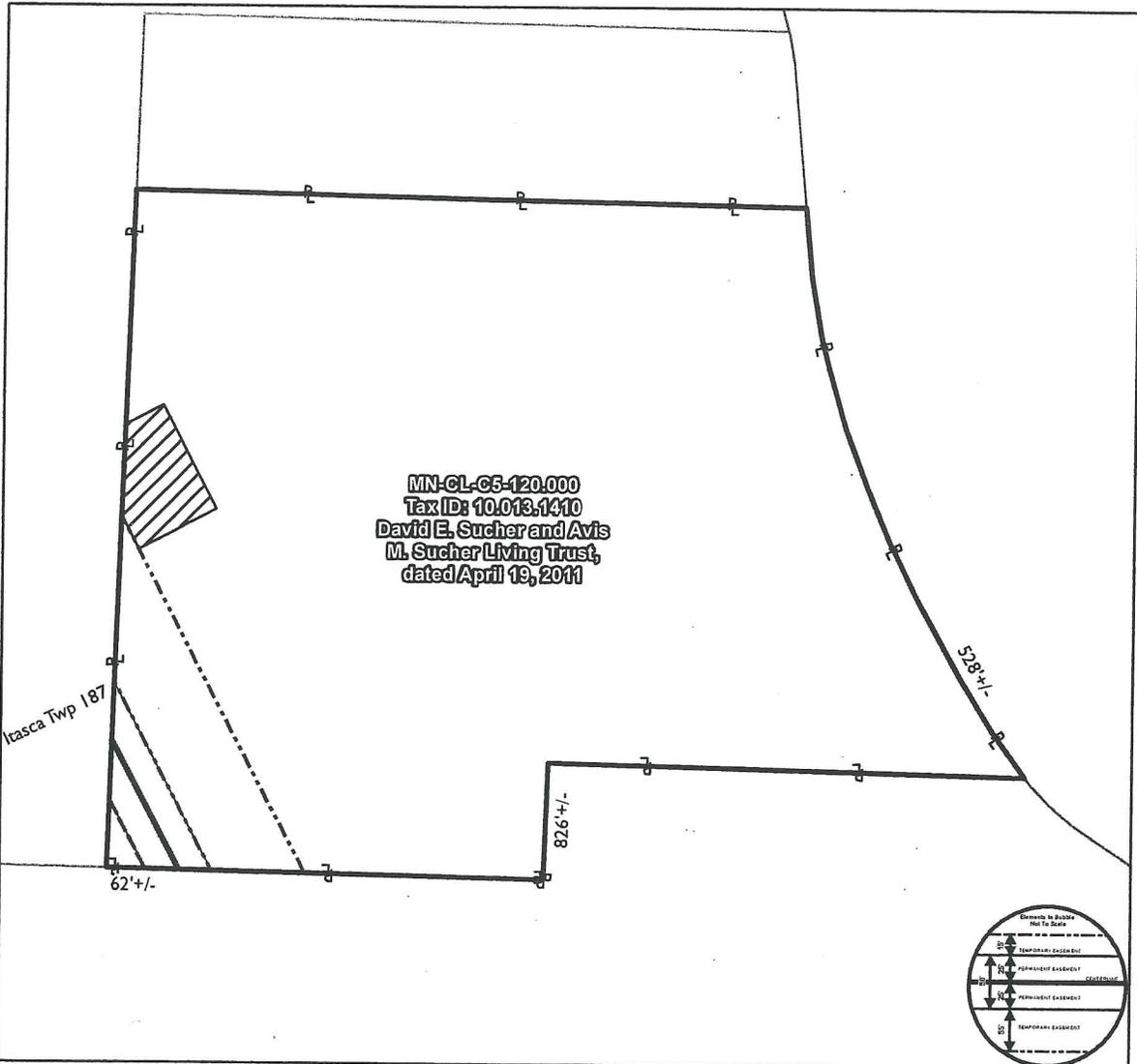
This is not a survey product. This should not be used for authoritative definition of legal boundary, or property title.

Proposed Pipeline Easement Across:
 David E. Sucher and Avis M. Sucher Living Trust, dated April 19, 2011

Tract No.: MN-CL-C5-120.000

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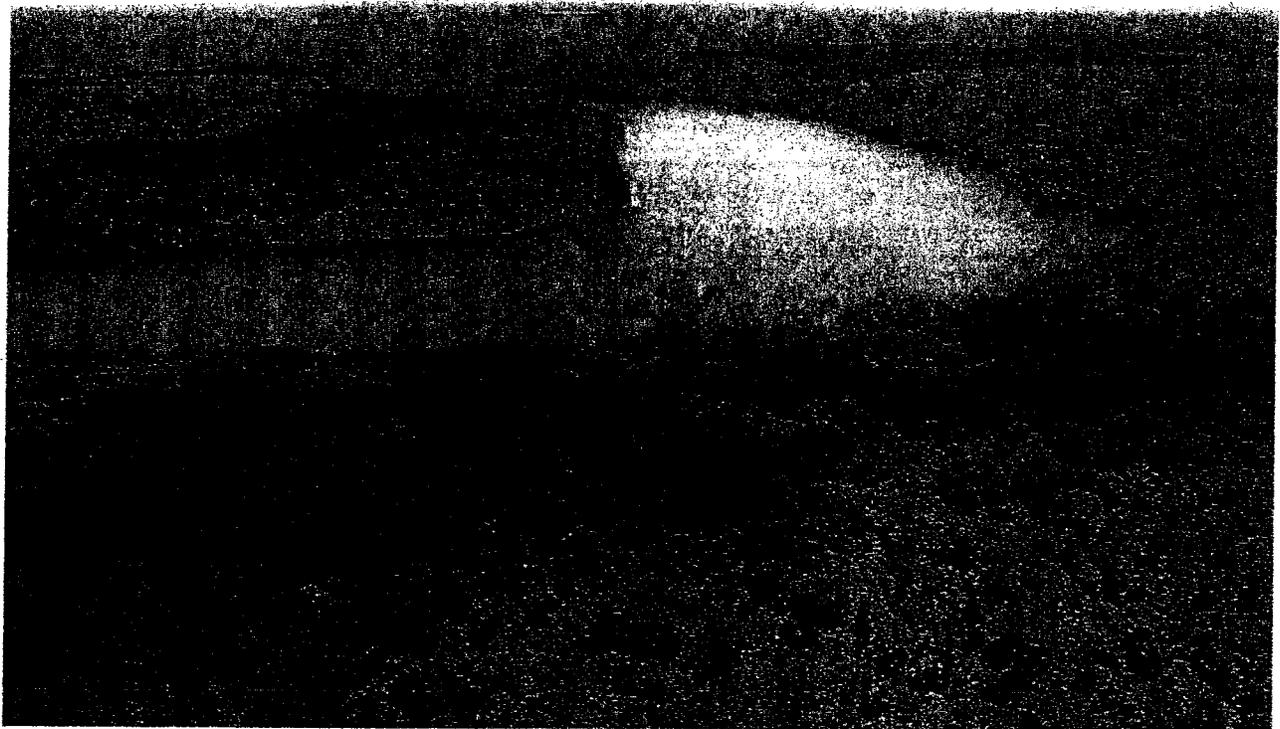
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An Evaluation of the Ecological Significance of the
La Salle Creek and Chain of Lakes

Hubbard County, Minnesota



La Salle Lake, aerial view to southeast. Photo by: Jay Echtenkamp

Prepared by: Erika Rowe
Minnesota County Biological Survey
Division of Ecological Resources
Department of Natural Resources
Box 25, 500 Lafayette Rd.
St. Paul, Minnesota 55155-4025

January, 2010



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SITE INFORMATION

DATE: January 1, 2010

AUTHOR: Erika Rowe

AFFILIATION: Minnesota County Biological Survey

COUNTY: Hubbard (with a small portion in Clearwater County)

MINNESOTA COUNTY BIOLOGICAL SITE NAMES AND NUMBERS:

La Salle Lake (# 90)
La Salle Creek (# 92)
Mississippi River (# 85)

ECOLOGICAL CLASSIFICATION SYSTEM REGION:

Province: Laurentian Mixed Forest Province
Section: N. Minnesota Drift & Lake Plains
Subsection: Chippewa Plains
Land Type Association: Becida Till Plain

USGS 7.5 MINUTE QUAD MAP (DNR QUAD CODE): I09C (La Salle Lake), J09B (Lake Itasca)

LEGAL DESCRIPTION: T145N R35W SECTIONS 19, 30, 31, 32
T144N R35W SECTIONS 6, 7, 19, 30, 31
T144N R36W SECTION 24

APPROXIMATE ACREAGE: 3,255 acres

OWNERSHIP: County tax-forfeit, state, and private

STATEWIDE BIODIVERSITY SIGNIFICANCE RANK: Outstanding (site 90), High (sites 85, 92)

ACTION: The Commissioner's Advisory Committee approved the La Salle Creek and Chain of Lakes Ecological Evaluation Area on December 1, 2009 as a potential Scientific and Natural Area (SNA).

ECOLOGICAL SIGNIFICANCE

Overview

Located just north of the Mississippi Headwaters, the La Salle Creek and Chain of Lakes Area (LSC-CLA) is truly a unique resource in north-central Minnesota. This 3,200 acre landscape was identified by the Minnesota County Biological Survey (MCBS) as an area of Outstanding and High Biodiversity Significance (figure 7), but it has been well-known by other regional DNR Divisions as an exceptional place for many years, particularly the area surrounding the pristine La Salle Lake. (See Table 1 for MCBS Site significance ranking descriptions.) La Salle Lake is a large (224 acres), mostly undeveloped lake that is one of the deepest in Minnesota and a highlight of this extraordinary landscape. The lake is surrounded by steep slopes and hundreds of acres of mixed coniferous-deciduous forest. Currently, an opportunity has arisen to provide continued protection for La Salle Lake and the surrounding forests. Owners of this property have initiated this chance offer and every effort should be made to acquire and protect this contiguous landscape so that others may enjoy it as it is today, wild and unfragmented.

Another feature that makes the LSCCLA so notable is the narrow, steeply sloping valley that cuts through a rugged landscape south of La Salle Lake. The topography that typifies the La Salle Creek valley is due to the formation of a glacial tunnel valley that originated in the Quaternary Period (Hobbs and Goebel, 1982). The extremely clear-running La Salle Creek, originating in Itasca State Park, meanders north along the narrow valley floor through wet meadows and shrub swamps. Many seeps and springs emanate at the base of steep slopes throughout the valley and along the lakeshores, forming rivulets that flow through lowland forests and tamarack swamps. The narrow valley widens occasionally to encompass four lakes of varying sizes along the creek's route. The creek eventually joins the Mississippi River near the popular Coffee Pot canoe boat landing in Hubbard County (figure 4).

Seventeen different native plant communities have been identified in the LSCCLA, mostly characterized by dry-mesic hardwood forests on the flatter terrain above the valley and red pine and jack pine dominated forests and woodlands on steeply rugged to moderate slopes, especially west-facing slopes, along the valley (figures 5 and 6). Rich hardwood-dominated forests with occasional white pines and balsam fir dominate drainage valleys and north- and east-facing slopes. Lowland forests and swamp communities occur intermittently along the creek and lakeshores. One of the best examples is an old-growth northern white cedar swamp north of La Salle Lake with springs and seeps that emerge from terraced slopes being one of the highlights. Three rare plants are documented from the LSCCLA: northern oak fern (*Gymnocarpium robertianum*), a proposed State Special Concern species, hair-like sedge (*Carex capillaris*), a State tracked species, and ram's-head lady slipper (*Cypripedium arietinum*), a State Threatened Species. A breeding pair of trumpeter swans (*Cygnus buccinator*), a State Threatened species, and two State Special Concern caddisfly species (*Oxyethira itascae* and *Oxyethira ecornuta*) have also been recorded.

In addition to the high-quality native plant communities and rare species listed above, gray wolf, fisher, river otter, bald eagle, osprey, common loon, and many species of woodland warblers are common throughout the area's abundant and diverse habitats. Many species of trees and shrubs and a diverse array of herbaceous plants, including 12 species of orchids, have also been recorded from the area.

The LSCCLA lies just north of Itasca State Park; however, the La Salle Creek valley is unlike anything within the Park's boundaries. Conservation protection should be expanded to include La Salle Creek and its associated lakes for future enjoyment as well as to provide a larger area of protection for native plants and animals and high-quality native plant communities. This spectacular corridor, with very little devel-

opment or recent disturbance, is a rare resource in a region that is subject to increasing pressure from development.

Table 1. MCBS Statewide Site Biodiversity Significance Ranking

Rank	Description
Outstanding	Sites containing the best occurrences of the rarest species, the most outstanding examples of the rarest native plant communities, and/or the largest, most intact functional landscapes present.
High	Sites containing very good quality occurrences of the rarest species, high-quality examples of rare native plant communities, and/or important functional landscapes.
Moderate	Sites containing occurrences of rare species and/or moderately disturbed native plant communities, and/or landscapes that have a strong potential for recovery.
Below	Below minimum threshold for statewide significance. Sites including areas of conservation value at the local level, such as habitat for native plants and animals, corridors for animal movements, buffers surrounding higher quality natural areas, or areas with high potential for restoration of native habitat.

Landscape Context and Geologic Features

Surficial Geology and Soils

The LSCCLA is on the Becida Till Plain Land Type Association (LTA), just north of the east-west running Itasca Moraine LTA that cuts across the midsection of Hubbard County. Both of these LTAs are within the Chippewa Plains Subsection, which is located at the very western edge of the Laurentian Mixed Forest Province (figure 1). Provinces, Sections, Subsections, and Land Type Associations are hierarchical units within the Ecological Classification System (ECS) that was developed for ecological mapping and landscape classification (MN DNR 2000).

Most of the soil materials and landscapes in Hubbard County are the result of the advance, retreat, and wasting of the Wadena Lobe during the Wisconsin glacial period (USDA-NRCS 1998). Hubbard County can be divided into four distinct areas of glacial deposits: the Guthrie Till Plain in the northern third, the east-west running Itasca Moraine across the center of the county, the Park Rapids Sand Plain in the south, and the Wadena Drumlin field in the very southeastern corner (Hobbs and Goebel 1982). The LSCCLA is present at the juncture of two of these distinct areas of glacial deposits: the Itasca moraine and the Guthrie till plain. The LSCCLA reflects soils and topography from both areas of glacial deposition; however, the physical location of the LSCCLA is mostly on the Guthrie till plain. The Itasca Moraine complex, formed approximately 20,000 years ago during the Late Wisconsin glaciation period, is characterized by steep, rugged hills typical of an end moraine (Wright 1972). Soils are dominated by calcareous sandy loam and loam with significant deposits of sand, gravel and stratified material (USDA-NRCS 1998). The Guthrie Till Plain is a ground moraine feature in the northern third of the county that was formed by active (advancing and/or retreating) ice. This landscape is nearly level to sloping, except along river channels, and is dominated by calcareous sandy loam and loam and an abundance of boulders, stones, and cobbles (USDA-NRCS 1998).

H. Hobbs and J. Goebel (1982) mapped the La Salle Creek drainage valleys as a tunnel valley that formed during the Quaternary Period. The steep and rugged valley slopes average between 20-40%. Topographic relief ranges from 1390-1580ft. Dramatic ridges and tributary valleys, or drainage valleys, are common along the slopes. A few of these drainage areas contain perennially flowing streams. More often though, these tributary valleys are active only during heavy rains and spring runoff as evidenced by the large amount of debris along their courses brought down by short-term, and potentially heavy flows of water. These drainage valleys often have medium to large boulders exposed, especially in the valley bottoms where deposition of boulders accumulated due to gravity as the valley eroded (H. Arends, pers. comm.).

Upland soils in the LSCCLA are predominantly well-drained sandy loams that are very stony. Moderately well-drained loamy fine sands are present to a lesser extent. Many of the wet to wet-mesic forested communities, such as White Pine – White Spruce – Paper Birch Forest [MHn44b] and occasionally areas of Black Ash – (Red Maple) Seepage Swamp [WFs57a] (see native plant community descriptions below), are in areas with loamy, fine sands with a perched water table and groundwater seepage. The La Salle Creek bed is made up of mucky, very poorly drained soils that consist of organic materials over outwash materials. Only a small segment of the LSCCLA has very poorly drained soils that are derived from woody or herbaceous materials (i.e., peat).

Hydrologic Features

La Salle Creek originates within Itasca State Park near the east arm of Lake Itasca and flows north to eventually join with the Mississippi River. The confluence of these two waterways is just north of Hubbard County State Aid Highway (CSAH) 9 and east of the Clearwater-Hubbard county line. The creek traverses approximately 11 miles and passes through four lakes that range between 20 and 224 acres in size before joining with the Mississippi River. Seeps and springs occur along the entire length of the LSCCLA corridor.

The LSCCLA is entirely within the La Salle Creek minor watershed division and the Mississippi River - Headwaters major watershed division.

Historic Vegetation

On the basis of the 1874-1879 Public Land Survey of the area, Francis Marschner mapped the presettlement vegetation primarily as mixed white pine-red pine forest with a lesser amount of aspen-birch forest (trending to conifers) and jack pine barrens and openings, with small pockets of conifer bogs and swamps (Marschner 1974). This representation closely fits with what is present today.

Native Plant Communities

Overview

Seventeen native plant communities have been documented in the LSCCLA—a relatively large number for this narrow valley. Because of the significant elevation change throughout the area and the myriad slope aspects, the vegetation of the area is remarkably complex, ranging from Black Ash – (Red Maple) Seepage Swamp [WFs57a] and Sedge Meadow [WMn82b] along the valley floor to dry Jack Pine – (Yarrow) Woodland [FDc23a] on the upper slopes. Native plant communities and locations of vegetation plots (relevés) [Appendix C] in the LSCCLA are shown in figures 5 and 6. For additional information on the native plant communities described below, refer to the *Field Guide to the Native Plant Communities of Minnesota: The Laurentian Mixed Forest* (MN DNR 2003).

Two of the native plant communities in the LSCCLA, Jack Pine – (Bush Honeysuckle) Woodland, *Bracken Subtype* [FDc24a1] and Jack Pine – (Yarrow) Woodland [FDc23a] (described below), have become increasingly rare in this part of the state due to increased logging, fire suppression, and insects and disease. Both have a State Conservation Status rank of Critically Imperiled (S1). MCBS and the MN DNR's Natural Heritage and Nongame Research Program evaluates all native plant community types (or subtypes) in Minnesota on a periodic basis and assigns ranks (called S-Ranks) with a value of S1 to S5 (MN DNR 2004). This method of ranking communities has been developed by the conservation organization NatureServe as a means to consistently evaluate the relative imperilment of ecological communities and provides an estimate of the risk of elimination of a particular community. See Appendix A for a summary of all native plant community status ranks in the LSCCLA.

Native Plant Community Descriptions

Fire-Dependent Forest/Woodland (FD) System

Fire-Dependent Forest/Woodland communities, as the name suggests, are strongly influenced by wildfires. Fires in these communities, from mild surface fires to catastrophic fires, periodically remove much of the litter, duff, and organic material, and can have a significant effect on nutrient cycling and availability. The random behavior of wildfires causes nutrient availability in these communities to be episodic and unpredictable. Many of the plants are adapted to survive repeated fires and regenerate successfully after fires. They occur on sites with coarse sandy or gravelly soils and are often drought prone.

FDn33a1. Red Pine – White Pine Woodland (*Balsam Fir Subtype*) (85 acres) is typically found on north- and east-facing slopes on the west side of La Salle Creek on sandy loam to loamy fine sand. Typically, this community has species indicative of richer, northern fire-dependent communities and often has a significant amount of balsam fir and occasionally red maple in the understory. The canopy cover is variable (50-75%) and dominated by red pine with occasional paper birch, white pine, quaking aspen, and jack pine. Due to the sometimes dense understory of balsam fir, the ground layer can be somewhat depauperate and thick with needle duff. Species useful in distinguishing FDn33a1 from FDn33a2 (below) include red pine in the subcanopy and twinflower (*Linnaea borealis*) and cow-wheat (*Melampyrum lineare*) in the groundlayer. Other species commonly present include wild sarsaparilla (*Aralia nudicaulis*), bunchberry (*Cornus canadensis*), bush honeysuckle (*Diervilla lonicera*), Canada mayflower (*Maianthemum canadense*), large-leaved aster (*Symphotrichum macrophyllum*), bracken (*Pteridium aquilinum*), lowbush blueberry (*Vaccinium angustifolium*), beaked hazelnut (*Corylus cornuta*), and mountain rice grass (*Oryzopsis asperifolia*). [Relevé 5321]

FDn33a2. Red Pine – White Pine Woodland (*Mountain Maple Subtype*) (16 acres) is mostly restricted to two small areas on the west side of La Salle Lake on northwest facing slopes adjacent to a major drainage valley to the lake. This small area of FDn33a2 likely extended further to the south given the similar topography, soils, and aspect, but recent logging in the past 25 years has resulted in a forest dominated by young aspen and other hardwoods. FDn33a2 is similar to FDn33a1 with red pine common in the canopy, but here in the LSCCLA, FDn33a2 is more varied with a higher presence of white pine and other hardwoods such as paper birch, quaking aspen, and red maple in the canopy and subcanopy. In addition, mountain maple (*Acer spicatum*), round-lobed hepatica (*Anemone americana*), and large-flowered bellwort (*Uvularia grandiflora*) help to further distinguish FDn33a2 from FDn33a1.

FDc23a. Jack Pine – (Yarrow) Woodland (34 acres) represents only a small area on west-facing slopes in the southern half of the LSCCLA. FDc23a is heavily dominated by jack pine and has a more open canopy and understory than FDc24a (below). This community also has a greater presence of broad-leaved evergreen species such as bearberry (*Arctostaphylos uva-ursi*), pipsissewa (*Chimaphila umbellata*), and wintergreen (*Gaultheria procumbens*), which grow well in low nutrient conditions. Red oak, paper birch, and red maple are occasional in the understory. The shrub layer in this community is poorly developed. Other species that are common are yarrow (*Achillea millefolium*), big bluestem (*Andropogon gerardii*), bracken, hoary puccoon (*Lithospermum canescens*), poverty grass (*Danthonia spicata*), harebell (*Campanula rotundifolia*), cow wheat, lowbush blueberry, tessellated rattlesnake plantain (*Goodyera tessellata*), large-leaved aster, and smooth blue aster (*Symphotrichum laevis*). The moss *Pleurozium schreberi* is often abundant and with patches of reindeer lichen (*Cladina* spp.) interspersed. This community is present on fine sand to sandy loam soils that are excessively drained. This community has become increasingly rare in this part of the state and statewide is ranked S1, or critically imperiled. [Relevé 5325]

FDc24a1. Jack Pine – (Bush Honeysuckle) Woodland (Bracken Subtype) (172 acres) is mostly present on gently sloping to flat terrain throughout the LSCCLA. Soils are typically sandy loams that are well drained. One of the larger areas of this community is just south of the confluence of the Mississippi River and La Salle Creek. Typical of this community, the canopy is dominated by jack pine with occasional red pine, red oak, and quaking and big-toothed aspen. FDc24a1 has a more well-developed tall-shrub layer than FDc23a, with abundant beaked hazelnut and American hazelnut (*Corylus americana*) as the most common species. Other common shrubs are bush honeysuckle, juneberries (*Amelanchier* spp.), and lowbush blueberry. The ground layer is variable in cover and mostly dominated by bracken, large-leaved aster, Canada mayflower, poison ivy (*Toxicodendron rydbergii*), common strawberry (*Fragaria virginiana*), mountain rice grass, Pennsylvania sedge (*Carex pennsylvanica*), northern bedstraw (*Galium boreale*), and twinflower. This community has become increasingly rare in this part of the state and statewide is ranked S1, or critically imperiled. [Relevé 7899]

FDc34a. Red Pine – White Pine Forest (268 acres) is the most common community along the west-facing, steeply rugged slopes in LSCCLA. Soils in this community are typically sand to sandy-loams that are often stony with moderately sized boulders present at the soil surface. This dry-mesic pine or pine-hardwood forest community is most often dominated by red pine with occasional white pine and jack pine. Often, paper birch, red maple, quaking aspen, big-toothed aspen, and northern red oak are present in both the canopy and subcanopy. The shrub layer is interrupted (50-75% cover) with beaked hazelnut, red maple saplings, juneberries, and chokecherry (*Prunus virginiana*) as the most common species present. The ground layer is patchy with abundant large-leaved aster, Canada mayflower, wild sarsaparilla, bracken and early meadow-rue (*Thalictrum dioicum*). Other species that are common include twinflower, rose twisted stalk (*Streptopus roseus*), hog peanut (*Amphicarpaea bracteata*), bush honeysuckle, Pennsylvania sedge, pale bellwort (*Uvularia sessilifolia*), and wood anemone (*Anemone quinquefolia*). Many of the steep, drainage valleys within this FDc34a community, especially on north-facing slopes, are closer to FDn33a1 (see above description), with balsam fir in the understory and often species in the ground layer that are more indicative of northern communities such as bunchberry, bluebead lily (*Clintonia borealis*), running clubmoss (*Lycopodium clavatum*), and fly honeysuckle (*Lonicera canadensis*). These forests are not always mapped separately, since they are often too small to differentiate from the larger community. Approximately 20 acres of this community on the east side of the unnamed lake in the southern part of LSCCLA is DNR designated old-growth forest (figure 7). Many of the red pines measured in the area range between 50-60cm DBH (diam-

eter at breast height). An increment borer was used to measure the ages of two larger red pines. The tree cores indicated ages of ~110-120 years old for the average 55-60cm DBH range. [Relevés 0918, 7898]

FDc34b. Oak – Aspen Forest (70 acres) is similar to FDc34a but is dominated by a combination of northern red oak, quaking aspen, paper birch, red maple, bur oak, big-toothed aspen or basswood. Species that help to differentiate FDc34b from FDc34a include abundant northern red oak and aspen in the canopy and relatively little to no conifers. Ground layer species are similar. Within the LSC-CLA, FDc34b may have historically been FDc34a. However, conifer removal as a result of past management could have hindered pine regeneration.

Mesic Hardwood Forest (MH) System

Mesic Hardwood Forests are characterized by continuous, often dense canopies of deciduous trees, particularly sugar maple, basswood, oak, and paper birch. Soils are well-drained and do not experience saturation except after spring snowmelt and heavy rains. Fine-textured soil or dense subsoil layers that perch snowmelt and rainfall are often present. Essential nutrients in decaying organic matter are mineralized at twice the rate of those in the Fire-Dependent Forest System and the Wet Forest System, making them quickly available for uptake by plants. Understory plant species have access to seasonally predictable moisture and nutrients, but they are limited by low light levels typical beneath the tree canopy. Tree mortality tends to be constant, consisting of deaths of individual trees or small clumps affected by minor windthrow or disease. Stand-regenerating disturbances are uncommon, but patchy windthrow and fire can be more frequent.

MHn35a. Aspen – Birch – Basswood Forest (58 acres) is a mesic to dry-mesic hardwood forest present on well-drained to moderately well-drained loamy soils in LSCCLA. This community often occurs along the La Salle Lake shoreline on north- and east-facing slopes. MHn35a has a largely hardwood-dominated canopy composed of variable mixtures of paper birch, sugar maple, red maple, basswood, and quaking aspen, with white pine and balsam fir occasional. Sugar maple is often abundant in the subcanopy. The shrub layer is often patchy with the most common species including beaked hazelnut, chokecherry, pagoda dogwood (*Cornus alternifolia*), fly honeysuckle, and balsam fir. The ground layer is variable, ranging from sparse to continuous. Wild sarsaparilla, large-leaved aster, sweet-scented bedstraw (*Galium triflorum*), wood anemone, bluebead lily, bunchberry, Canada mayflower, wild ginger (*Asarum canadense*), large-flowered bellwort, lady fern (*Athyrium filix-femina*), early meadow rue (*Thalictrum dioicum*), Pennsylvania sedge, and long-stalked sedge (*Carex pedunculata*) are typically present.

MHn44a. Aspen – Birch – Red Maple Forest (40 acres) is a wet-mesic to mesic forest typically present as inclusions within the drier MHc26b community that covers much of the flatter terrain in the LSCCLA. These inclusions are typically low spots that are more poorly-drained than the surrounding community. Scattered black ash are present in the continuous to interrupted canopy along with basswood, green ash, American elm, bur oak, and quaking aspen. Occasionally balsam fir, red maple, and sugar maple are present in the canopy or subcanopy. The shrub layer is patchy with the most common species being beaked hazelnut, with arrowwood (*Viburnum rafinesquianum*), prickly gooseberry (*Ribes cynosbati*), and chokecherry often present. Species in the ground layer include those characteristic of the surrounding forest (i.e., MHc26b), and also species characteristic of wet communities. Abundant lady fern is typical along with black ash seedlings, red and sugar maple seedlings, palmate sweet coltsfoot (*Petasites frigidus* var. *palmatus*), starflower (*Trientalis borealis*), hairy Solomon's

seal (*Polygonatum pubescens*), large-flowered bellwort, large-leaved aster, wild sarsaparilla, dwarf raspberry (*Rubus pubescens*), and round-lobed hepatica all common.

MHn44b. White Pine – White Spruce – Paper Birch Forest (140 acres) is a mesic forest most common on gently sloping terrain along La Salle Lake and La Salle Creek and often influenced by groundwater seepage. Occasional small drainage channels are common throughout. The soils are fine-textured loams or loamy sands with clayey subsoils, often near the water table. The canopy is dominated by a wide mixture of species such as white pine, balsam fir, quaking aspen, sugar maple, paper birch, or white spruce. The shrub layer is usually patchy or not well developed, but beaked hazelnut and mountain maple are often present. The ground layer is often a wide mixture of rich mesic hardwood species interspersed with species indicative of forested peatlands and wet forests. Species adapted to wetter conditions are typically found adjacent to seepage areas. Common species include bulblet fern (*Cystopteris bulbifera*), hog peanut, zigzag goldenrod (*Solidago flexicaulis*), bunchberry, bluebead lily, large-leaved aster, wild sarsaparilla, lady fern, wild ginger, bishop's cap (*Mitella nuda*), one-flowered pyrola (*Moneses uniflora*), showy lady's slipper (*Cypripedium reginae*), alpine enchanter's nightshade (*Circaea alpina*), starflower, twinflower, and common oak fern (*Gymnocarpium dryopteris*). A population of the State Threatened ram's-head orchid (*Cypripedium arietinum*) has been documented in this community on the east shore of La Salle Lake.

MHn46b. Black Ash – Basswood Forest (10 acres) is a wet-mesic lowland hardwood forest that occurs only within one of the large drainage valleys on the west side of La Salle Lake. The drain is not as steep and narrow as others along the lake and a perennially flowing creek meanders down the slope to the lake through sand, cobbles, and occasionally large boulders. This limited native plant community is dominated by wet forest species, but several species with affinities for the surrounding drier mesic forests are present as well. Black ash and basswood are the predominant canopy trees within the creek bed, with occasional balsam fir, white pine, and quaking aspen. Mountain maple is the dominant shrub layer species. The ground layer has abundant lady fern and ostrich fern (*Matteuccia struthiopteris*), with wild ginger, jack-in-the-pulpit (*Arisaema triphyllum*), naked bishop's cap, common oak fern, touch-me-not (*Impatiens capensis*), alpine enchanter's nightshade, black ash seedlings, bulblet fern, drooping wood sedge (*Carex arctata*), wild sarsaparilla, and long-stalked sedge also common.

MHc26b. Red Oak – Sugar Maple – Basswood – (Large-flowered Trillium) Forest (775 acres) accounts for the most acreage in the northern half of the LSCCLA and is typical of flatter terrain and northwest-facing slopes. This community is a dry-mesic hardwood forest present on well-drained loamy or sandy loam soils. The canopy cover is typically 50-100% and usually dominated by a combination of northern red oak, paper birch, quaking aspen, or basswood. Bur oak, red maple, big-toothed aspen, red pine, or white pine may also be present. Red maple, ironwood, and sugar maple are the most common subcanopy trees. The shrub layer is patchy with beaked hazelnut, arrowwood, chokecherry, and pagoda dogwood as the most common species. The ground layer is variable with the most common species including bracken, Canada mayflower, large-leaved aster, large-flowered bellwort, hog peanut, round-lobed hepatica, large yellow lady's slipper (*Cypripedium parviflorum* var. *pubescens*), wood anemone, early meadow rue, pale bellwort, pale vetchling (*Lathyrus ochroleucus*), zigzag goldenrod, Clayton's sweet cicely (*Osmorhiza claytonii*), Pennsylvania sedge, and yellow violet (*Viola pubescens*). Sugar maple seedlings can sometimes be abundant. On the west side of the La Salle Lake and further south along La Salle Creek, this community has several small inclusions of White Pine – White Spruce – Paper Birch [MHn44a] in low topographic depressions, some being too small to map. [Relevés 5319, 5320, 5322, 5324]

Wet Forest (WF) System

Wet hardwood or conifer-hardwood forests are ones that occur on muck or peat soils. Moving groundwater provides a steady supply of nutrients to all soil depths. Because deep soil in Wet Forest communities is constantly saturated and anaerobic, plant roots are concentrated at shallow depths just above the water table, and canopy trees are susceptible to windthrow. Variability in microtopography and depth to groundwater (because of hummocks and hollows) causes variability in soil nutrients and oxygen content, creating a diversity of microhabitats in the community and leading to diverse species composition. Some areas of Wet Forest in the LSCCLA were identified and mapped by air photo interpretation and classified primarily by tree canopy composition and landscape position.

WFs57a. Black Ash – (Red maple) Seepage Swamp (140 acres) is most common in the LSCCLA along the margins of lakes or La Salle Creek in narrow zones between the intersection of riparian areas and upland slopes. These forested swamps are typically on gentle slopes at the bases of steep rises. Springs and seeps with continuously flowing cold groundwater often emerge within this community. Groundwater is almost always within reach of plant roots, but does not remain above the mineral soil surface for long periods during the growing season, except in areas of seepage. Soils are poorly to very poorly drained. The canopy is patchy to interrupted, with trees often absent from localized areas of groundwater discharge. The canopy is strongly dominated by black ash, often with other hardwood species present such as basswood, paper birch, and American elm. Red maple can be occasional in the understory. The shrub layer is well developed with mountain maple and speckled alder (*Alnus incana* subsp. *rugosa*) abundant. The ground layer is characterized by raised peaty hummocks, with open pools and rivulets in seepage areas. Wetland species such as common marsh marigold (*Caltha palustris*), stinging nettle (*Urtica dioica*), touch-me-not, great water dock (*Rumex orbiculata*), bluejoint (*Calamagrostis canadensis*), northern blue flag (*Iris versicolor*), water horsetail (*Equisetum fluviatile*), fowl manna grass (*Glyceria striata*), lake sedge (*Carex lacustris*), and tussock sedge (*C. stricta*) are common in wet areas, with starry false Solomon's seal (*Maianthemum stellatum*), ostrich fern, common oak fern, bulblet fern, alpine enchanter's nightshade, dwarf raspberry, tall coneflower (*Rudbeckia laciniata*), naked bishop's cap and other mesic or wet-mesic species present on hummocks. Small inclusions of sedge meadow or shrub swamp occur within this community.

Forested Rich Peatland (FP) System

Forested Rich Peatland communities are conifer- or tall shrub-dominated wetlands on deep (>15in), actively forming peat. They are characterized by mossy ground layers, often with abundant shrubs and forbs. Peat in these communities is moderately decomposed and formed from woody plant debris. The water table is typically below the peat surface and drops regularly during the summer. Hummocks provide substrates that remain dry and aerated enough to support trees and shrubs and as a result the ground layer is composed primarily of mostly shade-tolerant forbs—a mix of upland species from surrounding forest on hummocks and species adapted to wetter conditions in the hollows. Feathermosses, brown mosses, and minerotrophic *Sphagnum* mosses are prominent.

FPn63b White Cedar Swamp (Northcentral) (35 acres) occurs just north of CSAH 9 on the east side of La Salle Creek. As its name suggests, this community is dominated by northern white cedar— with occasional black spruce, and is often associated with stream channels or adjacent to lakes. Because of proximity to uplands, the community receives groundwater (commonly in the form of seeps and subsurface flow) that has not been depleted of minerals, creating microhabitats for both peat-forming species on hummocks and species adapted to saturated conditions in hollows and adjacent to seeps. *Sphagnum* moss, various feathermosses and liverworts carpet low hummocks with only

occasional water-filled hollows. A diverse array of forbs exists such as starflower, goldthread (*Coptis trifolia*), twinflower, naked miterwort, dwarf raspberry, creeping snowberry (*Gaultheria hispidula*), speckled alder, small northern bog orchid (*Platanthera obtusata*), small yellow lady's slipper (*Cypripedium parviflorum* var. *makasin*), sheathed sedge (*Carex vaginata*), and feminine sedge (*Carex gynocrates*). Within this swamp, seeps and springs emerge from several areas along slopes and terraces at the edge of the adjacent upland forest. Northern oak fern (*Gymnocarpium robertianum*), proposed for State Special Concern status, is known from this forest, as well as hair-like sedge (*Carex capillaris*), a State tracked species. [Relevés 8890, 5323]

FPn82b Extremely Rich Tamarack Swamp (18 acres) is a tamarack dominated community along the margins of La Salle Creek. Black spruce and balsam fir are occasional in the canopy. In LSCCLA, FPn82b has only been identified in one area on slightly sloping terrain. It is characterized by many iron-rich seeps that drain to the creek and is much wetter than FPn63b, described above. The shrub layer is well developed, but patchy, with speckled alder, mountain maple, and dwarf alder (*Rhamnus alnifolia*) as the most common species. Species typical in the groundlayer are three-leaved false Solomon's seal (*Maianthemum trifolium*), small cranberry (*Oxycoccus quadripetalus*), bulblet fern, bunchberry, Labrador bedstraw (*Galium labradoricum*), tall northern bog orchid (*Platanthera huronensis*), alpine enchanter's nightshade, Labrador tea (*Rhododendron groenlandicum*), dwarf raspberry, wild sarsaparilla, northern marsh fern (*Thelypteris palustris*), interior sedge (*Carex interior*), soft-leaved sedge (*C. disperma*), tussock sedge, and abundant bristle-stalked sedge (*C. leptalea*). The moss layer has >50% cover with patches of *Sphagnum* and feathermosses on hummocks and abundant *Mnium* moss in hollows and on tree bases.

Acid Peatland (AP) System

Acid Peatlands are conifer-, low-shrub-, or fine-leaved-sedge-dominated communities on deep *Sphagnum* moss peat with pH below 5.5. Precipitation provides most or all of the hydrological inputs because the *Sphagnum* peat elevates the community above the reach of mineral- and nutrient-rich groundwater and surface runoff. Acid Peatlands are present in small basins or on floating mats near lakes and ponds in this area.

APn91a Low Shrub Poor Fen (2 acres) is only present in one small basin. This community was identified through air photo interpretation only and not visited in the field. APn91a is typically dominated by low-shrubs, primarily leatherleaf, with cover generally greater than 50%. *Sphagnum* hummocks are moderately well developed, but hollows are rare. Other common species in this community include bog wiregrass sedge (*Carex lasiocarpa*), beaked sedge (*Carex utriculata*), small cranberry, pitcher plant (*Sarracenia purpurea*), sundew (*Drosera rotundifolia*), bog rosemary (*Andromeda glaucophylla*), and bog birch (*Betula pumila*).

Wet Meadow/Carr (WM) System

Wet Meadows/Carrs are open wetlands dominated by dense cover of broad-leaved graminoids or tall shrubs or a combination of the two. They are associated with wetland basins, stream and drainage ways, drained beaver ponds, and shallow bays. Wet Meadows/Carrs are subjected to moderate inundation following spring runoff and heavy rains and periodic drawdowns during summer. This fluctuation in water levels is enough to prevent trees from becoming established.

WMn82a Willow – Dogwood Shrub Swamp (126 acres) is the dominant community on the valley floor, adjacent to the meandering La Salle Creek. It is an open wetland with abundant broad-leaved

graminoids, and shrub cover is typically >25%. Shrubs that may be abundant include various willows (*Salix* spp.), red-osier dogwood (*Cornus sericea*), speckled alder, and bog birch (*Betula pumila*). Herbaceous species are similar to species found in the Sedge Meadow community described below.

WMn82b Sedge Meadow (87 acres) is another community that is common adjacent to La Salle Creek. Sedge Meadows are open wetlands with abundant broad-leaved graminoids, and shrub cover typically <25%. Beaked sedge, lake sedge, bluejoint, and tussock sedge typically dominate or share dominance in this community. Forb cover is variable but species such as tufted loosestrife (*Lysimachia thyrsoiflora*), great water dock, bulb-bearing water hemlock (*Cicuta bulbifera*), marsh skullcap (*Scutellaria galericulata*), and marsh bellflower (*Campanula aparinoides*) are often present. Inclusions of Sedge Meadow often occur within openings of Black Ash – (Red Maple) Seepage Swamps [WFs57a].

Other Vegetation Map Units

The Young Forest Complex mapping unit consists of forested uplands that have been harvested within the last 30-40 years. These areas may contain small patches that have not been cut, but since they are within a matrix of young forest and are too small to map, they are considered part of the young forest matrix.

Aquatic Habitats

Some of the most notable features of the LSCCLA are its high-quality lakes and streams. La Salle Creek is a very shallow waterway that slowly makes its way north from Itasca State Park along a narrow valley floor through sedge meadows and shrub swamps. The creek bed is mostly comprised of a silty or sand and gravel bottom. Very little disturbance has impacted the creek aside from beavers. In the early 1900s, the creek was temporarily dammed north of CSAH 9 to help facilitate moving felled trees during that time (J. Echtenkamp, pers. comm.). A small pool or widened area of the creek is evidence of where this occurred.

The four lakes along La Salle Creek's course vary considerably in size and depth. Beginning with the most notable, the 244-acre La Salle Lake is ~213 feet deep and is one of the deepest lakes in the State. It has 18,600 feet of shoreline and much of its input is spring fed. It is a remarkably wild and scenic lake, particularly because it has never been developed, aside from the very northern edge where a resort caretaker's home sits along with a dock that was built for guests of the camping and RV resort nearby. Given its steep sides, the lake has a very small (about 7%) littoral fringe (i.e., portion of the lake with a depth of 15 feet or less) (MPCA 2001). Although not abundant, largemouth bass, northern pike, walleye, yellow perch, bluegill sunfish, and black crappie have been documented as the primary species of fish (B. Klemek and D. Kingsley, pers. comm.). Steep slopes surrounding La Salle Lake vary from approximately 15 to 30% in grade. The lake currently does not have a public access. Karen Myhre, aquatic botanist for MCBS, conducted an aquatic plant survey on La Salle Lake and ranked the lake as having outstanding quality (see attached summary of aquatic plants, Appendix B).

The Minnesota Pollution Control Agency (MCPA) conducted a short-term monitoring project during the summer of 2000 and again in 2004 on La Salle Lake. The lake was targeted for survey because the Hubbard County Planning and Zoning officer requested La Salle Lake and another nearby lake (Beauty Lake) be sampled by the MPCA as a part of an effort to establish baseline water quality data due to the likely potential for development and subdivision of both lakes. The MPCA and Hubbard County Planning and Zoning agreed to collaborate on collecting baseline data with the intent of tracking changes

in water quality, shoreline characteristics, and overall ecology as a result of potential development. The survey results showed that La Salle's water quality was very good with low phosphorus levels compared to other lakes in the northeast¹ and one model suggested that total phosphorus levels were likely near "pre-European" influence conditions in terms of nutrient status (Plevan and Heiskary 2001). Beauty Lake has since been developed; however, La Salle Lake has remained mostly unchanged. A more detailed discussion of the lake survey results can be found later in this document under "Management and Conservation: Aquatic Management and Monitoring," page 19.

Three other lakes occur south of La Salle Lake; however, Big La Salle Lake has not been included within the boundaries of the LSCCLA due to lakeshore development. An aquatic plant survey was conducted on this lake by Karen Myhre and included in Appendix B. The remaining two smaller lakes within the LSCCLA, Middle La Salle Lake and an unnamed lake near the southern boundary, are only 16 acres and 20 acres respectively (figure 4). They are both shallow, undeveloped lakes and isolated along the creek with no public access. A breeding pair of Trumpeter swans (State Threatened species) has been documented on Middle La Salle Lake. Both lakes are mostly within public ownership (figure 3).

Rare Plants

A small population of ram's head lady slipper (*Cypripedium arietinum*), State Threatened species, occurs on the east side of La Salle Lake in a transition area between two native plant communities, Red Oak – Sugar Maple – Basswood Forest [MHc26b] and White Pine – White Spruce – Paper Birch Forest [MHn44b]. Although the orchid's habitat can be variable, this is somewhat atypical habitat for this species, which is more often found in forested swamps or sandy, fire-dependant forests or woodlands with an open understory. The location in which the orchids occur in the LSCCLA is dense with competition from other herbaceous species, but several were found to have been in flower under partial shade. This species is reported to be pollinated by small bees (Smith 1993).

Hair-like sedge (*Carex capillaris*) has been recorded from the cedar swamp north of La Salle Lake. Hair-like sedge does not have an official listed status, but its population is tracked in the MN DNR Natural Heritage Information System. This species is often found in tamarack, black spruce, or cedar swamps or other wet communities on drier hummocks.

Northern oak fern (*Gymnocarpium robertianum*) has also been recorded from the cedar swamp north of CSAH 9 and La Salle Lake. This species is currently not a listed species but is proposed for Special Concern status. The principal habitat for Northern oak fern is cool, wet substrates, particularly in organic soils and often in areas of thick moss cover, including *Sphagnum* mosses, in wet forests or forested swamps. They are often found growing in large colonies of 50-100 or more plants. It can be distinguished from the similar looking common oak fern (*Gymnocarpium dryopteris*) by its larger, more developed leaf blade and by the distinct glandular hairs on the rachis.

¹ The US PCA has divided the state of Minnesota into seven ecoregions based on soils, landform, potential natural vegetation, and land use. Both Beauty and LaSalle Lakes are located in the Northern Lakes and Forests (NLF) ecoregion. Comparing a lake's water quality information to that of reference lakes in the same ecoregion provides a clearer picture of where a lake falls in the spectrum of water quality parameters relative to other lakes in that ecoregion (Plevan and Heiskary 2001). Ecoregions are similar to Section and Province boundaries determined by the Ecological Land Classification Program (ECS) (MN DNR 2000).

Rare Animals

Oxyethira itascae, a caddisfly, appears to be endemic to Minnesota, where it was first described in 1993 based on 99 male specimens collected from Clearwater and Hubbard counties in 1988 and 1989 (Monson and Holzenthal 1993). Most specimens were collected in and around Itasca State Park and from the LSCCLA, where the first specimen in Minnesota was collected at the edge of La Salle Creek. Additional *O. itascae* populations were found in north-central and northeastern Minnesota in 1999 and 2000. Despite these additional collections, further inventory work is still needed to find other populations of this species and delineate its complete range in the state. *O. itascae* was listed as a Special Concern species in Minnesota in 1996. Adults of *O. itascae* have been collected from a variety of ecosystems but seem to prefer meandering, silt-bottomed streams. They have not been found near lakes (MN DNR 2008).

Another species of Special Concern caddisfly, *Oxyethira ecornuta*, was collected in 1988 during a study at La Salle Creek representing the first record of the species in the United States. Two other records of this species were discovered in 2000 in two nearby counties. The only other North American record is from Ontario, Canada. It is also known from Finland and Sweden (Monson and Holzenthal 1993). Larvae of *Oxyethira* are found in both lakes and streams. *O. ecornuta* was listed as a special concern species in Minnesota in 1996 (MN DNR 2008).

A breeding pair of Trumpeter Swans (*Cygnus buccinator*), a State Threatened species, with four cygnets was recorded from Middle La Salle Lake in 2008. During the breeding season, trumpeter swans select small ponds and lakes or bays on larger water bodies with extensive beds of cattails, bulrush, sedges, and/or horsetails. Ideal habitat includes about 100 m (328 ft.) of open water for take-off, stable levels of unpolluted fresh water, emergent vegetation, low levels of human disturbance, and the presence of muskrat (*Ondatra zibethicus*) houses and American beaver (*Castor canadensis*) lodges for use as nesting platforms (MN DNR 2008).

Invasive Species

Invasive species are largely absent from the LSCCLA except for a very minor amount of reed canary grass (*Phalaris arundinacea*), hybrid cattail (*Typha x. glauca*) and Canada thistle (*Cirsium arvense*) along the creek and lakeshores. Introduced species such as red clover (*Trifolium pratense*), common dandelion (*Taraxacum officinale*), Canada thistle, and common plantain (*Plantago major*) were observed along some sections of off-highway vehicle (OHV) trails.

European earthworms have had little to no impact in the LSCCLA, and if present, they have not made a noticeable impact on the duff layer in the upper, flatter terrain of the mesic hardwood forests. In Mesic Hardwood Forest Systems, earthworms eat the duff and work organic matter into the soil, changing the soil profile and reducing the abundance of many understory plants (Frelich et al. 2006). Although preliminary results do not show similar effects on vegetation in Fire-Dependent Forests, the full impact is unknown, and the ecological change could be significant (Hale 2004).

LAND USE

Past and Present Human Disturbance

Land use in this region is primarily timber management and to a lesser extent, residences and cabins, and agricultural use. Hubbard County, as well as surrounding counties, has a high amount of lakeshore development. Recreational use is significant, including hunting, fishing, hiking, snowshoeing, skiing, ATV riding, snowmobiling, and canoeing/kayaking.

Cultural Sites

An early Native American Elk Lake Culture prehistoric site was discovered in the early 1990s adjacent to La Salle Creek in Section 30, just north of CSAH 9 (figure 7). The site was identified during planning for an upgrade of the county highway and was partially excavated in 1995 before the road was rebuilt. The Institute for Minnesota Archaeology's web site "From Site to Story: The Upper Mississippi's Buried Past" states:

"artifacts recovered from the LaSalle Creek site have provided archaeologists with a clearer picture of how the producers of Brainerd Ware ceramics lived, what they ate, and what tools they made. In addition, the date of 3180 years ago obtained from charred residue on the inside of a ceramic sherd at the LaSalle Creek Site is one of the earliest known dates for an Elk Lake Culture occupation in Minnesota."

The Northern Headwaters of the Mississippi River has been an extremely important area for these early archaeological sites and additional areas within the LSCCLA may be discovered.

Agricultural & Development Use

Approximately 80 acres of open hay fields and pastureland exist on the private property north of La Salle Lake. Owners of this property operate a small resort, which includes a small recreational vehicle park, in addition to maintaining a caretaker's residence at the north end of the lake. Near the small RV area, just south of CSAH 9, is a newly built indoor pool and recreation facility that was built for visitors.

Fragmentation

The only habitat fragmentation that occurs within the LSCCLA is the relatively small area of pastureland mentioned in the above paragraph and the area surrounding Big La Salle Lake, which divides the LSCCLA into disconnected north and south parts. Big La Salle Lake was excluded from the larger landscape corridor due to lakeshore development.

Timber Harvest

The LSCCLA is within a forested landscape, and a region that is intensively managed for timber. As with many of the forests in northern Minnesota, much of the area was logged beginning in the early 1900s. However, recent timber harvest has generally been minimal within the LSCCLA except for the very southern area near the Itasca State Park Boundary where selective logging of the upland and a clearcut of the forested swamp was done on private land approximately seven years ago. Another small area on Hubbard County administered land on the west side of La Salle Lake was also recently harvested. These recently cut areas have been mapped as young forest complex or disturbed land (figures 5 and 6). Areas within the LSCCLA that have had little to no evidence of logging in over 80-100 years (or possibly have never been logged) are the forested swamps (e.g. White Cedar Swamp) and lowland forests (e.g. Black Ash Seepage Swamp), as well as the steep, red pine dominated slopes along the entire length of the La Salle Creek valley. Areas outside of the LSCCLA that have been harvested recently have often defined the boundaries of the LSCCLA (particularly following the edge of the steep valley slopes). These areas reflect an attempt to exclude recent harvest patches, which have mostly occurred on Clearwater and Hubbard County administered land.

Recreational Use

The LSCCLA is currently used for fishing and hunting, primarily the latter. Most of the private land

within the area is currently (or was historically) used for hunting purposes. Fishing that does occur takes place mostly on La Salle Lake by guests staying at the resort or with special permission. Since the lake is extremely deep and does not have a wide littoral zone, it is not a very productive lake in terms of a managed fishery (Park Rapids Area Fisheries Manager Doug Kingsley, pers. comm.). The two smaller lakes in the southern LSCCLA are mostly inaccessible except by a rough OHV road and are seldom used except by local residents who live on the surrounding properties.

Roads & Trails

The only major road that exists within the boundaries of the LSCCLA is a small portion of the east-west running CSAH 9. OHV trails in the LSCCLA, used mostly by all-terrain vehicles (ATVs), exist largely within the southern portion of the area. Trails have been created to access La Salle Creek and the two smaller lakes. Many of these trails make use of steep drainage valleys and occasionally old logging roads. In many places along trails that exist parallel to steep slopes, erosion and rutting were observed. A buried pipeline also runs northwest-southeast through the area and was recently widened and regraded in 2008.

LAND OWNERSHIP

County (Clearwater and Hubbard counties) and state land, including the Mississippi Headwaters State Forest and Itasca State Park to the south, surrounds much of the LSCCLA. Public ownership, primarily Hubbard County land, accounts for approximately half of the ownership within the LSCCLA. The other half is made up of private ownership; however, only a few landowners account for much of the private acreage. The largest private tract, a ~1,230-acre parcel that encompasses La Salle Lake, is in the heart of the LSCCLA (and currently for sale).

Major Ownership within LSCCLA (figure 3):

State: 80 acres

Hubbard County: 1,365 acres

Clearwater County: 137 acres

Private: 1,671 acres (includes four private landowners, plus portions of three smaller tracts)

MANAGEMENT AND CONSERVATION

Management Considerations

The management items described below are, as the section title states, “considerations” or recommendations only. This section serves as means to outline potential issues of concern or attention for the LSCCLA and not meant to suggest a definitive outcome or specific management action must occur within the LSCCLA.

Research & Monitoring Needs

The LSCCLA was surveyed in 2008 as part of MCBS work in Hubbard County. Particular attention was given to this area due to its immediate and apparent uniqueness relative to other areas in the county, as well as nearby counties. However, additional surveys for rare plant species and a more thorough survey of communities would complete a more detailed understanding of the area. MCBS surveys of mammals, birds, amphibians and reptiles are also lacking.

Since many others have recognized this area as a special place prior to the MN County Biological Survey, a variety of past survey work has been done in the LSCCLA. One such survey effort by Paul

Rundell in 1978 was a broad "Taxonomic Assessment of Sundog Center," which documented plants and animals surrounding La Salle Lake. During the 1970s, this area was an environmental learning center called Sundog Center. Unfortunately, given the broad nature of the assessment, transect locations were not recorded and as a result, the locations of the plants and animals that were documented are not known. An attempt to recreate such an effort would help to provide a more accurate and current account of the La Salle Lake area, particularly for animal species.

Recreational Use

Hunting and fishing could continue to be recreational uses of the area. However, any management of game species populations should be compatible with maintaining natural ecosystem functions and viable and healthy populations of native animal and plant species. The DNR's Division of Fisheries has suggested that La Salle Lake could be designated as a "Heritage Lake," with special fishing regulations to limit harvest. Other restrictions on motorized ice augers, electronic fish finding devices or boat motors could also be considered.

What distinguishes this lake, as well as the entire La Salle Creek valley, is the sense of remote solitude. Whether or not to allow any motorized vehicles (boats or other) in the area, if not acquired by the SNA program (motorized vehicles are not allowed in SNAs), should be carefully considered. Noise pollution could easily pose a significant problem within this narrow valley, since sound is easily carried and reverberated off the steep valley walls.

Roads & Trails

In recent years, off-road vehicle use has increased throughout Minnesota, and the La Salle Creek area is no exception, especially in nearby State Forests. Current trails (as well as any newly created trails for hiking or motorized use) should be monitored for erosion and invasive species and their compatibility with the goals and objectives for this area should be assessed. Due to the steep slopes that characterize the area, soils are particularly sensitive to damage. In addition, due to the highly erodible soils and proximity to wetlands, special attention should be paid to monitor areas along the creek and valley floor for motorized use. The nearby Headwaters State Forest and Coffee Pot Boat landing have suffered extensive damage to easily erodible sandy riparian zones along the Mississippi River due to recent illegal ATV use. Roads and trails also serve as an easy means for invasive species to spread, and areas that do not have an extensive trail network currently (particularly surrounding La Salle Lake in the north) could become more vulnerable to invasive plant establishment; spotted knapweed, in particular, has been very problematic in the region.

Restoration

Areas that are currently pastureland or hay fields could potentially be reverted to forest. Restoration of the RV area is a possibility as well, but may prove more difficult. A dirt road to the area and electrical hookups would need to be removed. However, the building that houses the pool might need some additional thought as to new uses.

Forest Management

Typical factors associated with forest management that are particularly relevant in the LSCCLA include; anthropogenic vs. natural disturbance, forest fragmentation, soil compaction and erosion, and invasive species mitigation.

Overall, recent timber harvest activity has been minimal within the LSCCLA. Areas that have been recently cut should be allowed to increase in age and structural composition and move toward the mix and proportion of species found in the native plant community appropriate to that site.

Additional harvesting of mature forests would increase fragmentation and reduce habitat for animal species that depend on large areas of relatively undisturbed, contiguous forest, such as the ovenbird (*Seiurus aurocapillus*) and northern goshawk (*Accipiter gentilis*), both Species in Greatest Conservation Need (SGCN) (MN DNR 2006). For some species with ranges that extend over several native plant communities, such as timber wolves and northern goshawks, a contiguous landscape mosaic is also important. Several studies also suggest that an increase in habitat fragmentation and early successional and edge habitat resulting from scattered timber harvests and other anthropogenic created openings can be correlated to an increase in white-tailed deer (*Odocoileus virginianus*) populations. By foraging selectively, deer have the potential to have large impacts on forest stand composition and relative abundance of herbaceous plant cover (Côté et al. 2004). And since deer wander widely, high deer densities can affect remaining stands of old and mature forests, greatly modifying their composition as well (Alverson et al. 1988).

Many native plant species adapted to mature forests can also be adversely affected by canopy removal and increased forest edge. With increased light levels and desiccation, species adapted to climax forest conditions become more vulnerable to displacement by aggressive native or exotic species. Although noxious species are generally minimal or rare in forest ecosystems in northern Minnesota, timber harvesting has been known to facilitate their spread (Berger et al. 2008). Haul roads and skid trails have been identified as primary conduits for the dispersal of introduced species into the interior of managed stands (Berger et al. 2008), and spotted knapweed (*Centaurea maculosa*) is a species particularly suited to invade sandy soils in the LSCCLA. Abandoned roads and landings can also take decades or longer to return to a natural state because of soil compaction and native species displacement caused by heavy machinery traffic. Soil compaction following skidder traffic has been shown to influence the abundance, diversity, growth, proliferation, and recovery of the forest ground flora (Mou et al. 1993; Buckley et al. 2003; Berger et al. 2004) and compositional shifts in the ground flora from forest species to early successional, ruderal, and disturbed-forest species and noxious species increase with disturbance intensity (Berger et al. 2008).

Because there are many steep slopes (ranging from 20-65°) adjacent to riparian areas in the LSCCLA, timber harvesting or road creation that results in erosion of sensitive soils is a concern. These slopes drain to the creek or one of the lakes along the creek's course; therefore, harvest activities could negatively affect water quality. The communities along these slopes are most frequently FDc34a, FDn33a or MHn35a (see native plant community descriptions above).

Timber harvest in pine communities, particularly jack pine, often includes silvicultural treatments that do not maintain the native plant community ground layer. Herbicides and mechanical site preparations involving soil disturbance (disk-trenching, drum-chopping and blading) typically result in higher cover of grasses and annual forbs (Peltzer et al. 2000). These methods are often employed on a site post-harvest to reduce woody and herbaceous competition for planted pine seedlings. Because these treatments are not selective and target both competitive and non-competitive plants, overall plant diversity is diminished. The resulting open niches increase the likelihood for invasive species such as thistles (*Cirsium* spp. and *Carduus nutans*), common mullein (*Verbascum thapsus*), horseweed (*Coryza canadensis*),

spotted knapweed, and sod forming grasses and sedges (e.g., *Carex pensylvanica*, *Poa pratensis*, and *Bromus inermis*) to become established over native species and can make site recovery and native plant community regeneration more difficult. Due to the high percentage of pine communities in the LSC-CLA including the critically imperiled S1 ranked community Jack Pine – (Bush Honeysuckle) Woodland (Bracken Subtype) [FDc24a1], ecological silviculture practices should be employed, which maintain ecosystem processes and native diversity.

It is recommended that lands within the LSCCLA be reserved from management until an interdisciplinary management plan with a focus on biodiversity protection and ecological function is developed for the area. This plan should include fire as a silvicultural management tool wherever possible, especially in areas with jack pine forest or woodland, as these areas historically had the highest frequency of disturbance from fire. Without fire, maintaining or regenerating these communities will prove more difficult.

Aquatic Management and Monitoring

According to the MPCA, La Salle Lake lies within a large watershed area of ~10,080 acres. The watershed area to lake area ratio is relatively high (45:1) (Plevan and Heiskary 2001). Currently, the lake has high water-quality, but as a result of the high watershed ratio, water quality is highly susceptible to change due to increases in nutrient loading that enter the lake.

For the MPCA survey that was conducted in 2000 and 2004 on La Salle Lake, a site located above the deepest part of the lake was monitored monthly from May through September. The following parameters were analyzed from a surface sample of water: chlorophyll *a*, total phosphorus (TP), total Kjeldahl nitrogen (TKN), total suspended solids (TSS), total suspended volatiles (TSV), alkalinity, color, pH, specific conductance and chloride. Additionally, a hypolimnetic water sample was analyzed for total phosphorus, a temperature and dissolved oxygen depth profile was taken, and Secchi disk transparency was recorded (Plevan and Heiskary 2001). The results showed only low levels of phosphorus concentrations, but small increases have the potential to result in measureable and perceptible increases in algae and reduction in transparency (Plevan and Heiskary 2001). Although water quality and TP were comparable to those of the reference lakes in the northeast, both chlorophyll *a* and Secchi transparency values comparatively are towards the poorer end of water quality, which according to Plevan and Heiskary's MPCA report, does not necessarily mean that more chlorophyll was actually produced in LaSalle Lake. Rather, the higher levels could be due to lower grazing pressure from zooplankton. The lake also remained thermally stratified throughout the monitoring period with the thermocline at approximately 5 to 8 meters, which is to be expected given its depth (Plevan and Heiskary 2001). (see Plevan and Heiskary [2001] for additional monitoring results and Minnesota Pollution Control Agency, La Salle Lake monitoring, an online database [2001, 2004])

Continued monitoring of the water-quality values originally sampled should resume. The report made several additional recommendations for the lake. A few are excerpted and paraphrased below:

- Due to the relatively high watershed area to lake area ratio, La Salle Lake is very susceptible to water-quality change due to increases in nutrient loading. La Salle Lake already exhibits minor algal blooms and reduced transparency. Every effort should be made by the state, local authorities, and local property owners to minimize water-quality impacts on this lake stemming from changes in land use in the lake's watershed.

- Any development that takes place should be in such a manner as to prevent direct stormwater runoff from entering the lake from impervious surfaces. Disturbance along the shoreline should be minimized as well. Natural riparian plant communities serve to stabilize the narrow shoreline and minimize the amount of pollutants that enter the lake.
- Rooted aquatic vegetation (macrophytes) are essential to stabilize shorelines and are critical to the overall ecology of the lake. Every attempt should be made to minimize disturbance of this aquatic community as well.
- La Salle Lake has not been monitored through the Citizen Lake Monitoring Program (CLMP). As Secchi transparency monitoring can be an important source of information for trend analysis, it will be important to get this lake included in the program. It may also be beneficial to see if there may be data for La Salle Lake at the Itasca Biological Station, which reportedly conducted water quality studies in the lake. These data could be useful for establishing background conditions and future trend assessments. Hubbard County's local water planner could help facilitate both activities.

Conservation Strategies

There are many factors to weigh in deciding protection priority. One is the overall biodiversity significance of an area. The MCBS program assigns biodiversity significance ranks to sites based on the size, rarity, and quality of native plant communities and the rarity and population size of rare species. Three MCBS sites (Hubbard County 92, 90, and the southern portion of 85) occur within the LSCCLA with Biodiversity Significance Ranks of Outstanding and High based on the significant natural features of the area including high-quality native plant communities, rare plants and animals, and an intact, functional ecological landscapes processes. Figure 7 shows biodiversity significance ranks of MCBS sites in the LSCCLA.

Another important factor is maintaining habitat continuity for rare animals and other wildlife species. Small, isolated parcels are generally not sufficient to ensure the survival of animals into the future. Places for animals to travel from one part of their habitat to another, and to disperse to new habitats, must be protected and managed appropriately. Protection of intact ecosystems is generally believed to be the most effective way to manage and protect rare features. According to Minnesota's Comprehensive Wildlife Action Plan, Tomorrow's Habitat for the Wild and Rare (MN DNR 2006), the top two factors influencing the vulnerability or decline of SGCN in the Chippewa Plains subsection, and statewide, are habitat loss and habitat degradation.

Within the Chippewa Plains subsection, 52% is in private ownership, 45% is public land, and 3% is tribal; Lake Bemidji State Park (only a quarter of Itasca State Park is within the Chippewa Plains subsection) and four scientific and natural areas (SNAs) account for only a small percentage of that public land base, the rest of which is mostly timber-managed state forest land (figure 1). Three of the SNAs solely feature peatland communities and the fourth is the Lost 40 SNA, which features plant communities on a narrow peninsula extending from an esker. Expanding protection to the LSCCLA from Itasca State Park would provide greater conservation of biodiversity in an area that has increasing lakeshore development, while not duplicating any of the unique features that already exist in the state parks or SNAs in the subsection. Conservation of native plant and animal diversity, in addition to expanding a natural area for public recreation, whether for canoeing La Salle Creek, fishing, bird watching, or hiking, serve as significant benefits that merit conservation protection action.

An important opportunity exists at the time of this writing to purchase a portion of the LSCCLA, arguably the most significant part. This parcel includes the old-growth cedar swamp, many of the rare features documented in the LSCCLA, and the increasingly rare Jack Pine-(Bush Honeysuckle) Woodland [FDc24a] native plant community. The total acreage of this private property is approximately 1,230 acres and includes all of La Salle Lake, segments of La Salle Creek, and a section of Mississippi River frontage in sections 19, 29, 30, 31, and 32 of Township 145-Range 35 (Fern Township) (see figure 3 for property boundaries). The Trust for Public Land and DNR staff in the Bemidji region have been approached by the realtor and landowners to determine potential interest in acquisition; however, the owners would like to take action on this within the next one to two years. Organizations or state programs that have been suggested to acquire and administer the land include The Nature Conservancy, state scientific and natural areas (SNA), state wildlife management area (WMA), state aquatic management area (AMA), state forest, state park or state recreation area; many of which would be suitable for maintaining the conservation goals outlined in this document. A combination of partnerships may well be the best option, and could prove precedent setting.

For state, county, and private lands adjacent to and within the remainder of the LSCCLA, conservation easements, management agreements, or acquisition should be pursued to ensure uses compatible with managing the area for biodiversity conservation and maintenance of ecosystem function.

In summary, the La Salle Creek and Chain of Lakes Area is a large natural area of regional and statewide significance meriting conservation action. Maintaining biodiversity and the integrity of the exceptional features of LSCCLA, including the noteworthy rare species populations, high-quality native plant communities, and healthy aquatic systems should be the primary goals for the area.

INFORMATION SOURCES

Alverson, W.S., Waller, D.M., and Solheim, S.L. 1988. "Forests Too Deer: Edge Effects in Northern Wisconsin." *Conservation Biology*, Vol. 2, No. 4, pp. 348-358.

Berger, A.L., Zenner, K. E. 2008. Influence of skidder traffic and canopy removal intensities on the ground flora in a clearcut-with-reserves northern hardwood stand in Minnesota, USA. *Forest Ecology and Management* 256, 1785-1794.

Berger, A.L., Puettmann, K.J., Host, G.E., 2004. Harvesting impacts on soil and understory vegetation: the influence of season of harvest and within-site disturbance patterns on clear-cut aspen stands in Minnesota. *Can. J. For. Res.* 34, 2159-2168.

Buckley, D.S., Crow, T.R., Nauertz, E.A., Schulz, K.E., 2003. Influence of skid trails and haul roads on understory plant richness and composition in managed forest landscapes in Upper Michigan, USA. *For. Ecol. Manage.* 175, 509-520.

Côté, S.D., Rooney, T.P., Tremblay, J., Dussault, C., Waller, D. M. 2004. Ecological Impacts of Deer Overabundance. *Annual Review of Ecology, Evolution, and Systematics*, Vol. 35, Pages 113-147

Frelich, L.E., C.M. Hale, S. Scheu, A.R. Holdsworth, L. Heneghan, P.J. Bohlen, and P.B. Reich. 2006. Earthworm invasion into previously earthworm-free temperate and boreal forests. *Biological Invasions* 8:1235-1245. www.minnesotawormwatch.org/research/publications.html. (January 27, 2010)

Hale, C.M. 2004. *Ecological consequences of exotic invaders: interactions involving European earthworms and native plant communities in hardwood forests*. PhD dissertation. University of Minnesota, Department of Forest Resources, St Paul, MN. www.minnesotawormwatch.org/research/publications.html. (January 27, 2010)

Hobbs, H.C. and J.E. Goebel. 1982. Geologic map of Minnesota, Quaternary geology, scale 1:500,000. State Map Series 1, Minnesota Geological Survey, St. Paul, Minnesota.
Institute for Minnesota Archaeology. 1999. "From Site to Story: The Upper Mississippi's Buried Past." <http://www.fromsitetostory.org/> (November 25, 2009).

Marschner, F.J. 1974. The original vegetation of Minnesota, a map compiled in 1930 by F.J. Marschner under the direction of M.L. Heinselman of the U. S. Department of Agriculture, Forest Service. Map scale 1:500,000. St. Paul, Minnesota: Cartography Laboratory of the Department of Geography, University of Minnesota.

Minnesota Department of Natural Resources. 2000. Ecological Classification System for Minnesota. <http://www.dnr.state.mn.us/ecs/index.html> (December 15, 2009).

Minnesota Department of Natural Resources. 2003. *Field guide to the native plant communities of Minnesota: the Laurentian Mixed Forest Province*. St. Paul: Ecological Land Classification Program, Minnesota County Biological Survey, and Natural Heritage and Nongame Research Program. MN DNR.

Minnesota Department of Natural Resources. 2004. *Statewide Natural Heritage conservation status ranks (S-ranks) for native plant community types in Minnesota*. Natural Heritage and Nongame Research Program and Minnesota County Biological Survey. Minnesota Department of Natural Resources. Unpublished draft document.

Minnesota Department of Natural Resources. 2006. *Tomorrow's Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife, Comprehensive Wildlife Conservation Strategy*. Division of Ecological Resources, Minnesota Department of Natural Resources.

Minnesota Department of Natural Resources, Division of Ecological Resources. 2008. "Rare Species Guide: An online encyclopedia of Minnesota's rare native plants and animals" [Web Application]. Minnesota Department of Natural Resources, St. Paul, Minnesota. www.dnr.state.mn.us/rsg (January 8, 2010).

Mou, P., Fahey, T.J., Hughes, J.W.. 1993. Effects of soil disturbance on vegetation recovery and nutrient accumulation following whole-tree harvest of a northern hardwood ecosystem. *J. Appl. Ecol.* 30, 661–675.

Plevan, A., and S. Heiskary. 2001. *Status and Trend Monitoring Summary for Beauty Lake (29-0292) and Lower LaSalle Lake (29-0309), Hubbard County, 2000*. Environmental Outcomes Division, Minnesota Pollution Control Agency. <http://www.pca.state.mn.us/publications/reports/lar-29-0292.pdf> (December 22, 2009).

Minnesota Pollution Control Agency (MPCA). 2004. Environmental Data Access: Lake Monitoring Program, La Salle Lake 2001 and 2004. <http://www.pca.state.mn.us/data/eda/STresults.cfm?stID=29-0309&stOR=MNPCA1> (January 19, 2010).

Monson, M. P., and R. W. Holzenthal. 1993. "A new species and new records of *Oxyethira* (Trichoptera: Hydroptilidae) from Minnesota." *Journal of the American Benthological Society* 12:438-443.

Rundell, Paul. 1978. *A Taxonomic Assessment of Sundog Center: Hubbard County, MN*. SNA Staff Report. Unpublished document.

USDA-NRCS. 1998. Soil Survey of Hubbard County, Minnesota.

Wright, H.E., Jr. 1972. Quaternary history of Minnesota. In *Geology of Minnesota: A Centennial Volume*. *Minnesota Geological Survey*.



La Salle Creek



Middle La Salle Lake – looking south



FDe23a Jack Pine – (Yarrow) Woodland, east side of La Salle Creek



Northern White Cedar Swamp, north of CSAH 9



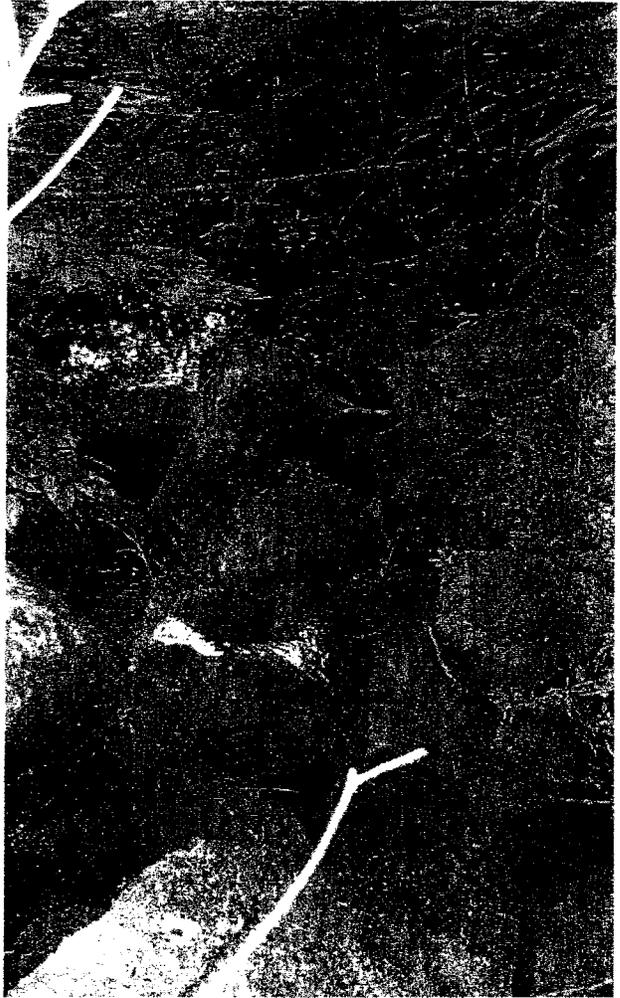
DNR Designated Old-growth red pine (FDe34a), east side of unnamed lake



Unnamed Lake in southern La Salle Creek area



Mixed-deciduous forest on west side of La Salle Lake (FDn33a2)



Creek flowing from drainage valley, west side of La Salle Lake



Ram's-head orchid (*Cypripedium arietinum*)



La Salle Lake, looking south from dock on north shore

Figure 1: Ecological Subsections with State Parks and Scientific & Natural Areas

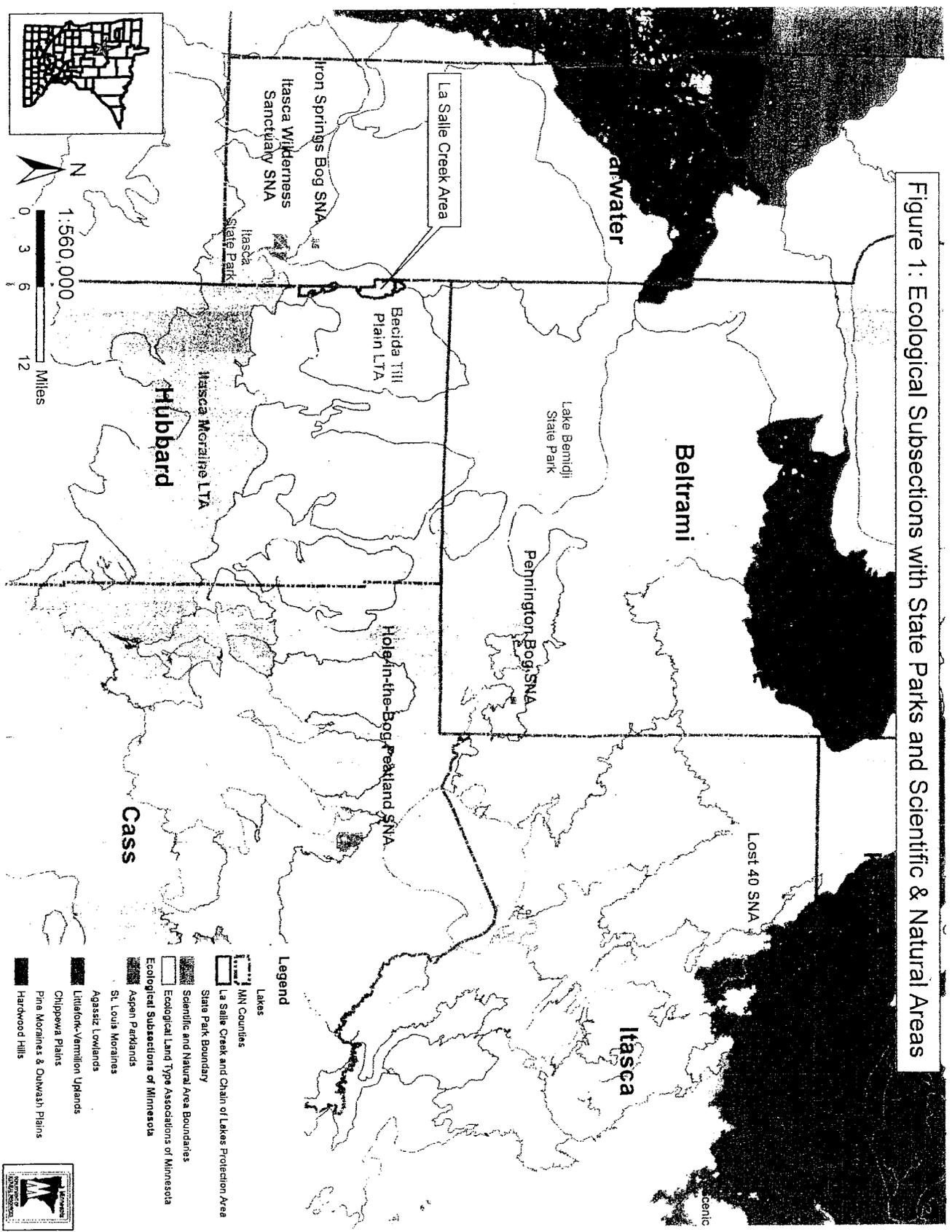


Figure 2: Location of La Salle Creek and Chain of Lakes

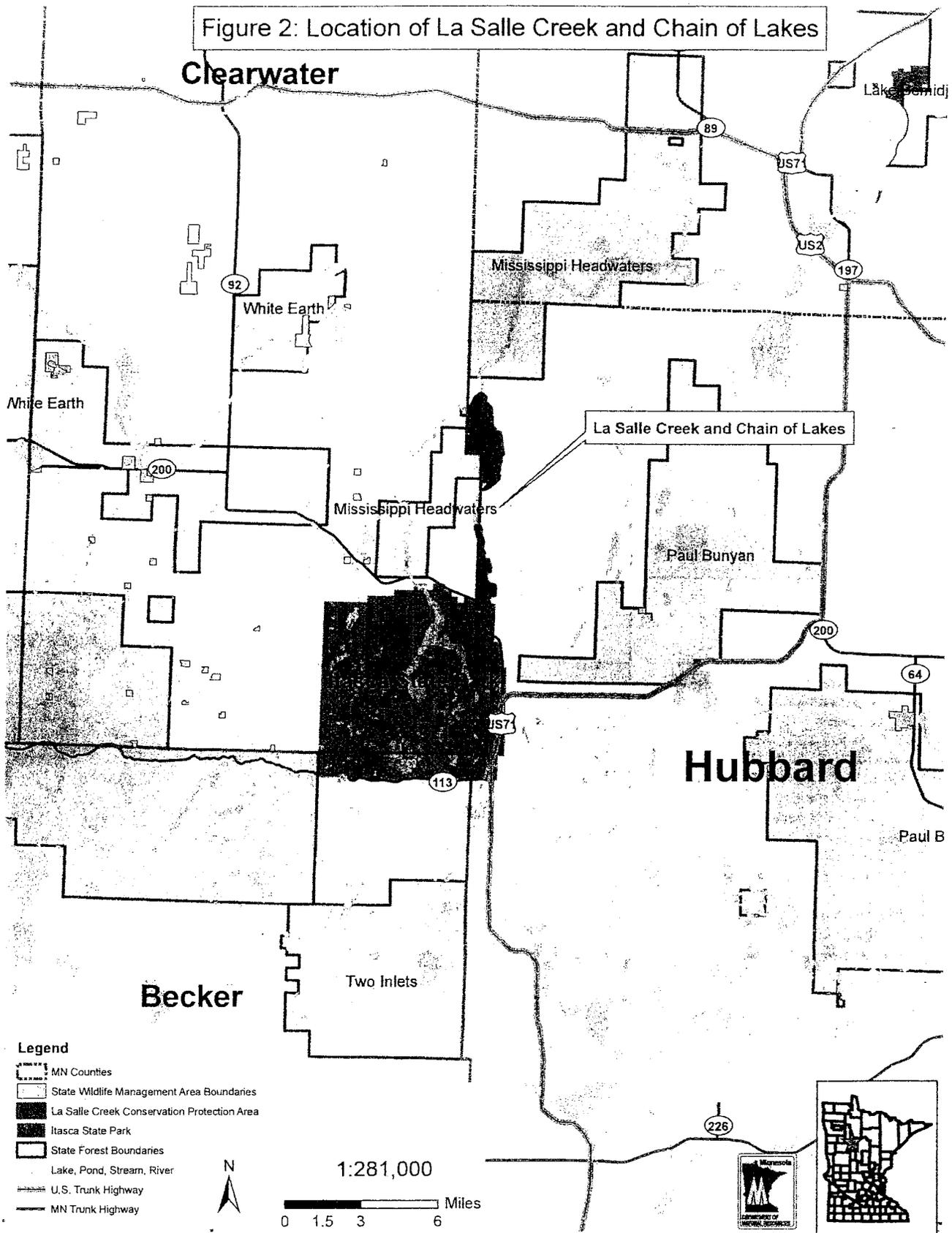


Figure 3: Major Ownership of La Salle Creek and Chain of Lakes Area

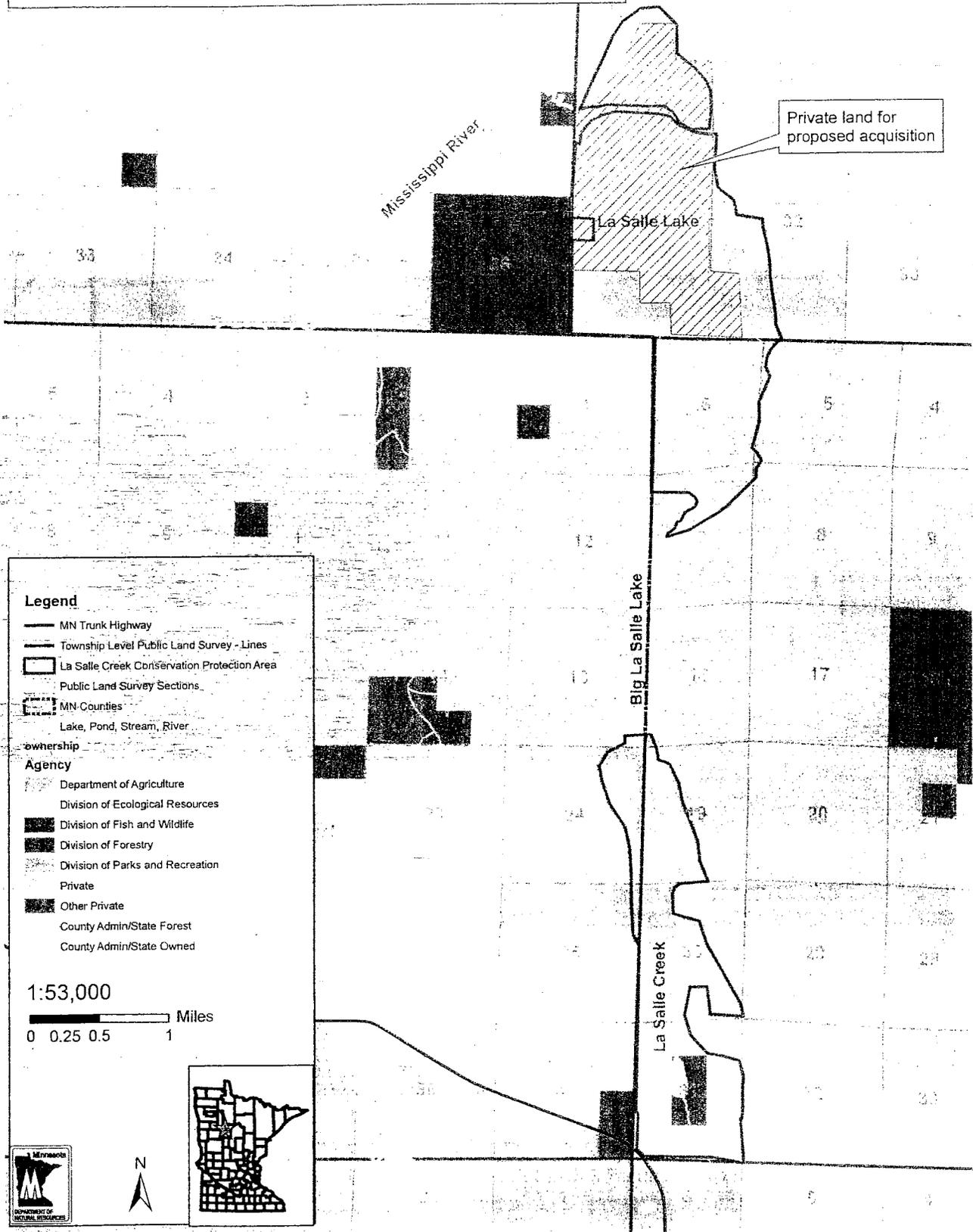


Figure 4: Topographic (USGS 7.5 minute) Map of La Salle Creek and Chain of Lakes Area
Contour Interval = 10 ft

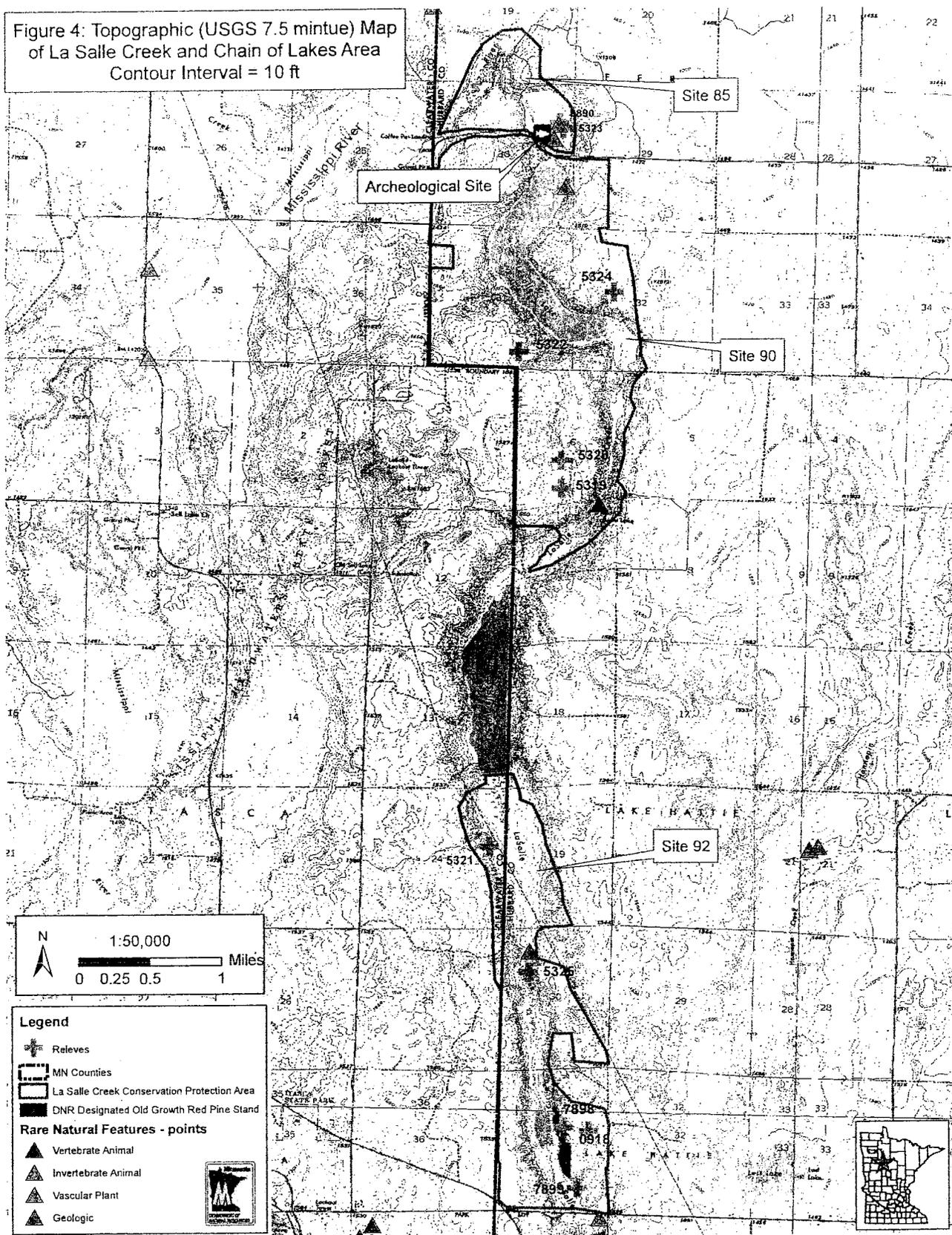


Figure 6: Native Plant Communities of La Salle Creek and Chain of Lakes Area, South

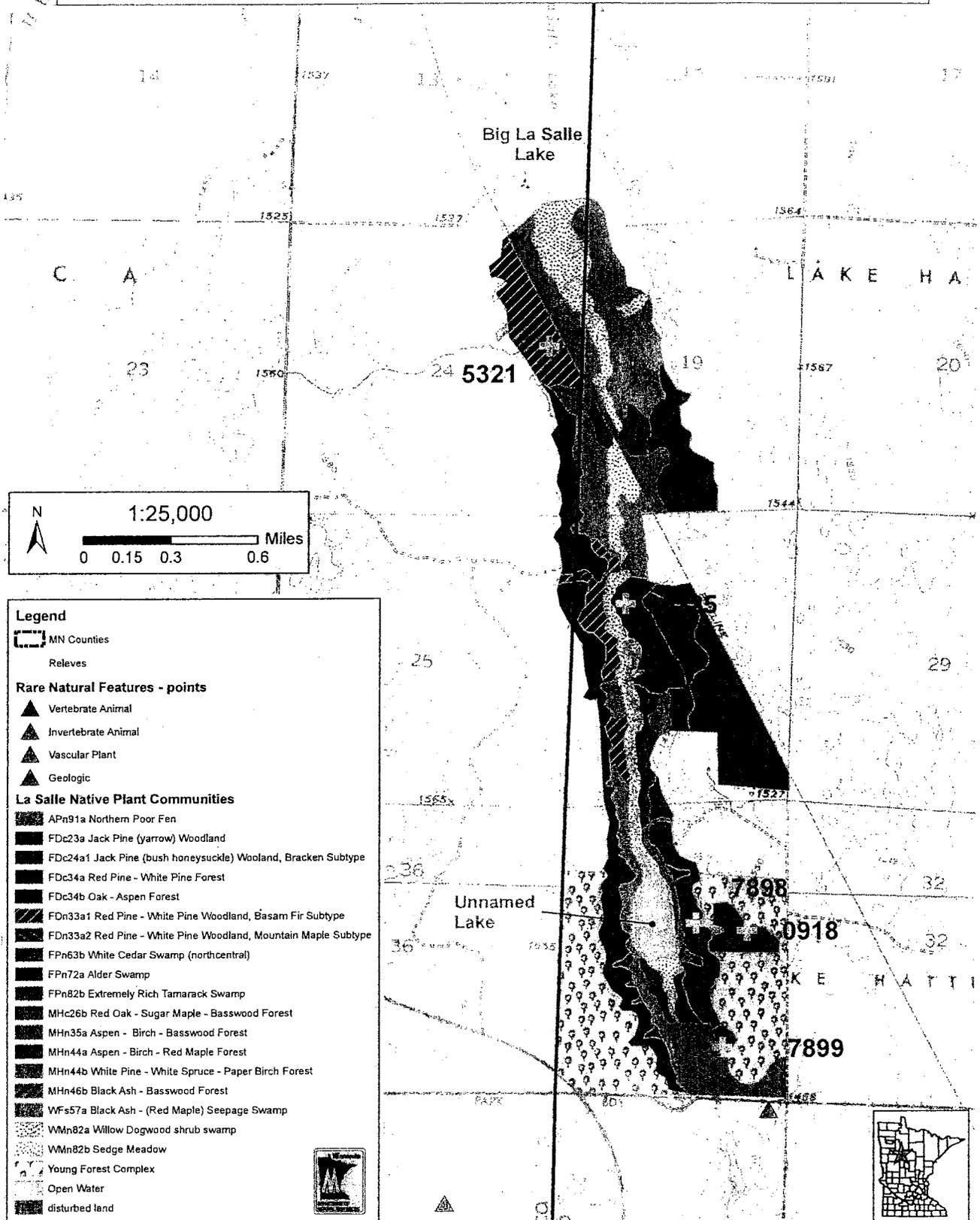
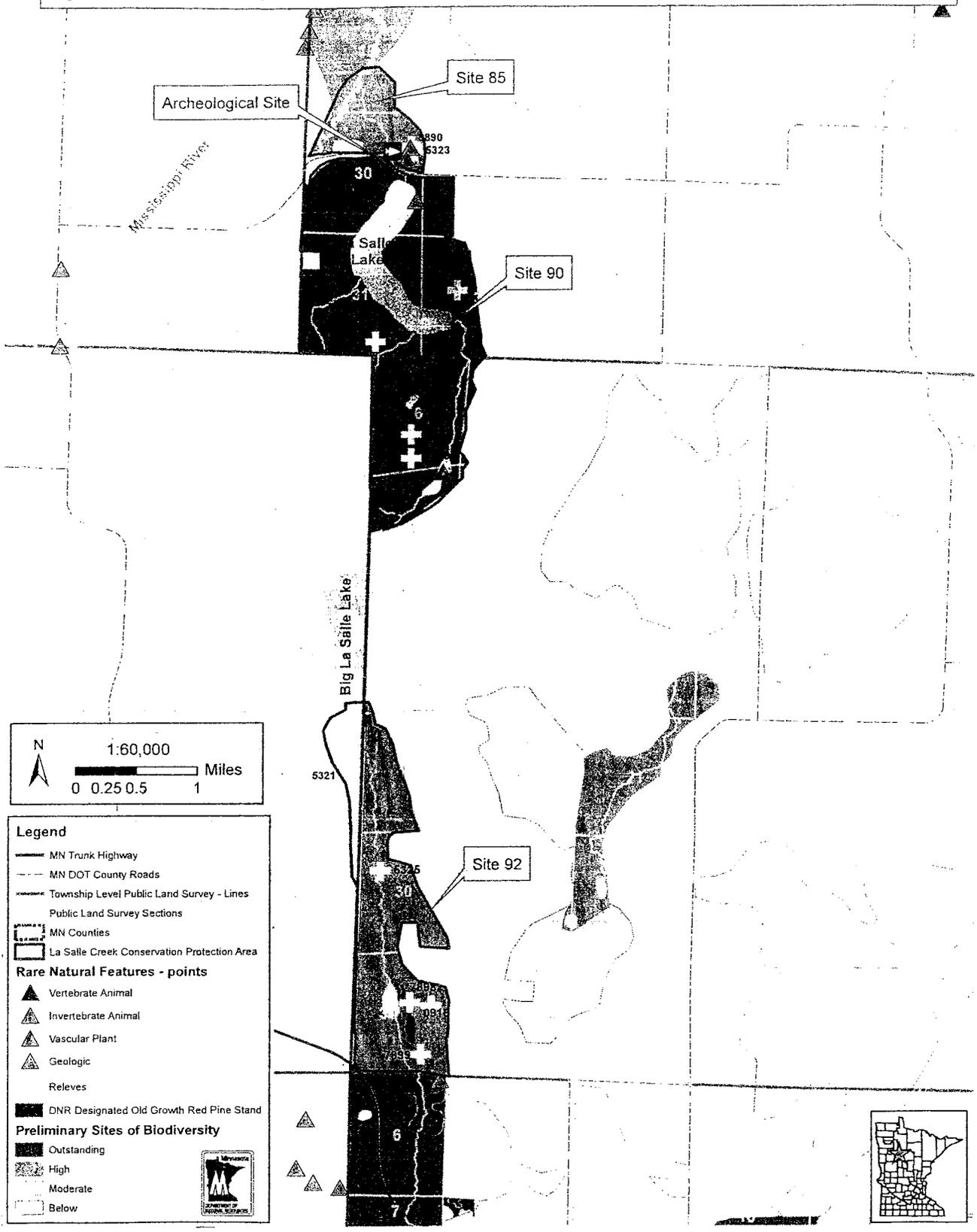


Figure 7: Hubbard County Sites of Biodiversity Significance in the La Salle Creek and Chain of Lakes Area



APPENDIX A:

Element (rare features) Summary for La Salle Creek and Chain of Lakes Area

Native Plant Communities		Status ¹	Rank ²	Acres
FDn33a1	Red Pine – White Pine Woodland (<i>Balsam Fir Subtype</i>)	S3	A-B	85
FDn33a2	Red Pine – White Pine Woodland (<i>Mountain Maple Subtype</i>)	S3	AB	16
FDc23a	Jack Pine – (Yarrow) Woodland	S1	AB	34
FDc24a1	Jack Pine – (Bush Honeysuckle) Woodland (<i>Bracken Subtype</i>)	S1	B-BC	172
FDc34a	Red Pine – White Pine Forest	S2	A-B	268
FDc34b	Oak – Aspen Forest	S3	BC	70
MHn35a	Aspen-Birch-Basswood Forest	S4	AB	58
MHn44a	Aspen – Birch – Red Maple Forest	S4	B	40
MHn44b	White Pine – White Spruce – Paper Birch Forest	S2	A-B	140
MHn46b	Black Ash – Basswood Forest	S4	B	10
MHc26b	Red Oak – Sugar Maple – Basswood – (Large-flowered Trillium) Forest	S4	AB-C	775
Wfs57a	Black Ash – (Red maple) Seepage Swamp	S1S2	A-BC	140
FPn63b	White Cedar Swamp (Northcentral)	S3	B	35
FPn82b	Extremely Rich Tamarack Swamp	S4	AB	18
APn91a	Low Shrub Poor Fen	S5	-	2
WMn82a	Willow – Dogwood Shrub Swamp	S5	A-B	126
WMn82b	Sedge Meadow	S4S5	A-B	87

Rare Plants	Status ³	Rank	# Occur. ⁴
Ram's head lady slipper (<i>Cypripedium arietinum</i>)	THR	B	1
Hair-like sedge (<i>Carex capillaris</i>)	NON		1
Northern oak fern (<i>Gymnocarpium robertianum</i>)	pSPC	AB	1

Rare Animals	Status ³	Rank	# Occur. ⁴
<i>Oxyethira itascae</i>	SPC	-	1
<i>Oxyethira ecornuta</i>	SPC	-	1
Trumpeter Swans (<i>Cygnus buccinator</i>)	THR	-	1

¹ State ranks for native plant communities are determined by the Natural Heritage and Nongame Wildlife Research Program and do not carry legal status: S1=Critically Imperiled, S2=Imperiled, S3=Rare or uncommon, S4=Widespread, abundant, and apparently secure, but with cause for long-term concern, S5=Demonstrably widespread, abundant, and secure.

² Ecological quality rank where A=highest quality and D=lowest quality (ranges and multiple ranks indicate multiple occurrences)

³ For rare species defined by Minnesota Statutes: THR = Threatened, SPC = Special Concern, pSPC = proposed Special Concern, NON = no legal status but tracked in Natural Heritage Information System

⁴ Number listing refers to number of occurrences recorded in the LSCCLA.

**Appendix B: Minnesota County Biological Survey List of Aquatic Plant
Species Observed at LaSalle Lake and Big La Salle Lake**

**Minnesota County Biological Survey
List of Plant Species Observed at
LaSalle Lake**

Survey Id: 1318

Lake Number: 290309 Survey Date: 7/24/2006 Surveyed by: Karen M Myhre
County: Hubbard T: 145N R: 35W Sec: 30 USGS Quadrangle: La Salle Lake
Major/Minor Watersheds: /

Located 30 miles northwest of the town of Park Rapids.

Area surveyed: north end of the lake.

Rank -Outstanding- Large (223 acre), mainly undeveloped lake. Mineral precipitate on plants.
Grey, silt over sand bottom; aquamarine-colored water. Chara base. Pristine water clarity.
Beautiful lake. Excellent preservation target: public land and one owner.

Submersed Plants (Plants with most leaves growing beneath the water surface)

<i>Ceratophyllum demersum</i>	Coontail
* <i>Elodea canadensis</i>	Canadian waterweed
<i>Heteranthera dubia</i>	Water Stargrass, Mud Plantain
<i>Hippuris vulgaris</i>	Mare's-tail
<i>Myriophyllum sibiricum</i>	Northern Watermilfoil
<i>Najas flexilis</i>	Bushy Pondweed, Common Naiad
<i>Potamogeton friesii</i>	Fries' Pondweed
<i>Potamogeton richardsonii</i>	Claspingleaf Pondweed
<i>Potamogeton zosteriformis</i>	Flatstem Pondweed
<i>Stuckenia pectinata</i>	Common Sago Pondweed
<i>Utricularia vulgaris</i>	Greater bladderwort

Free-floating Plants (Plants that float freely on the water surface)

<i>Lemna turionifera</i>	Turion-forming Duckweed
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Floating-leaf Plants (Plants with leaves that float on the water surface)

<i>Nymphaea odorata</i> ssp. <i>tuberosa</i>	White Water Lily
--	------------------

Emergent Plants (Plants with leaves extending above the water surface)

<i>Equisetum fluviatile</i>	Water horsetail
<i>Sagittaria latifolia</i>	Broad-leaved Arrowhead
<i>Schoenoplectus acutus</i> var. <i>acutus</i>	Hard-stem bulrush
<i>Schoenoplectus tabernaemontani</i>	Soft-stem bulrush
<i>Sparganium</i> sp.	Burreed
<i>Typha latifolia</i>	Broad-leaved cattail

Shoreline Plants (Plants associated with the wetland habitat)

<i>Campanula aparinoides</i>	Marsh Bellflower
<i>Cicuta bulbifera</i>	Bulb-bearing water-hemlock
<i>Eleocharis</i> sp.	Spike-Rush
<i>Eutrochium maculatum</i>	Spotted Joe-pye weed
<i>Lysimachia thyrsoiflora</i>	Tufted loosestrife

* specimen to be deposited at University of Minnesota Herbarium

**Minnesota County Biological Survey
List of Plant Species Observed at
Big LaSalle Lake**

Survey Id: 1317

Lake Number: 150001 Survey Date: 7/24/2006 Surveyed by: Karen M Myhre
County: Clearwater T: 144N R: 36W Sec: 13 USGS Quadrangle: La Salle Lake
Major/Minor Watersheds: /

Located 27 miles northwest of the town of Park Rapids.

Area surveyed: west shore of the lake.

Rank: High-Large (213 acre), shallow (<10 ft) lake. Grey silt over sand. Some development; stretches of intact, wooded undeveloped shoreline. Mineral encrusted plants. Aquamarine-colored water. Unusual species composition; not diverse. Cobble shore.

Submersed Plants (Plants with most leaves growing beneath the water surface)

<i>Ceratophyllum demersum</i>	Coontail
<i>Hippuris vulgaris</i>	Mare's-tail
<i>Juncus pelocarpus</i> form <i>submerses</i>	Submersed Brown-fruited Rush
<i>Najas flexilis</i>	Bushy Pondweed, Common Naiad
<i>Potamogeton friesii</i>	Fries' Pondweed
<i>Potamogeton illinoensis</i>	Illinois Pondweed
<i>Potamogeton praelongus</i>	White-stemmed Pondweed
<i>Potamogeton richardsonii</i>	Claspingleaf Pondweed
<i>Potamogeton zosteriformis</i>	Flatstem Pondweed
<i>Stuckenia filiformis</i>	Blunt-tipped Sago Pondweed
* <i>Stuckenia pectinata</i>	Common Sago Pondweed
<i>Utricularia vulgaris</i>	Greater bladderwort
<i>Vallisneria americana</i>	Wild Celery, Eel-grass

Floating-leaf Plants (Plants with leaves that float on the water surface)

<i>Nuphar variegata</i>	Yellow Water Lily
<i>Sagittaria cuneata</i>	Floating Leaf Arrowhead

Emergent Plants (Plants with leaves extending above the water surface)

<i>Sagittaria latifolia</i>	Broad-leaved Arrowhead
<i>Schoenoplectus acutus</i> var. <i>acutus</i>	Hard-stem bulrush
<i>Typha latifolia</i>	Broad-leaved cattail

Shoreline Plants (Plants associated with the wetland habitat)

<i>Bidens sp.</i>	Bur-Marigold; Beggar-Tick
<i>Carex hystericina</i>	Porcupine-like Sedge
<i>Cicuta bulbifera</i>	Bulb-bearing water-hemlock
<i>Cicuta maculata</i>	Water-hemlock
<i>Eleocharis sp.</i>	Spike-Rush
<i>Eutrochium maculatum</i>	Spotted Joe-pye weed
<i>Impatiens capensis</i>	Jewelweed, Spotted touch-me-not
<i>Persicaria lapathifolia</i>	Nodding smartweed
<i>Phalaris arundinacea</i>	Reed canary grass
<i>Scirpus microcarpus</i>	Red-tinged bulrush

* specimen to be deposited at University of Minnesota Herbarium

Appendix C: Relevés from La Salle Creek and Chain of Lakes Area

MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM
Department of Natural Resources
500 Lafayette Road
Saint Paul, Minnesota 55155
(651) 259-5100

----- FINAL RELEVÉ REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

DNR Relevé #0918
Surveyor's Relevé #48
Surveyor: **Scott A. Stai (SAS)**
Date: **13 AUG 1992**
CBS Site #0
Site Name: **LaSalle Lake**
DNR Ownership Code: 20
EO Rec #16079
NC Code: **RPXXXX (RED PINE FOREST)**
Community Ranking in Relevé:
Stand typical of Community Type:
Relevé typical of Stand:

LOCATIONAL INFORMATION

State Code: **Minnesota (MN)**
County Code: **Hubbard (29)**
Quad Codes DNR: **J09B Universal: Lake Itasca (47095B2)**
PLSS: **SE NE Section 31 T144N R35W**
Geographic coordinates (NAD27): **47° 14' 53" N, 95° 9' 21" W**

Projected coordinates (UTM 15N meters, NAD83) **336842, 5234980**

RELEVÉ INFORMATION

Relevé Size (m²): **400**
Elevation (ft): **1470**
Slope: **04S**
Slope Position: **LLWL**
ECS Subsection: **Chippewa Plains (9)**
Minnesota Soil Atlas Mapping Unit:
Geomorphic Unit:

Remarks: Mature stand dom by *Pinus resinosa* (>96 yrs). Subcanopy dom by *P. strobus* & smaller *Betula papy* & *Acer rubrum*. Patchy shrub layer. Herb layer sparse, w/ *Carex*, *Aster Macro*. Very low *P. resinosa* regen. Moderate volume coarse woody debris. Cut stumps present (14in 1/10ha). Soils deep silty or loamy, well drained, light colored. Geomorphic region: Itasca Moraine.



Public Comment Sheet

North Dakota Pipeline Company LLC Sandpiper Pipeline Project

PUC Docket No. PL-6668/PPL-07-13-474

PLEASE PRINT CLEARLY

Name: Betty Swanson-Peterson Representing: Myself and neighbors

Email:

Address: 2211 Co. Rd. 5

Tel: 218-384-4490

Carlton

Minn. 55718

COMMENTS

Letter enclosed

Re: Docket number 13-474

RECEIVED

MAR 28 2014

MAILROOM

Please submit comments at meeting to EERA staff or send to:

Larry B. Hartman
Energy Environmental Review and Analysis
Department of Commerce
85 7th Place East, Suite 500
St. Paul, MN 55101-2198

Email: larry.hartman@state.mn.us
Toll Free: 800-657-3794
Voice: 651-538-1839
Fax: 651-539-0109

Electronic Submittal: http://mn.gov/commerce/energyfacilities/publicComments.html?projectId=33599

»»If mailing, fold along dotted line in sequence noted and tape closed ««

Betty Swanson-Peterson
2211 Co. Rd. 5
Carlton, Minn. 55718

March 25, 2014

Dear Mr. Hartman,

I am writing to you with concern in hearing that a pipeline route is planned so close to my home.

Forty-two years ago my husband-to-be took me down a beautiful wooded path and said "this is where ^{we} will build our home. Little by little we cleared the trees and started building our home. It took a few years as we would complete things as we could pay for them.

We raised a family of three surrounded by birch trees, deer, bear, chipmunks and birds. We had a wonderful view on our hill and wonderful memories.

When it came time to retire my husband enjoyed about nine months and then he was diagnosed with a brain tumor. We lost him about seven months later. This is why I treasure our home and property in memory of all he did here, and I don't want to lose it. I want his children and grand-children to be able to enjoy this also. This is the main reason I do not want a pipeline coming close to my home.

Another reason I am against the pipeline is that we have beautiful trails my brother-in-law has made which we use for walking, 4-wheeling and snowmobiling.

I have also been told of the danger of explosions and leaks in the pipeline. A danger to my home and family. The pipeline would be very close, within 225 feet of my front door. The value of my home would decrease with a pipeline so close.

I have read in the paper that once one pipeline is built, they will eventually build another. That might even take my home.

My neighbors and I are proposing a new route to get this route away from our homes. This proposal will be sent separately from this letter. Please consider rerouting around our homes or take the northern route. Thank you.

Sincerely,
Betty Swanson-Peterson

Re: Docket # 13-474

Betty Swanson-Peterson
2211 Co. Rd. 5
Carlton, Minn. 55718

DULUTH MINN 5583

NOV 21 1998



Larry B. Hartman
Energy Environmental Review and Analysis
Dept. of Commerce
85 17th Place East, Suite 500
St. Paul, Minn. 55101-2198

55101+6013



March 26, 2014

Larry B. Hartman, EERA Staff
Department of Commerce
85 – 7th Place East, Suite 500
St. Paul, Mn. 55101-2198

Re: Docket #PL9 / PPL-13-474

Honorable Commissioners:

According to the information meeting we attended on March 13, 2014 in Carlton, we were instructed to submit a neighborhood proposal for greater impact so our neighborhood has joined together to submit a route segment proposal which is outlined on the accompanying aerial photos. We specifically refer to:

Subp. 3 Criteria "In selecting a route for designation and issuance of a pipeline routing permit, the commission shall consider the impact on the pipeline of the following:

- A. "Human settlement, existence and density of populated areas, existing and planned future land use, and management plans"
And
- I. "Cumulative potential effects of related or anticipated future pipeline construction."

Our homes in this neighborhood were all built in the 1970's. So we have lived on our beautifully wooded homesteads for over 40 years. The proposed route for the sandpiper oil pipeline slices through our part of the world between our homes. It greatly affects future building sites for our grandchildren and comes dangerously close to our neighbor Betty Swanson-Peterson's home. Should multiple lines be installed which Enbridge has been quoted in the local media, Betty could no longer live in her home. The clearing of our birch, oak and maple trees would change the aesthetic value of our neighborhood which we cherish and destroy the natural habitat which we enjoy.

Please consider our proposed alternate route segments as indicated on the submitted aerial photos. Both new routes would cross land that is not destined for future homes. Our neighbors welcome the change and we all will benefit from the proposed route. One of our suggested alternative route segments is starting at mile marker 586 of the proposed southern route of the Sandpiper pipeline paralleling Interstate 35, an existing natural gas pipeline and East Central Energy power line corridor "bonding with existing infrastructure" and connecting up with Enbridge's existing northern pipeline corridor. Our other alternate route segment would deviate from the proposed Sandpiper oil pipeline to the southwest of our neighborhood near mile marker 587 and travels around our neighborhood and connects back up to the proposed Sandpiper pipeline near mile marker 588.5 to the northeast.

Nesting this pipeline near Enbridge's existing northern pipeline corridor is the preferred location for the proposed Sandpiper pipeline. This will leave our neighborhoods as serene and beautiful that we have enjoyed for the past years and also preserve **ALL** of the future plans that everyone along the proposed alternate southern route of the Sandpiper pipeline has for their property.

RECEIVED

APR 04 2014

MAILROOM

Please strongly consider our proposals to accommodate our landowner concerns which would least disrupt our serene neighborhood and keep us hopeful about the future of our potential building sites, property values, and the saving of our neighbor Betty Swanson-Peterson's home. We have also included three separate letter's from myself, Stuart, and Betty about how this will affect our own lives. Thank you for your time. If you have any questions, I can be reached at 218-340-9932.

Respectfully submitted,

Susan Karp
2241 County Road 5
Carlton, Mn. 55718

Stuart Swanson
2231 County Road 5
Carlton, Mn. 55718

Joel and Debbie Reed
2237 Nendick Road
Carlton, Mn. 55718

Betty Swanson-Peterson
2211 County Road 5
Carlton, Mn. 55718

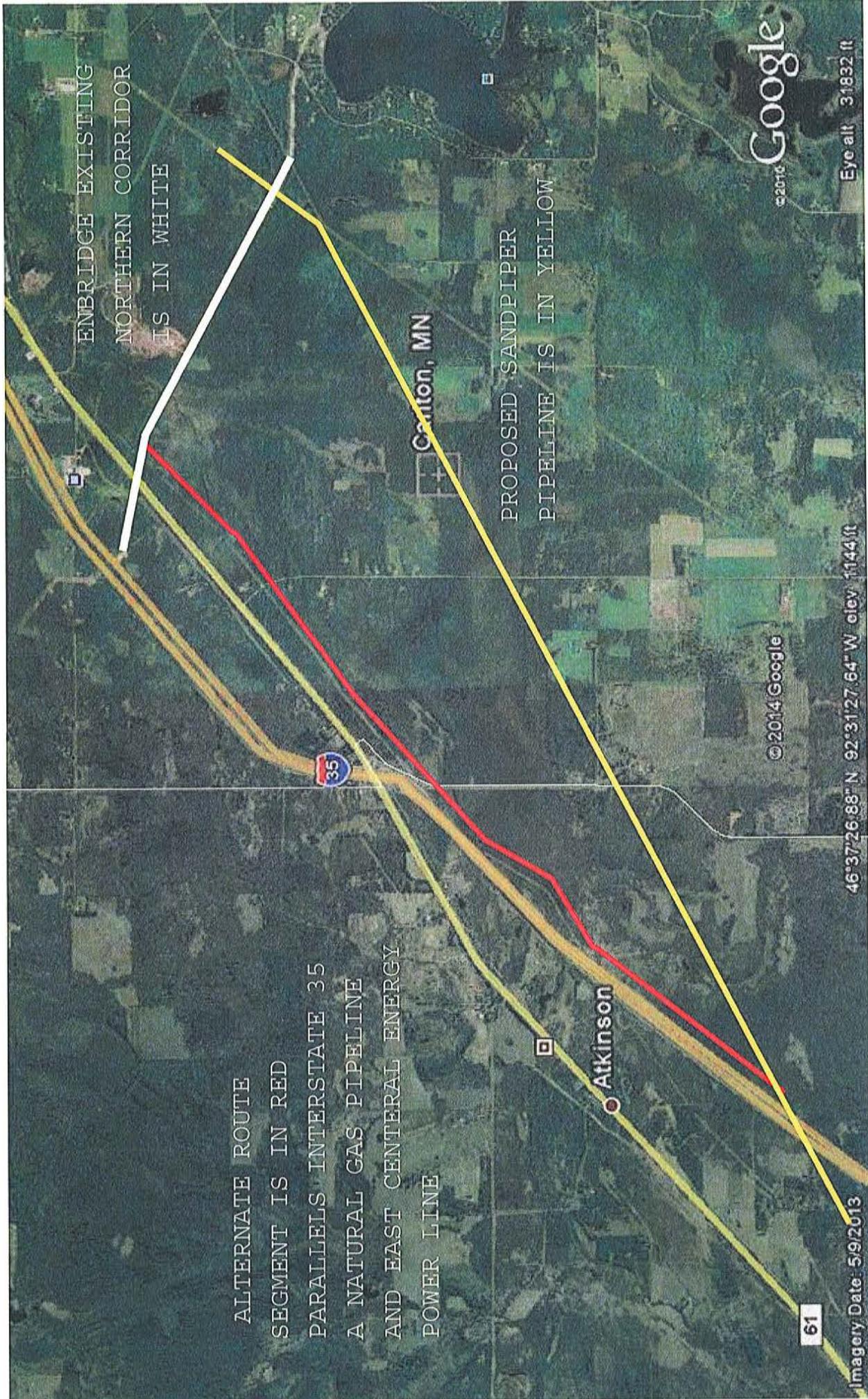
Calvin and Kristi Lindstrom
2245 County Road 5
Carlton, Mn. 55718

Greg and Sherry Reed
2183 County Road 5
Carlton, Mn. 55718

ALTERNATE ROUTE
SEGMENT IS IN RED
PARALLELS INTERSTATE 35
A NATURAL GAS PIPELINE
AND EAST CENTRAL ENERGY
POWER LINE

ENBRIDGE EXISTING
NORTHERN CORRIDOR
IS IN WHITE

PROPOSED SANDPIPER
PIPELINE IS IN YELLOW



©2014 Google
Google

Eye alt 31852 ft

©2014 Google

46°37'26.88" N 92°31'27.64" W elev 1144 ft

61

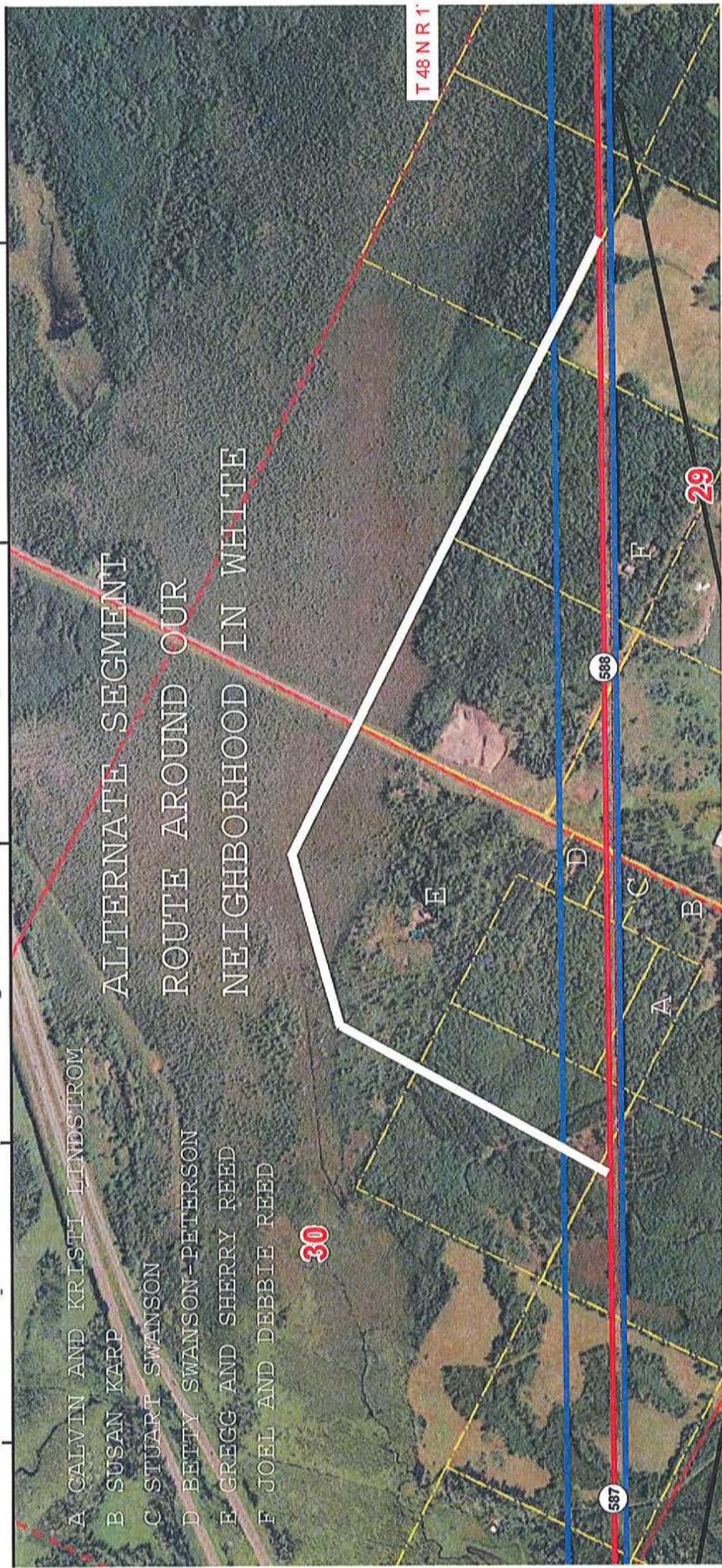
Imagery Date: 5/9/2013

- A CALVIN AND KRISTI LINDSTROM
- B SUSAN KARP
- C STUART SWANSON
- D BETTY SWANSON-PETERSON
- E GREGG AND SHERRY REED
- F JOEL AND DEBBIE REED

ALTERNATE SEGMENT
ROUTE AROUND OUR
NEIGHBORHOOD IN WHITE

30

T 48 N R 1



Susan M. Karp
2241 County Road 5
Carlton, MN 55718

March 26, 2014

Larry B. Hartman, EERA Staff
Department of Commerce
85 – 7th Place East, Suite 500
St. Paul, Mn. 55101-2198

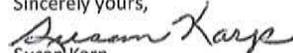
Re: Docket PL9 / PPL-13-474

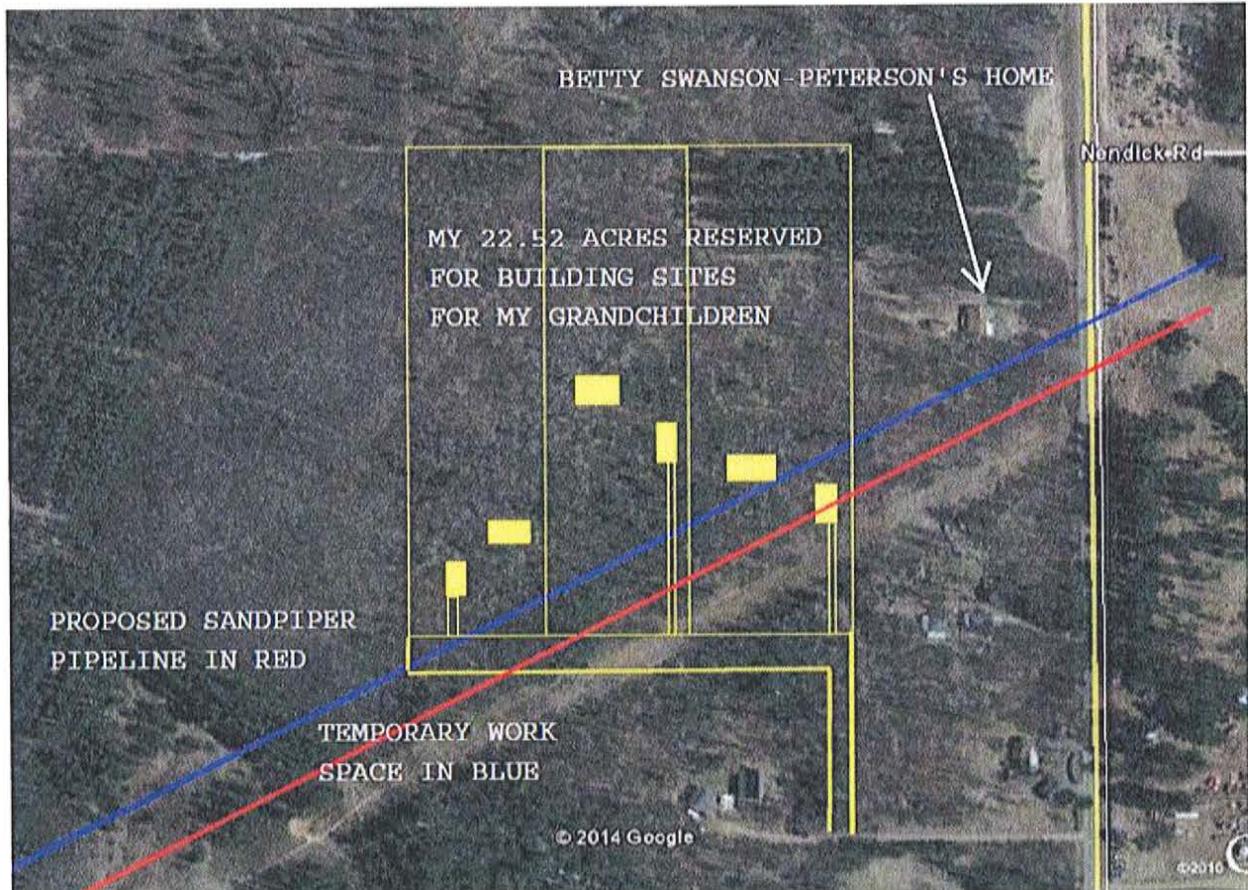
Honorable Commissioners:

The proposed location of the sandpiper oil pipeline alongside the electric transmission line near mile marker 588 of the Sandpiper goes close to my homestead located on 2.3 acres. It also goes through another 21.52 acres of my Residential Homestead Property mostly located on the north side of the proposed pipeline. This is a prime location for 2 to 3 building sites which I have invested in for my grandchildren to build their home on in the future. A road would need to be built over the proposed Sandpiper pipeline to reach these sites. Without a road, these building sites could not exist and the value of my land would greatly diminish. Please see the attached map on the following page.

I strongly urge you to consider one of the two alternate routes to the north as indicated in the attached maps which would have minimal effects on the destruction of my property and the future of our neighborhood.

Sincerely yours,


Susan Karp



Stuart P. Swanson
2231 County Road 5
Carlton, Mn. 55718

March 16, 2014

Larry B. Hartman
EERA Staff
Department of Commerce
85 – 7th Place East, Suite 500
St. Paul, Mn. 55101-2198

Re: Docket #PL9/PPL-13-474

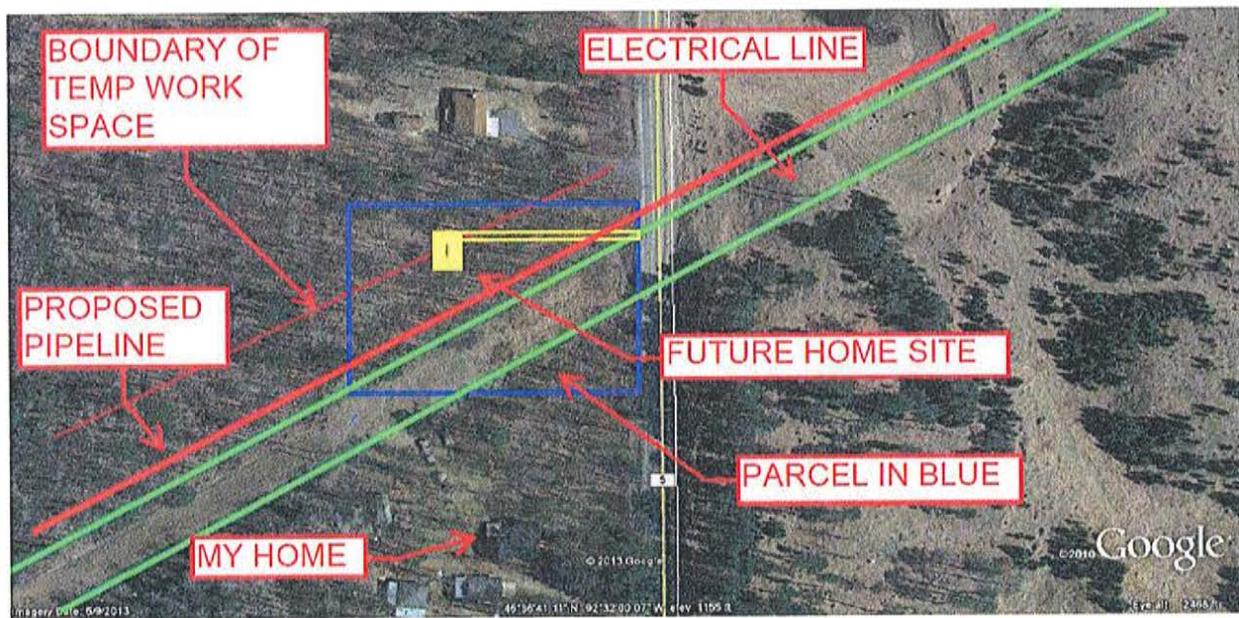
Honorable Commissioners:

The proposed location of the Sandpiper oil pipeline alongside the electrical transmission line near mile marker 588 of the Sandpiper goes close to my homestead located on 2.5 acres. It also goes through another 2.5 acres of vacant wooded land. This is a prime location which I have plans for construction of a house. Should this oil pipeline be approved in this location, there would not be sufficient room to construct a house with the well and sewer system. The property value would go from \$40,000 to 0!!!

I would appreciate consideration of an alternate route to the north which would have minimal effect on future financial opportunities, wildlife, aesthetic values and from sole by my stand point, not destroying my home building site.

Sincerely yours


Stuart Swanson



Betty Swanson-Peterson
2211 County Road 5
Carlton, MN 55718

March 28, 2014

Larry B. Hartman, EERA Staff
Department of Commerce
85 - 7th Place East, Suite 500
St. Paul, MN 55101-2198

Re: Docket PL9 / PPL-13-474

Honorable Commissioners:

This proposed pipeline will be within 215 feet of my house. I am very concerned for my safety with this oil pipeline being that close. I have heard a lot in the news about how volatile this light crude oil is and how explosive it can be. I will always have to be worried about that with this line being that close to my home. I also heard that future lines are coming, which would be even closer to my house. That is also a concern for me. I have lived here for 40 years and do not want to lose my house due to future pipelines along this proposed route. Also I feel that my house and property value will be greatly reduced with the initial pipeline and future pipelines. Please consider the alternate routes that we have provided. Thank you for your time.

Sincerely,

Betty Swanson-Peterson
Betty Swanson-Peterson

Betty's Home

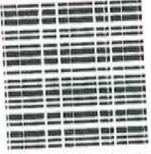


Proposed Pipeline

55718 MN

Larry Hartman, EERA Staff
Dept. of Commerce
85 7th Place East, Suite 500
St. Paul, MN 55101-2198

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From: John Sylvester [mailto:jsylvester@mnmsba.org]
Sent: Thursday, March 27, 2014 12:20 PM
To: Hartman, Larry (COMM)
Subject: Sandpiper Pipeline

To Whom It May Concern:

As a lake property owner in Fifty Lakes, MN (Cass County), I wish to formally express my opposition to the granting of a routing permit for Enbridge Energy's proposed Sandpiper Pipeline. My primary concerns center around the fact that (1) no environmental impact study needs to be completed and (2) that Enbridge Energy's safety record is less than stellar (23 major spills exceeding 10,000 gallons in Minnesota alone). My expectation is to pass my lake property down to my children and grandchildren when I die, so I want to do all I can to preserve that property. Please, at a minimum, take the time to very carefully weigh your decision in this matter.

Thank you for your consideration.

John Sylvester
Deputy Executive Director
Minnesota School Boards Association
507-934-2450; 800-324-4459
jsylvester@mnmsba.org



[Website](#)



[Facebook](#)



[Twitter](#)

The contents of this e-mail and any attachments are provided for informational use only and are not to be construed as legal advice. If you need legal advice, contact your legal counsel.

From: Dennis Szymialis [mailto:shrimpshadow@hotmail.com]
Sent: Monday, March 31, 2014 6:54 PM
To: Hartman, Larry (COMM)
Subject: CommentsPUCDocket#PL-6668/PPL13-474

Sandpiper Pipeline comments

PUC Docket Number PL-6668/PPL-13- 474

I am writing these comments as a graduate of the University of North Dakota School of Law having taken a course in Oil and Gas Law taught by Owen Anderson who now teaches at the University of Oklahoma which is probably the most prestigious Oil and Gas Law School in the world. As a student of Owen Anderson I believe that I have insight into Oil and Gas policy not possessed by the average person.

First, I am writing regarding the situation in North Dakota and elsewhere involving the flaring of natural gas in the Bakken oil field formation. The flaring of 100 million dollars of gas is a horrible and needless waste caused by the greed of the oil operators and unrestricted regulation of the industry. In the 1920's and 30's unrestricted oil field development lead to spacing and other regulations for the drilling of oil to conserve the oil resource and extraction infrastructure.

It is within the regulatory authority of government to enact regulations for the conservation of oil resources. Although, Enbridge operates as an oil pipeline company it should come within the regulatory authority of government whose responsibility it is to use its authority for the conservation of hydrocarbon resources. The course I was taught in law school was oil and gas law, the two are extracted together and have been regulated jointly.

The issue that needs to be addressed is the relationship between the two that determines the fate of gas being flared and its relationship the oil extraction and shipping which is used as a excuse for gas flaring. The greed involved involves oil companies taking advantage of attempting to get the most profit in the shortest period of time. The revenue remains, it is the timing that is the variable. The public need to Minnesota does not exist to depress prices in the short run or to ship the oil to other jurisdictions that either have undeveloped oil resources or can get them from other sources. Indiana has it's own oil.

The accelerated drilling that is being done in the Bakken in North Dakota alone has resulted in an increase in the flaring of natural gas from 3% in 1999 to more than 30% today. This occurs because the speed of development of the resources through drilling leaves inadequate time and resources to add gas pipelines to recover that resource. Furthermore, natural gas is a competitor to the oil produced in at least some respects which encourages its burning by oil companies. The burning of gas should be considered a form of larceny. The burning of the gas deprives royalty owners of compensation and the State of North Dakota production taxes.

A recent lawsuit brought by royalty owners in North Dakota to recover compensation for burned gas is likely to turn in their favor. Amounts recovered by the royalty owners are likely to be passed on to consumers. In addition to increased oil prices incurred by industry greed are the increased gas prices from taking a hundred million dollars worth of gas per month for an indefinite period of time off of the natural gas market. In fact consumers are hurting from the wasting as has been indicated by Mark Dayton and other politicians. As a result of the wasting we are experiencing a shortage of propane which is a component of natural gas. This wasting has put a stress on the finances of large numbers of Minnesotans.

Jane Reyer eloquently explained the difference between needs and wants in her oral testimony. Enbridge might want more oil production but no one else needs it. All that needs to be done to preserve a hundred million dollars worth of natural gas per month is to slow down the drilling and shipping of oil. This can easily be done without jeopardizing any ones interest by forcing an absolute moratorium or apportioning oil production in wild cat areas of exploration and drilling. Drilling would be justified on a first come first served basis and would mitigate the most losses in these areas not served by gas pipeline infrastructure and most at risk for flaring. Most people would be happy with preserving natural gas and not even feel a want for more oil. The hierarchy of need goes from need to want to waste. Waste is the end of the line and leads to the reality of waste not- want not. If we stop wasting we will not only stop needing we will stop wanting oil. It is ambiguous as presented by Enbridge what the need actually is. Preservation of hundred of millions of dollars in natural gas would fuel thousands of natural gas powered vehicles and spurn countless jobs.

Minnesota needs the natural gas being needlessly wasted, Enbridge wants to increase their shipping capacity for oil. If this is not clear it is only because Enbridge is being selective or ambiguous in expressing their wants. Enbridge clearly has failed in proving that they have a need to increase the capacity of their oil pipeline capacity. No more oil from the Bakken should be shipped through their lines until problems that they have created through an overreaching attempt to increase their market share in oil shipping are remedied.

Consider, for example, that one of the main reasons that people around the world hate U.S. citizens is our propensity for waste and that 100 million dollars in resources are being wasted in one industry in our least populated state. Consider further, for example that Minnesota and Wisconsin ship 15% of the nations oil and North Dakota is the second leading producer and yet these three states pay the highest gas prices in the country. Production and shipping for whose benefit?

Dennis Szymialis
807 Voss Avenue
Duluth MN 55806