Appendix D

Wetland Studies

D-1

Wetland Delineation Report

Wetland Delineation Report

Kennecott Minerals Company
Eagle Project
Marquette County, Michigan

Prepared for:

Golder Associates Inc.

Prepared by:



September, 2005

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SUMMARY

Wetland and Coastal Resources, Inc. (WCR) was contracted by Golder Associates, Inc. (Golder) to perform wetland delineations on 1360 acres within a 1600 acre project study area located northwest of Marquette, MI. Wetland and Coastal Resources, Inc. conducted field assessments and delineations on 1360 acres of the study area during the growing season.

Twenty-six wetland areas were delineated using over 8,000 delineation flags. The wetlands ranged from expansive systems associated with the Salmon Trout and Yellow Dog Rivers to small, isolated wetlands impacted by timbering activities. Based on discussions with Golder, no wetlands are present within the area of proposed mining surface facilities.

1.0 INTRODUCTION

Kennecott Minerals Company (Kennecott) discovered a high-grade nickel and copper deposit approximately 28 miles (45 kilometers) northwest of Marquette in Michigan's Upper Peninsula. The discovery is known as the Eagle Project. Since this discovery, economic, engineering and environmental evaluations were initiated to determine the potential for developing an operating mine.

The purpose of this evaluation is to collect baseline environmental data and to document existing conditions. Furthermore, the purpose of collecting these data is to provide sufficient information to support future mine facility alternative analysis and design, environmental permitting, and potential project impact analysis.

Golder Associates Inc. (Golder) was chosen as the prime consultant to manage the environmental baseline study programs. On February 6, 2004, Golder authorized Wetland and Coastal Resources, Inc. (WCR) to perform baseline environmental studies including assessments for wetlands, wildlife, aquatic organisms and habitats, and threatened and endangered species. This report presents the findings of WCR's wetland delineations. Results of wildlife, aquatic, and threatened and endangered species reviews are presented in separate reports.

The work conducted on this site and the content of this report represent the opinions of WCR. Wetlands were delineated based on criteria and technical guidance developed by State of Michigan wetland regulatory agencies and set forth in State wetland statutes; however, the State of Michigan, Department of Environmental Quality (MDEQ), has the final authority as to the location of wetland boundaries and regulation of those wetland areas.

1.1 Project Area

Kennecott currently controls more than 1600 acres of mineral and surface rights in the project area. The project area is located in Sections 2, 3, 10, 11, 12, 14, 15, T50N, R29W of Michigamme Township, Marquette County, within the Yellow Dog Plains at the headwaters

of the Salmon Trout River. The study area consists of 1360 acres within the project area. **Figure 1.1 of Appendix A** shows the boundaries of the project area and study area.

1.2 Project Purpose

The purpose of conducting the wetland delineations was to identify the approximate size and location of wetlands and to provide field flagging for survey of boundaries, if necessary. This report is being presented to Golder to utilize as part of environmental assessment to assist in developing and assessing project alternatives.

2.0 METHODS

2.1 Field Preparation

Prior to field investigations, WCR reviewed available information to provide initial direction and focus for field assessments. The United States Department of Agriculture (USDA) Soil Survey information for Marquette County and United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps were reviewed to identify potential wetland areas. Field maps were produced by overlaying hydric soil units and wetland areas, as shown in the soil survey and wetland maps, with land features on 1998 MDNR aerial photography. These maps were used to aid field biologists in identifying the approximate location and size of potential wetland complexes within the study area. Wetland and Coastal Resources also utilized its library of wetland delineation and assessment reference articles and books including Gleason and Cronquist (1991), Holmgren (1998), and Voss (1972, 1985 and 1996).

2.2 Field Assessment

Two Professional Wetland Scientists from WCR delineated all wetland boundaries in the spring and summer of 2004. Delineations were completed by placing high visibility glow-pink flagging tape at the upland/wetland interface. Flags were sequentially lettered and numbered and the approximate location of each wetland was sketched on aerial photographs.

Delineation methodology was based on statutory language and rules found in Part 303, Wetland Protection, of the Natural Resource and Environmental Protection Act, 1994 PA 451, as amended (NREPA), and guidance manuals and procedures set forth by the MDEQ for delineating wetlands in Michigan.

These methods identify wetland boundaries based on the following:

- Predominance of wetland vegetation
- Visual signs of hydrology
    - Buttressed root systems

  - Hummocked ground surface
  - Dark stained leaves
  - Saturated soils within 12 inches of the surface
  - Water standing above the ground surface
- Visual topographic breaks
- Presence of hydric soils
  - Dark surface soils with subsurface A horizon soils having a reduced matrix (chroma 2 or less) and redoximorphic concentrations within 12" of the surface
  - Dark surface soils with subsurface A horizon soils having a reduced matrix (chroma 1 or less) within 12" of the surface
  - Any hydric soil indicator listed in "Field Indicators of Hydric Soils in the United States" (USDA 1998)

Visual signs of wetland hydrology and a predominance of wetland vegetation were the primary wetland indicators used during the delineations. In the absence of visual signs of hydrology, soils were examined to assess whether hydric soils were present and/or signs of hydrology were present within the soil profile. Areas not having a dominance of wetland vegetation and/or lacking visual signs of wetland hydrology and signs of hydrology within the soil profile were classified as upland.

The Geographic Information System (GIS) software ArcView 8.3 (ESRI, Inc.) was used to create wetland maps by developing shapefiles of each wetland area. Wetland and Coastal Resources, Inc. surveyed some wetland flags using a Leica GS-20 global positioning system (GPS), and Kennecott also surveyed portions of the delineated boundaries. Points surveyed by WCR and Kennecott were used to identify the general location of the wetland areas. While the GPS data and the mapping correlate well in many areas, the boundaries developed and presented in this report are primarily approximations based on field sketches.

3.0 RESULTS AND DISCUSSION

3.1 Wetland Delineation

Twenty-six wetland areas were delineated within 1360 acres of the study area. Maps showing the approximate size and location of these wetland complexes are provided in **Figures 3.1** through **3.4**. **Table 3.1** of **Appendix B** lists flag numbers used to delineate each wetland complex. A list of wetland plant species identified near the upland/wetland interface during delineations is included in **Table 3.2**. Photographs showing the physical features, general habitats, and specific plant species for many of the wetland complexes are provided in **Appendix C**.

The following descriptions include additional information regarding physical features associated with each wetland complex. Although not listed in tables or identified in the descriptions below, sphagnum sp. is prevalent in all wetlands.

Wetland Complex 1 is located within the valley of the Salmon Trout River, downstream (north) of Triple A Road. This wetland complex is comprised of submergent, emergent, sedge meadow, scrub-shrub, and forested wetland. Submergent wetland vegetation is sporadically present within wider, slower flowing portions of the river channel.

The forested wetlands within Wetland Complex 1 are present on the east and west slopes of the valley. In many areas these wetlands extend to the top of slope, nearly 100 feet (30 meters (m)) higher in elevation than the terrace of the river valley. Groundwater discharges (seeps) at these elevations are providing a constant source of wetland hydrology. Vegetation within the overstory is dominated by northern white cedar (*Thuja occidentalis*), red maple (*Acer rubrum*), and balsam fir (*Abies balsamea*). The understory contains a diversity of herbaceous plant species including goldthread (*Coptis trifolia*), bunchberry (*Cornus canadensis*), starflower (*Trientalis borealis*), wintergreen (*Gaultheria procumbrens*), fowl manna grass (*Glyceria striata*), lady fern (*Athyrium filix-femina*), cinnamon fern (*Osmunda cinnamomena*), and interrupted fern (*Osmunda claytoniana*).

The scrub-shrub wetlands are strongly dominated by tag alder (*Alnus rugosa*). Chokeberry (*Aronia prunifolia*) and Michigan holly (*Ilex verticillata*) are also present in relatively large numbers. A diversity of herbaceous vegetation is present within the shrub areas, at the base of the forested wetland slopes where seeps are present. Herbaceous species prevalent in these seepage areas include spotted touch-me-not (*Impatiens capensis*), wild mint (*Mentha arvensis*), hooked crowfoot (*Ranunculus recurvatus*), marsh marigold (*Caltha palustris*), and marsh violet (*Viola cucullata*).

The sedge meadow and emergent wetlands along the Salmon Trout River contain a high diversity of herbaceous plant species, with dominant species varying spatially along the valley floor. Some of the dominant species found include swamp thistle (*Cirsium muticum*), bluejoint grass (*Calamagrostis canadensis*), and several sedge species (*Carex aquatilis, C. canescens, C. gynandra, C. scabrata, and C. stricta*).

Wetland Complex 2 is located south and east of Wetland Complex 1, north of Triple A Road. This area contains emergent and wet meadow wetlands that are higher in elevation than the adjacent wetland associated with the Salmon Trout River. Emergent and scrub-shrub wetlands are present within the northern portions of this complex. Numerous groundwater seeps are also present.

Wetland Complex 2 contains a narrow channel at its north end that flows west and down slope toward Wetland Complex 1. Although there is no direct connection between the two wetlands, there is evidence of intermittent surface water flow from Complex 2 to Complex 1, likely occurring after large storm events and spring runoff.

Wetland Complex 3 is a small, perched forested wetland complex located immediately south of Wetland Complex 2 and north of Triple A Road. This area is separated from Wetland Complex 2 by an old roadway and is dominated by a forested wetland overstory and understory.

Wetland Complex 4 is an open water and emergent wetland complex with a forested edge, perched above the Salmon Trout River valley. **Wetland Complex 5** is separated from Complex 4 by a dirt road and is dominated by emergent and scrub-shrub wetland vegetation. Although separated by upland, standing water was present in both wetlands and across the dirt road in the spring of 2004. Wetland Complex 4 is dominated by bluejoint grass, leatherleaf (*Chamaedaphne calyculata*) and red maple. Wetland Complex 5 is dominated by tag alder, pussy willow (*Salix discolor*), and sandbar willow (*Salix exigua*).

Wetland Complex 6 is located within the valley of the Salmon Trout River, upstream (south) of Triple A Road. This is the largest wetland complex within the study area and includes all wetland types identified during the study including submergent, emergent, sedge meadow, wet meadow, scrub-shrub, forested, and bogs in various levels of succession. Forested wetlands are present within the northern portion of the complex, primarily along the side slopes of the valley. Scrub-shrub wetlands are located at the base of the forested wetland slopes. A mixture of sedge meadow and emergent wetlands are found within the terrace of the river valley, and bog wetlands exist on the outer margins of the forested and sedge meadow wetlands.

Several wetland areas north and west of the river valley have recently been cut. Removal of the tree canopy has promoted the growth of wetland rated plant species typically associated with bogs, emergent and wet meadow wetlands. Plant species commonly found within these areas include soft stemmed rush (*Juncus effusus*), narrowleaf goldenrod (*Euthamia graminifolia*), sedge (*C. blanda*, *C. intumescens,* and *C. gynandra*), woolgrass (*Scirpus cyperinus*), and labrador tea (*Ledum groenlandicum*).

The forested wetlands present within the northern half of the complex are similar to the forested wetlands found in Wetland Complex 1. These areas are associated with steep slopes and groundwater seeps at high elevations. A small, groundwater fed stream is present immediately south of Triple A Road, flowing east to the Salmon Trout River. Forested wetlands exist adjacent to this stream on slopes where groundwater seeps are present. Dominant vegetation within the forested wetlands include northern white cedar, red maple,

silver maple (*Acer saccharinum*), balsam fir, white pine (*Pinus strobus*), and tamarack (*Larix laricina*).

A large bog exists on both sides of the Salmon Trout River within the southern half of Wetland Complex 6. This bog is primarily forested with varying densities of tree canopy. Black spruce (*Picea mariana*) and tamarack are the dominant tree species present. The understory of the bog contains a high diversity of plant species. The following species represent some of the commonly observed herbaceous and low-growing woody plants identified within this area: goldthread, bunchberry, starflower, Labrador tea, sedge (*Carex paupercula, C.trisperma, C.disperma, C. canescens, C. interior, C. paucifolia, and C. leptalea*), wintergreen, leatherleaf, Canada blueberry (*Vaccinium myrtiloides*), small cranberry (*V. oxycoccos*), and creeping snowberry (*Gaultheria hispidula*).

Scrub-shrub wetlands are present at the base of the forested slopes within the northern half of the wetland complex and between the large bog complex and sedge meadow (adjacent to the Salmon Trout River). The scrub-shrub areas are strongly dominated by tag alder, with chokeberry, Michigan holly, leatherleaf, swamp laurel (*Kalmia polifolia*), and Canada blueberry present in relatively large numbers.

Sedge meadow and emergent wetlands are present adjacent to the Salmon Trout River throughout the majority of Wetland Complex 6. This area contains a high diversity of plant species. A few of the dominant species within these wetland types include swamp thistle (*Cirsium muticum*), bluejoint grass, northern manna grass (*Glyceria borealis*), and numerous sedges (e.g. *C. lasiocarpa, C. oligosperma, C. lacustris, C. michiauxina, C. aquatilis, C. gynandra, C. scabrata, and C. stricta*).

Submergent vegetation found within Wetland Complex 6 is restricted to the channel of the Salmon Trout River, where numerous beaver ponds are present The dominant aquatic plant species found within the river channel include watercress, white water crowfoot (*Ranunculus longirostris*), eel grass, pondweeds (*Potamogeton gramineus and P. obtusifolius*) and flat-leaved bladderwort (*Utricularia intermedia*).

Wetland Complex 7 is a small, isolated area containing wet meadow, emergent, and bog wetland types that have developed from the cutting of forested bog wetland. This complex is adjacent to, but separate from, cut wetland that is part of Wetland Complex 6. The dominant wetland plant species within this wetland complex are narrow leaf goldenrod, self-heal (*Prunella vulgaris*), soft stemmed rush, and meadowsweet (*Spirea alba*).

Wetland Complexes 8 and 9 are small pockets of forested bog located within isolated coniferous woodland, surrounded by cut forested bog and cut coniferous and deciduous upland woodlands. Complex 9 extends into adjacent cut areas where a small amount of emergent wetland with standing water is present. The forested portions of these complexes contain a dense overstory of balsum fir, tamarack, and black spruce.

Wetland Complexes 10, 11, and 13 contain wet meadow, emergent, and bog wetland types that have developed from past cutting of forested bog wetland. Due to past disturbances, these wetlands contain diverse plant communities comprised of both early and late succession plant species. Dominant early succession plant species observed include trembling aspen (*Populus tremuloides*), soft stemmed rush, and wool grass. Later succession plants observed included Labrador tea, bog rosemary (*Andromeda glaucophylla*) and leatherleaf.

Wetland Complex 12 is a small, isolated area containing open water surrounded by wet meadow and emergent wetland. Plant species typical of bogs are present near the upland/wetland interface. This wetland appears to have developed from both historic cutting of forested bog and past soil disturbances (cutting and filling). Dominant plant species within this wetland complex are leatherleaf, wool fruited sedge (*Carex lasiocarpa*), and Labrador tea.

Wetland Complex 14 is a small bog wetland that is separated from Wetland Complex 15 by natural upland features. This area contains upland hummocks, but is dominated by wetland troughs. Leatherleaf, bluejoint grass, and Labrador tea are the dominant plant species present.

Wetland Complex 15 is a large complex comprised of open water, emergent/wet meadow wetland, forested bog and cut bog. This complex begins near the western project boundary and extends east across the western study area. The wetland connects with Wetland Complex 6; however, the delineation is interrupted because the wetland extends outside of the study area. Two areas of undisturbed forested bog are present within the central portion of this complex. Balsam fir, red maple, black spruce, and tamarack are the dominant plant species. Emergent and wet meadow wetlands with standing water are present within areas surrounding the forested bog. The dominant wetland plant species in emergent/wet meadow include blue-flag iris (*Iris versicolor*), bluejoint grass, and leatherleaf.

Wetland areas surrounding the forested bog and emergent/wet meadow consist of hummocked ground with a mosaic of wetlands and uplands. These areas were delineated as wetland, but have some upland hummocks included within the wetland boundary. These wetlands are dominated by plants commonly found in bogs such as balsam fir, Canada blueberry, leather leaf, and Labrador tea.

Hummocked ground surface continues upland where higher ridges are strongly dominant. Small pockets dominated by sphagnum moss are also present but are sparse and scattered. The upland ridges contain some wetland rated plant species such as balsam fir, Canada blueberry, and Labrador tea. However, the majority of the area contains a clear dominance of upland rated plant species such as bracken fern (*Pteridium aquilinum)*, trailing arbutus (*Epigaea repens*), blueberry (*Vaccinium angustifolium*), and jack pine.

Wetland Complex 16 is a small bog wetland north of Wetland Complex 15. This wetland complex is within the area of upland hummocks described for Wetland Complex 15 but contains a predominance of wetland pockets and troughs. This area is dominated by wetland rated plant species such as leatherleaf, Labrador tea, Canada blueberry, poor sedge (*Carex paupercula*), and bog willow (*Salix pedicellaris*).

Wetland Complexes 17 and 18 are isolated, cut areas that contain plant species representative of bog, wet meadow, and emergent wetlands. Due to the past disturbances,

these wetlands contain both early and late succession plant species. Numerous slash piles from past timbering operations surround these wetlands.

Wetland Complexes 19 and 20 contain wet meadow, emergent, and bog wetland types that have developed as a result of past cutting and soil disturbance. Wetland Complex 19 continues outside of the study area to the east, where forested wetland is present. The wetland appears to connect to Wetland Complex 6. The dominant wetland plant species in these wetland areas include bluejoint grass, dark green bulrush (*Scirpus atrovirens*), sedges (*Carex intumescens* and *C. canescens*), blue flag iris, leatherleaf, and Labrador tea.

Wetland Complex 21 contains bog, wet meadow, emergent and scrub-shrub wetlands that have developed from the historic cutting of forested bog wetland. This area contains approximately one acre of open water and is separated from Wetland Complex 20 by an earthen dam. The dominant wetland plant species in this wetland complex include bluejoint grass, leatherleaf, blueberry, bog willow, and Labrador tea. Surface water within this wetland appears to be intermittently connected to Wetland Complexes 19 and 20.

Wetland Complexes 22 and 23 are located in the southwestern portion of the study area and are part of a large wetland complex to the south. These wetlands appear to have been impacted from past timbering operations, but have reverted to bog wetlands. The dominant plant species observed are leatherleaf, Labrador tea, bog willow, and bog birch (*Betula pumila*).

Wetland Complex 24 is located in the southwestern corner of the study area. The majority of this complex contains undisturbed forested bog surrounded by wetlands similar to those described for Wetland Complexes 22 and 23. Dominant plant species for this wetland complex include leatherleaf, Labrador tea, bog willow, bog birch, tamarack, swamp laurel, and chokeberry. Wetland/upland mosaic (as described for Wetland Area 15) is present within the northern portions of Wetland Complexes 23 and 24 and upland hummocked areas are present upland of the wetland boundaries (as described for Wetland Area 15). Dominant plant

species within the upland hummocked area include lowbush blueberry, trailing arbutus, and round-leaved serviceberry (*Amelanchier sanguinea*).

Wetland Complexes 25 and 26 are located in the southeast portion of the study area and are part of the same larger wetland complex. These areas are part of a bog which extends south of the study area. The southern portion of the wetland complex is open and contains sedge meadow with scattered tree and shrub species. The northern portions and outer edges (at the upland/wetland interface) contain numerous trees and a dense canopy. A diversity of plant species were found in these wetlands including pitcher plant (*Saracennia purpureum*), leatherleaf, Labrador tea, swamp laurel, various sedges (e.g. *Carex lasiocarpa, C. trisperman, C. disperma, C. canescens, C. paupercula*), sheathed cottongrass (*Eriophorum spissum),* narrow leaved cottongrass (*E. angustifolium*) and chokeberry.

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WCR, Wildlife Species Assessment, 2005. Prepared for Golder Associates Inc. Unpublished.

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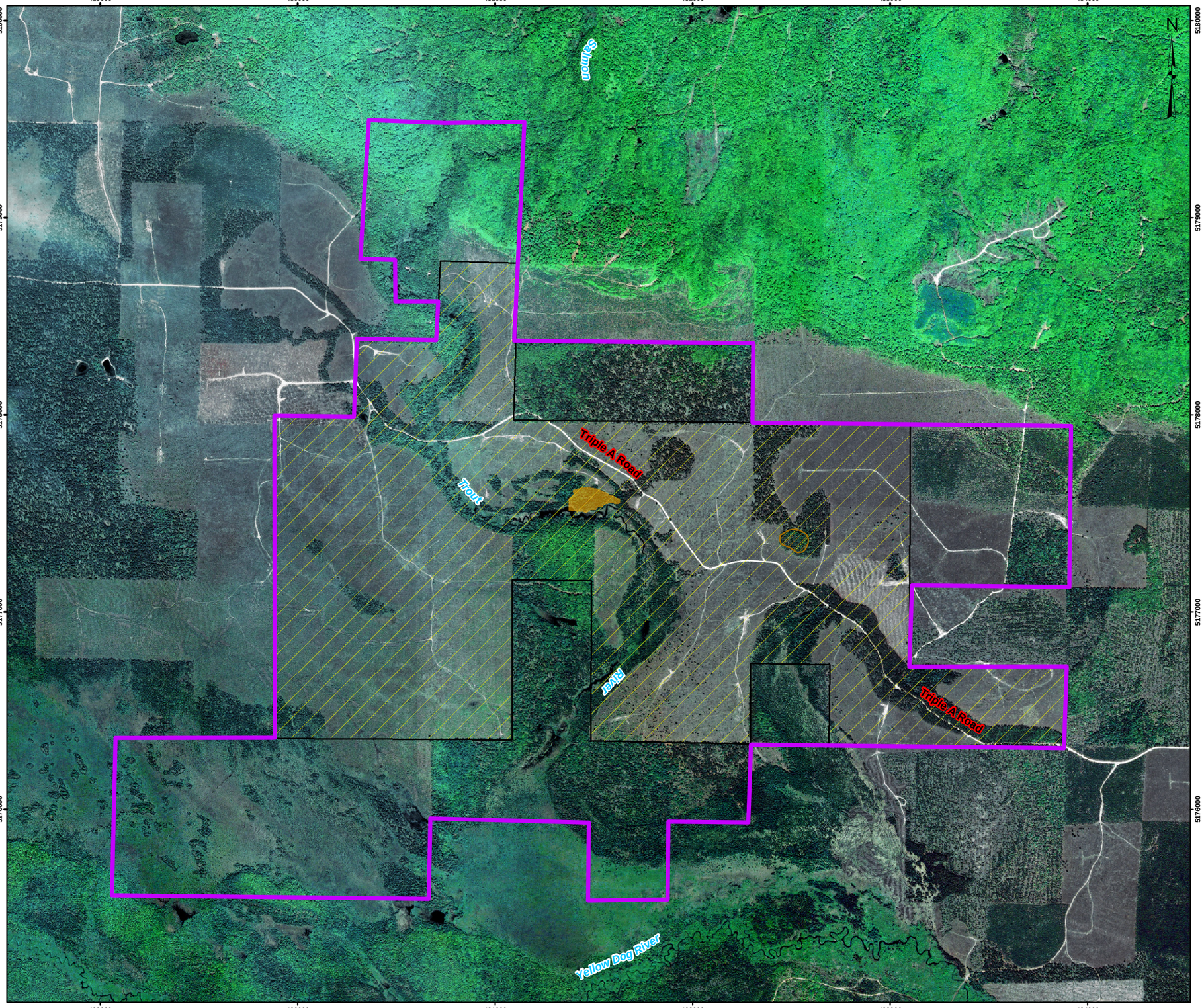
APPENDICES

APPENDIX A

Figure 1.1. Project Study Area

Figures 3.1 through 3.3. Location of Wetland Complexes and Wetland Delineation Flag Numbers

Figure 3.4. Figure Showing the Location of Wetland Complexes Identified by Area



LEGEND

- ORE BODY
- OUTCROP
- KMC/MDNR PROPERTY
- STUDY AREA

REFERENCE

Quickbird image provided by Digital Globe.
Datum: NAD 83 Projection: Transverse Mercator Coordinate System: UTM Zone 16

2,000 0 2,000
SCALE: 1: 20,000 FEET

PROJECT
Kennecott Minerals

EAGLE PROJECT
BASELINE ENVIRONMENTAL STUDY
KENNECOTT MINERALS COMPANY

TITLE
Wetland and Coastal Resources

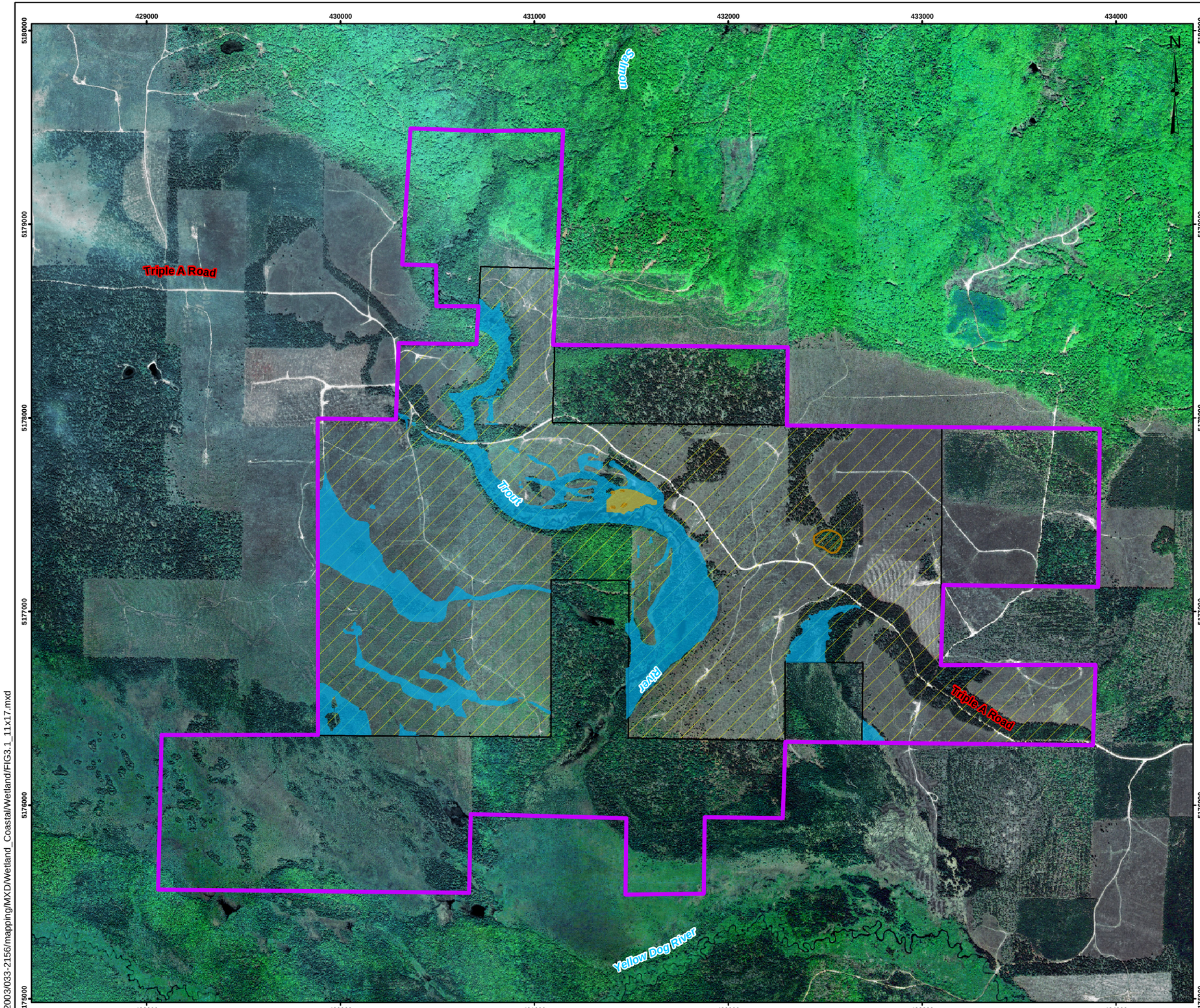
PROJECT STUDY AREA

Golder Associates

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GIS	TN	31 May 2005		
CHECK	JM	31 May 2005		
REVIEW				

FIGURE 1.1

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LEGEND

- ORE BODY
- OUTCROP
- KMC/MDNR PROPERTY
- STUDY AREA
- APPROXIMATE WETLAND BOUNDARY

REFERENCE

Quickbird image provided by Digital Globe. Approximate wetland boundary data provided by Wetland and Coastal Resources, Inc.
Datum: NAD 83 Projection: Transverse Mercator Coordinate System: UTM Zone 16

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PROJECT
Kennecott Minerals

EAGLE PROJECT
BASELINE ENVIRONMENTAL STUDY
KENNECOTT MINERALS COMPANY

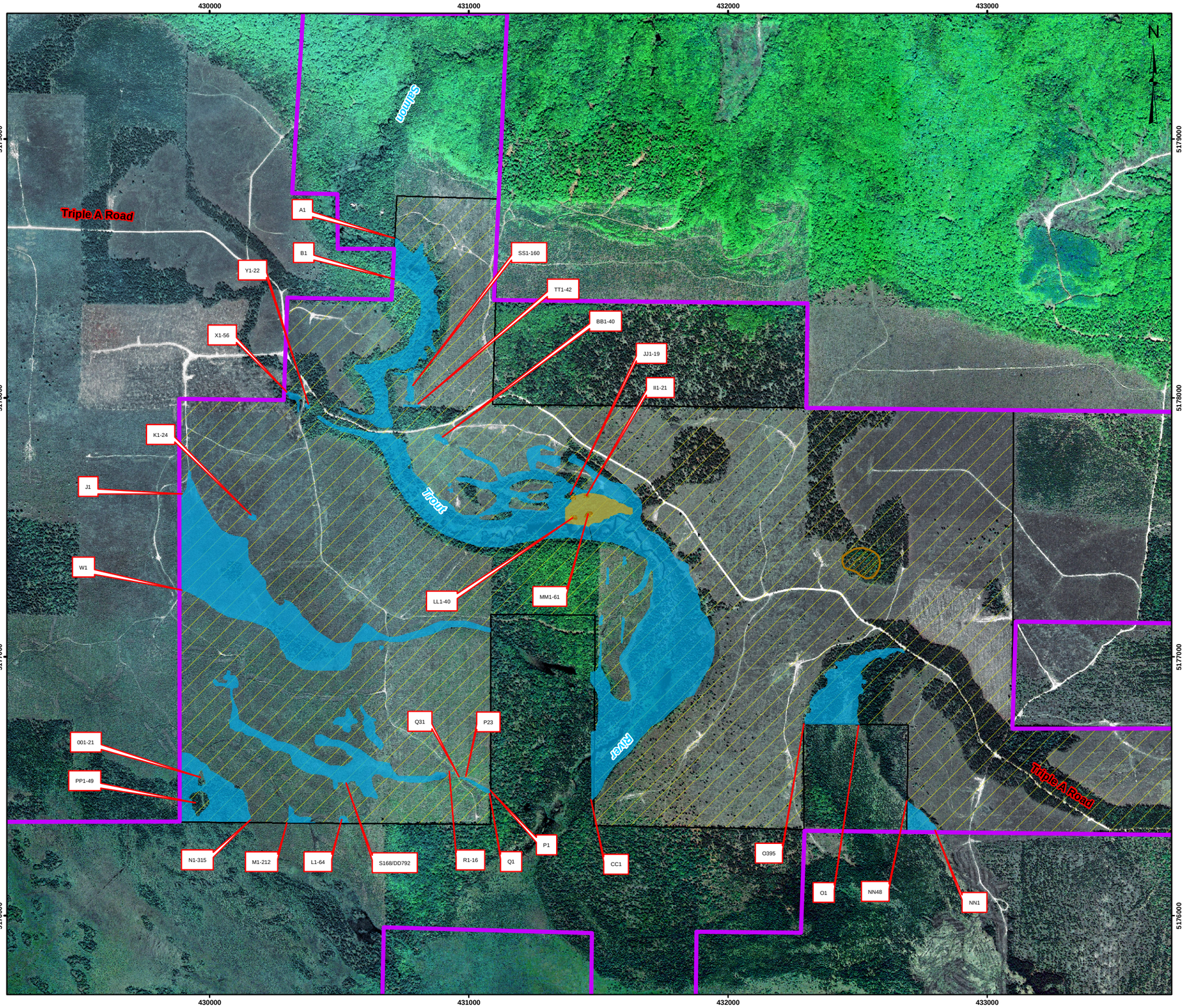
TITLE
Wetland and Coastal Resources

WETLAND DELINEATION MAP

Golder Associates

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CHECK	JM	31 May 2005		
REVIEW				

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LEGEND

- ORE BODY
- OUTCROP
- KMC/MDNR PROPERTY
- STUDY AREA
- APPROXIMATE WETLAND BOUNDARY

REFERENCE

Quickbird image provided by Digital Globe. Approximate wetland boundary data provided by Wetland and Coastal Resources, Inc.
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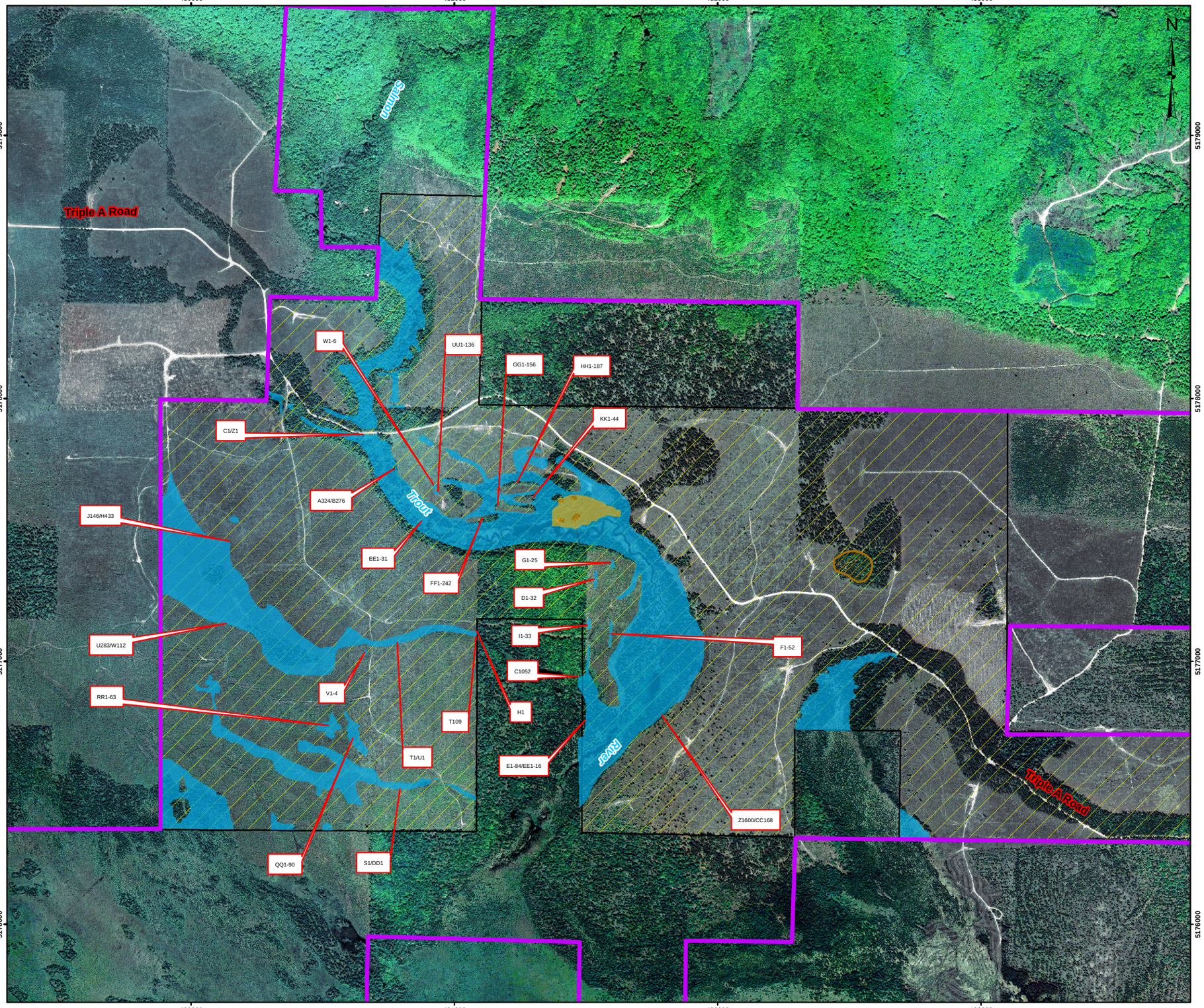
PROJECT
Kennecott Minerals
EAGLE PROJECT
BASELINE ENVIRONMENTAL STUDY
KENNECOTT MINERALS COMPANY

TITLE
Wetland and Coastal Resources
WETLAND DELINEATION MAP WITH NUMBERED BOUNDARIES

Golder Associates

PROJECT No. 033-2156C			SCALE AS SHOWN	REV. 0
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REVIEW				

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LEGEND

- ORE BODY
- OUTCROP
- KMC/MDNR PROPERTY
- STUDY AREA
- APPROXIMATE WETLAND BOUNDARY

REFERENCE

Quickbird image provided by Digital Globe. Approximate wetland boundary data provided by Wetland and Coastal Resources, Inc.
Datum: NAD 83 Projection: Transverse Mercator Coordinate System: UTM Zone 16

1,500 0 1,500
SCALE: 1: 15,000 FEET

PROJECT
Kennecott Minerals

EAGLE PROJECT
BASELINE ENVIRONMENTAL STUDY
KENNECOTT MINERALS COMPANY

TITLE
Wetland and Coastal Resources

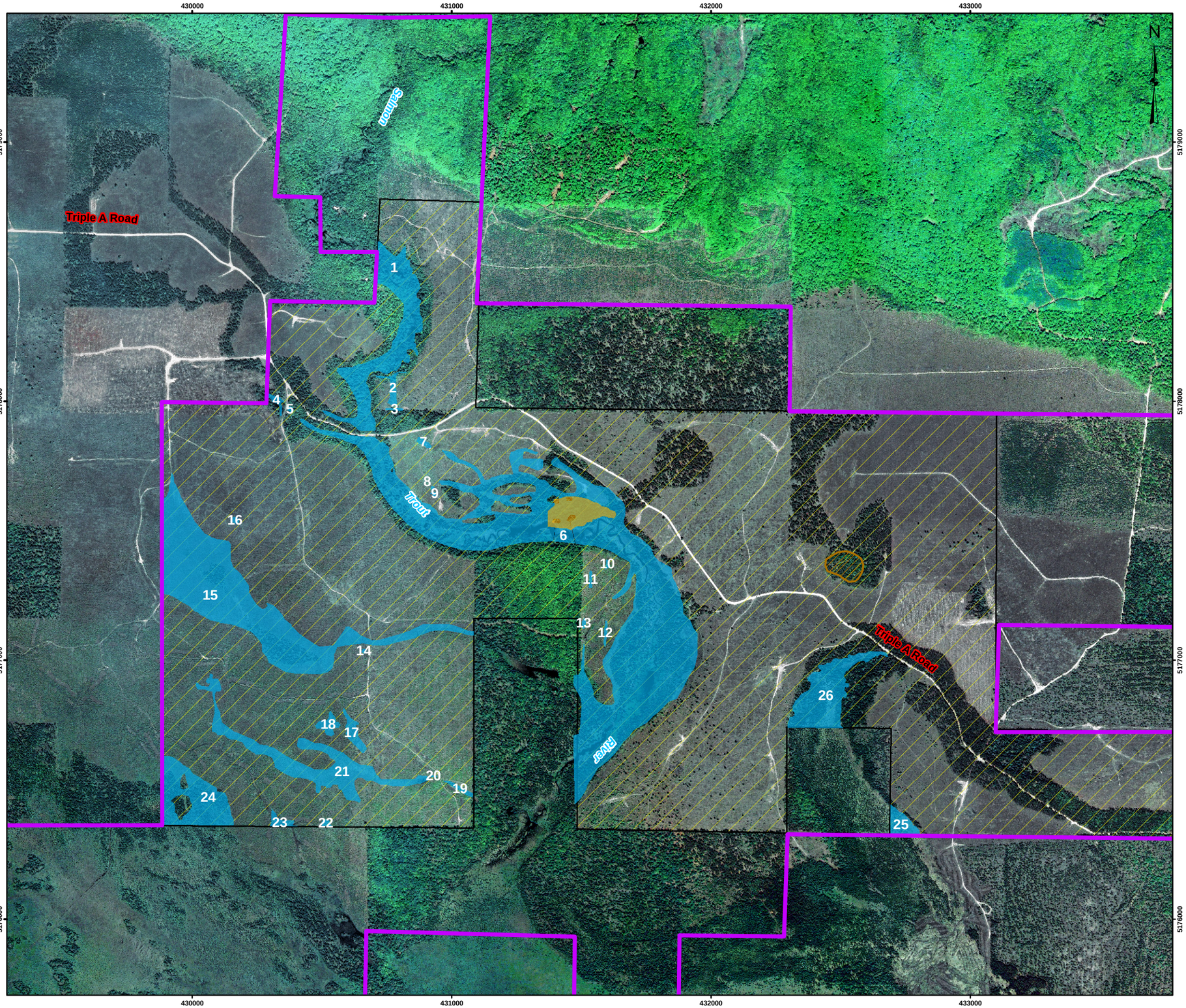
WETLAND DELINEATION MAP WITH NUMBERED BOUNDARIES

Golder Associates

PROJECT No. 033-2156C			SCALE AS SHOWN	REV. 0
DESIGN	SM	8 Apr. 2005		
GIS	TN	31 May 2005		
CHECK	JM	31 May 2005		
REVIEW				

FIGURE 3.3

I:/2003/033-2156/mapping/MXD/Wetland_Coastal/wetland/FIG3.3_11x17.mxd



LEGEND

- ORE BODY
- OUTCROP
- KMC/MDNR PROPERTY
- STUDY AREA
- APPROXIMATE WETLAND BOUNDARY

REFERENCE

Quickbird image provided by Digital Globe. Approximate wetland boundary data provided by Wetland and Coastal Resources, Inc.
Datum: NAD 83 Projection: Transverse Mercator Coordinate System: UTM Zone 16

1,500 0 1,500
SCALE: 1:15,000 FEET

PROJECT
Kennecott Minerals

EAGLE PROJECT
BASELINE ENVIRONMENTAL STUDY
KENNECOTT MINERALS COMPANY

TITLE
Wetland and Coastal Resources

WETLAND AREAS

Golder Associates

PROJECT No. 033-2156C			SCALE AS SHOWN	REV. 0
DESIGN	SM	8 Apr. 2005		
GIS	TN	31 May 2005		
CHECK	JM	31 May 2005		
REVIEW				

FIGURE 3.4

I:/2003/033-2156/mapping/MXD/Wetland_Coastal/Wetland/FIG3.4_11x17.mxd

APPENDIX B

Table 3.1. Wetland Delineation Flag Numbers and Wetland Types

Table 3.2. Partial List of Vegetation Identified in Wetland Complexes

Table 3.1. Wetland Delineation Flag Numbers and Wetland Types

Wetland Complex	Flag Numbers	Wetland Type
1	A 1-324	Forested Wetland Seeps, Wet Meadow/Emergent, Emergent, Scrub-shrub, River Channel/submergent
	B1-276	
2	SS 1-160	Emergent, Open Bog with Groundwater Seeps
3	TT 1-42	Forested Bog/Wetland
4	X 1-56	Open Water, Emergent
5	Y 1-22	Emergent, Scrub-shrub
6	C 1-1050	Forested Wetland Seeps, Wet Meadow, Emergent, Scrub-shrub, Open Bog, Cut Bog, Submergent, Open Water (Beaver Ponds), River Channel
	E 1-84	
	Z 1-1600	
	AA 1-29	
	CC 1-168	
	EE 1-16/EE 1-31	
	FF 1-242	
	GG 1-156	
	HH 1-187	
	II 1-21	
	JJ 1-19	
	KK 1-44	
	LL 1-40	
	MM 1-61	
7	BB 1-40	Wet Meadow, Emergent, Cut Bog
8	VV 1-6	Forested Bog
9	UU 1-136	Forested Bog
10	G 1-25	Wet Meadow, Emergent, Cut Bog
11	D 1-31	Wet Meadow, Emergent, Cut Bog
12	F 1-52	Open Bog, Emergent, Open Water
13	I 1-33	Wet Meadow, Emergent, Cut Bog
14	V 1-4	Wet Meadow, Emergent, Cut Bog
15	H 1-433	Forested Bog, Open Bog, Cut Bog,
	J 1-146	
	W 1-112	
	U 1-283	
	T 1-109	

Wetland Complex	Flag Numbers	Wetland Type
16	K 1-24	Cut Bog
17	QQ 1-90	Wet Meadow, Emergent, Cut Bog
18	RR 1-63	Wet Meadow, Emergent, Cut Bog
19	P 1-23	Wet Meadow, Emergent, Cut Bog
	Q 1-31	
20	R 1-16	Wet Meadow, Emergent, Cut Bog
21	S 1-168	Wet Meadow, Emergent, Scrub-shrub, Cut Bog
	DD 1-792	
22	L 1-64	Open Bog, Scrub-shrub
23	M 1-212	Open Bog, Scrub-shrub
24	N 1-315	Forested Bog
	OO 1-21	
	PP 1-49	
25	NN 1-48	Forested Bog, Open Bog, Wet Meadow
26	O 1-395	

Table 3.2. Partial List of Vegetation Identified in Wetland Complexes

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complex 1	*Abies balsamea*	BALSAM FIR	FACW	Nt Tree
	Acer pensylvanicum	STRIPED MAPLE	FACU	Nt Tree
	Acer rubrum	RED MAPLE	FAC	Nt Tree
	Acer saccharinum	SILVER MAPLE	FACW	Nt Tree
	Acer saccharum	SUGAR MAPLE	FACU	Nt Tree
	Acer spicatum	MOUNTAIN MAPLE	FACU	Nt Tree
	Alnus rugosa	TAG ALDER	OBL	Nt Shrub
	Anemone quinquefolia	WOOD ANEMONE	FAC	Nt P-Forb
	Aralia nudicaulis	WILD SARSAPARILLA	FACU	Nt P-Forb
	Aronia prunifolia	BLACK CHOKEBERRY	FACW	Nt Shrub
	Aster macrophyllus	BIG LEAVED ASTER	UPL	Nt P-Forb
	Athyrium filix-femina	LADY FERN	FAC	Nt Fern
	Calamagrostis canadensis	BLUE JOINT GRASS	OBL	Nt P-Grass
	Caltha palustris	MARSH MARIGOLD	OBL	Nt P-Forb
	Carex aquatilis	SEDGE	OBL	Nt P-Sedge
	Carex blanda	SEDGE	FAC	Nt P-Sedge
	Carex canescens	SEDGE	OBL	Nt P-Sedge
	Carex debilis	SWAMP SEDGE	FACW	Nt P-Sedge
	Carex gynandra	SEDGE	FACW+	Nt P-Sedge
	Carex intumescens	SEDGE	FACW+	Nt P-Sedge
	Carex scabrata	SEDGE	OBL	Nt P-Sedge
	Carex schweinitzii	SEDGE	OBL	Nt P-Sedge
	Carex stricta	SEDGE	OBL	Nt P-Sedge
	Circaea alpina	SMALL ENCHANTER'S NIGHTSHADE	FACW	Nt P-Forb
	Cirsium muticum	SWAMP THISTLE	OBL	Nt B-Forb
	Clintonia borealis	BLUEBEAD LILY; CORN LILY	FAC+	Nt P-Forb
	Coptis trifolia	GOLDTHREAD	FACW	Nt P-Forb
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Epigaea repens	TRAILING ARBUTUS	UPL	Nt Shrub
	Gaultheria procumbens	WINTERGREEN	FACU	Nt Shrub
	Glyceria striata	FOWL MANNA GRASS	OBL	Nt P-Grass

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complex 1 cont.	*Ilex verticillata*	MICHIGAN HOLLY	FACW+	Nt Shrub
	Impatiens capensis	SPOTTED TOUCH ME NOT	FACW	Nt A-Forb
	Maianthemum canadense	CANADA MAYFLOWER	FAC	Nt P-Forb
	Mentha arvensis	WILD MINT	FACW	Nt P-Forb
	Mitchella repens	PARTRIDGE BERRY	FACU+	Nt P-Forb
	Osmunda cinnamomea	CINNAMON FERN	FACW	Nt Fern
	Osmunda claytoniana	INTERRUPTED FERN	FAC+	Nt Fern
	Pinus strobus	WHITE PINE	FACU	Nt Tree
	Prunus virginiana	CHOKE CHERRY	FAC-	Nt Shrub
	Ranunculus recurvatus	HOOKED CROWFOOT	FACW	Nt A-Forb
	Senecio aureus	GOLDEN RAGWORT	FACW	Nt P-Forb
	Smilacina stellata	STARRY FALSE SOLOMON SEAL	FAC-	Nt P-Forb
	Thuja occidentalis	ARBOR VITAE	FACW	Nt Tree
	Trientalis borealis	STARFLOWER	FAC+	Nt P-Forb
	Vaccinium corymbosum	SMOOTH HIGHBUSH BLUEBERRY	FACW	Nt Shrub
	Vaccinium myrtilloides	CANADA BLUEBERRY	FACW-	Nt Shrub
	Vaccinium oxycoccos	SMALL CRANBERRY	OBL	Nt Shrub
	Viola cucullata	MARSH VIOLET	OBL	Nt P-Forb
Wetland Complex 2	*Abies balsamea*	BALSAM FIR	FACW	Nt Tree
	AGROSTIS GIGANTEA	REDTOP	FAC	Ad P-Grass
	Agrostis hyemalis	TICKLEGRASS	FAC-	Nt P-Grass
	Alnus rugosa	TAG ALDER	OBL	Nt Shrub
	Athyrium filix-femina	LADY FERN	FAC	Nt Fern
	Calamagrostis canadensis	BLUE JOINT GRASS	OBL	Nt P-Grass
	Carex canescens	SEDGE	OBL	Nt P-Sedge
	Carex communis	SEDGE	UPL	Nt P-Sedge
	Carex debilis	SWAMP SEDGE	FACW	Nt P-Sedge
	Carex disperma	SEDGE	OBL	Nt P-Sedge
	Carex gynandra	SEDGE	FACW+	Nt P-Sedge
	Carex intumescens	SEDGE	FACW+	Nt P-Sedge
	Carex scabrata	SEDGE	OBL	Nt P-Sedge

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complex 2 cont.	*Carex scoparia*	SEDGE	FACW	Nt P-Sedge
	Carex stipata	SEDGE	OBL	Nt P-Sedge
	Circaea alpina	SMALL ENCHANTER'S NIGHTSHADE	FACW	Nt P-Forb
	Cirsium muticum	SWAMP THISTLE	OBL	Nt B-Forb
	Coptis trifolia	GOLDTHREAD	FACW	Nt P-Forb
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Drosera rotundifolia	ROUND LEAVED SUNDEW	OBL	Nt P-Forb
	Dryopteris cristata	CRESTED SHIELD FERN	OBL	Nt Fern
	Epilobium leptophyllum	FEN WILLOW HERB	OBL	Nt P-Forb
	Equisetum sylvaticum	WOODLAND HORSETAIL	FACW	Nt Fern Ally
	Eriophorum virginicum	TAWNY COTTON GRASS	OBL	Nt P-Sedge
	Eupatorium perfoliatum	COMMON BONESET	FACW+	Nt P-Forb
	Gaultheria hispidula	CREEPING SNOWBERRY	FACW	Nt Shrub
	Hypericum ellipticum	PALE ST. JOHN'S WORT	OBL	Nt P-Forb
	Ilex verticillata	MICHIGAN HOLLY	FACW+	Nt Shrub
	Juncus brevicaudatus	RUSH	OBL	Nt P-Forb
	Juncus effusus	SOFT STEMMED RUSH	OBL	Nt P-Forb
	Larix laricina	TAMARACK	FACW	Nt Tree
	Maianthemum canadense	CANADA MAYFLOWER	FAC	Nt P-Forb
	NASTURTIUM OFFICINALE	WATERCRESS	OBL	Ad P-Grass
	Osmunda cinnamomea	CINNAMON FERN	FACW	Nt Fern
	Osmunda claytoniana	INTERRUPTED FERN	FAC+	Nt Fern
	Picea mariana	BLACK SPRUCE	FACW	Nt Tree
	Polygonatum biflorum	SOLOMON SEAL	FACU	Nt P-Forb
	Ribes glandulosum	SKUNK CURRANT	FACW	Nt Shrub
	Ribes triste	SWAMP RED CURRANT	OBL	Nt Shrub
	Rubus strigosus	WILD RED RASPBERRY	FACW-	Nt Shrub
	Salix humilis	PRAIRIE WILLOW	FACU	Nt Shrub
	Scirpus atrovirens	BULRUSH	OBL	Nt P-Sedge
	Scirpus cyperinus	WOOL GRASS	OBL	Nt P-Sedge

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complex 2 cont.	*Typha latifolia*	BROAD LEAVED CATTAIL	OBL	Nt P-Forb
	Viola blanda	SWEET WHITE VIOLET	FACW-	Nt P-Forb
	Viola sororia	COMMON BLUE VIOLET	FAC-	Nt P-Forb
Wetland Complex 3	*Abies balsamea*	BALSAM FIR	FACW	Nt Tree
	Acer rubrum	RED MAPLE	FAC	Nt Tree
	Gaultheria procumbens	WINTERGREEN	FACU	Nt Shrub
	Impatiens capensis	SPOTTED TOUCH ME NOT	FACW	Nt A-Forb
	Maianthemum canadense	CANADA MAYFLOWER	FAC	Nt P-Forb
	Vaccinium myrtilloides	CANADA BLUEBERRY	FACW-	Nt Shrub
Wetland Complexes 4 and 5	*Acer rubrum*	RED MAPLE	FAC	Nt Tree
	Alnus rugosa	TAG ALDER	OBL	Nt Shrub
	Calamagrostis canadensis	BLUE JOINT GRASS	OBL	Nt P-Grass
	Chamaedaphne calyculata	LEATHERLEAF	OBL	Nt Shrub
	Coptis trifolia	GOLDTHREAD	FACW	Nt P-Forb
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Iris versicolor	WILD BLUE FLAG	OBL	Nt P-Forb
	Ledum groenlandicum	LABRADOR TEA	OBL	Nt Shrub
	Maianthemum canadense	CANADA MAYFLOWER	FAC	Nt P-Forb
	Salix discolor	PUSSY WILLOW	FACW	Nt Shrub
	Salix exigua	SANDBAR WILLOW	OBL	Nt Shrub
	Trientalis borealis	STARFLOWER	FAC+	Nt P-Forb
	Vaccinium myrtilloides	CANADA BLUEBERRY	FACW-	Nt Shrub
Wetland Complex 6	*Abies balsamea*	BALSAM FIR	FACW	Nt Tree
	Acer pensylvanicum	STRIPED MAPLE	FACU	Nt Tree
	Acer rubrum	RED MAPLE	FAC	Nt Tree
	Acer saccharinum	SILVER MAPLE	FACW	Nt Tree
	Alnus rugosa	TAG ALDER	OBL	Nt Shrub
	Andromeda glaucophylla	BOG ROSEMARY	OBL	Nt Shrub
	Aronia prunifolia	BLACK CHOKEBERRY	FACW	Nt Shrub
	Aster puniceus	SWAMP ASTER	OBL	Nt P-Forb
	Bidens comosus	SWAMP TICKSEED	FACW	Nt A-Forb

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complex 6 cont.	*Calamagrostis canadensis*	BLUE JOINT GRASS	OBL	Nt P-Grass
	Caltha palustris	MARSH MARIGOLD	OBL	Nt P-Forb
	Cares interior	SEDGE	OBL	Nt P-Sedge
	Carex aquatilis	SEDGE	OBL	Nt P-Sedge
	Carex blanda	SEDGE	FAC	Nt P-Sedge
	Carex comosa	SEDGE	OBL	Nt P-Sedge
	Carex disperma	SEDGE	OBL	Nt P-Sedge
	Carex gynandra	SEDGE	FACW+	Nt P-Sedge
	Carex intumescens	SEDGE	FACW+	Nt P-Sedge
	Carex lacustris	SEDGE	OBL	Nt P-Sedge
	Carex lasiocarpa	SEDGE	OBL	Nt P-Sedge
	Carex leptalea	SEDGE	OBL	Nt P-Sedge
	Carex michauxiana	SEDGE	OBL	Nt P-Sedge
	Carex oligosperma	SEDGE	OBL	Nt P-Sedge
	Carex pauciflora	SEDGE	OBL	Nt P-Sedge
	Carex paupercula	SEDGE	OBL	Nt P-Sedge
	Carex scabrata	SEDGE	OBL	Nt P-Sedge
	Carex stipata	SEDGE	OBL	Nt P-Sedge
	Carex stricta	SEDGE	OBL	Nt P-Sedge
	Carex trisperma	SEDGE	OBL	Nt P-Sedge
	Cirsium muticum	SWAMP THISTLE	OBL	Nt B-Forb
	Clintonia borealis	BLUEBEAD LILY; CORN LILY	FAC+	Nt P-Forb
	Coptis trifolia	GOLDTHREAD	FACW	Nt P-Forb
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Dryopteris intermedia	EVERGREEN WOODFERN	FAC	Nt Fern
	Euthamia graminifloia	NARROW LEAF GOLDENROD	FACW	Nt P-Forb
	Gaultheria hispidula	CREEPING SNOWBERRY	FACW	Nt Shrub
	Gaultheria procumbens	WINTERGREEN	FACU	Nt Shrub
	Gentiana linearis	NARROW LEAVED GENTIAN	[FACW-]	Nt P-Forb
	Glyceria borealis	NORTHERN MANNA GRASS	OBL	Nt P-Grass
	Glyceria striata	FOWL MANNA GRASS	OBL	Nt P-Grass

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complex 6 cont	*Ilex verticillata*	MICHIGAN HOLLY	FACW+	Nt Shrub
	Impatiens capensis	SPOTTED TOUCH ME NOT	FACW	Nt A-Forb
	Iris versicolor	WILD BLUE FLAG	OBL	Nt P-Forb
	Juncus effusus	SOFT STEMMED RUSH	OBL	Nt P-Forb
	Kalmia polifolia	SWAMP LAUREL	OBL	Nt Shrub
	Larix laricina	TAMARACK	FACW	Nt Tree
	Ledum groenlandicum	LABRADOR TEA	OBL	Nt Shrub
	LONICERA MAACKII	AMUR HONEYSUCKLE	UPL	Ad Shrub
	LONICERA XBELLA	HYBRID HONEYSUCKLE	FACU	Ad Shrub
	Maianthemum canadense	CANADA MAYFLOWER	FAC	Nt P-Forb
	NASTURTIUM OFFICINALE	WATERCRESS	OBL	Ad P-Grass
	Osmunda cinnamomea	CINNAMON FERN	FACW	Nt Fern
	Osmunda claytoniana	INTERRUPTED FERN	FAC+	Nt Fern
	Picea mariana	BLACK SPRUCE	FACW	Nt Tree
	Populus tremuloides	QUAKING ASPEN	FAC	Nt Tree
	Potamogeton gramineus	PONDWEED	OBL	Nt P-Forb
	Potamogeton obtusifolius	PONDWEED	OBL	Nt P-Forb
	Ranunculus longirostris	WHITE WATER CROWFOOT	OBL	Nt P-Forb
	Ranunculus recurvatus	HOOKED CROWFOOT	FACW	Nt A-Forb
	Ranunculus sceleratus	CURSED CROWFOOT	OBL	Nt A-Forb
	Ribes americanum	WILD BLACK CURRANT	FACW	Nt Shrub
	Rubus pubescens	DWARF RASPBERRY	FACW+	Nt P-Forb
	Scirpus cyperinus	WOOL GRASS	OBL	Nt P-Sedge
	Smilacina racemosa	FALSE SPIKENARD	FACU	Nt P-Forb
	Streptopus amplexifolius	TWISTED STALK	FAC+	Nt P-Forb
	Thalictrum dasycarpum	PURPLE MEADOW RUE	FACW-	Nt P-Forb
	Trientalis borealis	STARFLOWER	FAC+	Nt P-Forb
	Trillium cernuum	NODDING TRILLIUM	FAC	Nt P-Forb
	Utricularia intermedia	FLAT LEAVED BLADDERWORT	OBL	Nt P-Forb
	Vaccinium angustifolium	BLUEBERRY	FACU	Nt Shrub
	Vaccinium corymbosum	SMOOTH HIGHBUSH BLUEBERRY	FACW	Nt Shrub

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complex 6 cont	*Vaccinium myrtilloides*	CANADA BLUEBERRY	FACW-	Nt Shrub
	Vaccinium oxycoccos	SMALL CRANBERRY	OBL	Nt Shrub
	Vallisneria americana	EEL GRASS	OBL	Nt P-Forb
	Viola cucullata	MARSH VIOLET	OBL	Nt P-Forb
	Viola striata	CREAM VIOLET	FACW	Nt P-Forb
Wetland Complex 7	*Euthamia graminifloia*	NARROW LEAF GOLDENROD	FACW	Nt P-Forb
	Alnus rugosa	TAG ALDER	OBL	Nt Shrub
	Juncus effusus	SOFT STEMMED RUSH	OBL	Nt P-Forb
	Populus tremuloides	QUAKING ASPEN	FAC	Nt Tree
	Prunus vulgaris	SELF-HEAL	FAC	Nt P-Forb
	Spirea alba	MEADOWSWEET	FACW+	Nt P-Forb
Wetland Complex 8 and 9	*Abies balsamea*	BALSAM FIR	FACW	Nt Tree
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Impatiens capensis	SPOTTED TOUCH ME NOT	FACW	Nt A-Forb
	Larix laricina	TAMARACK	FACW	Nt Tree
	Osmunda cinnamomea	CINNAMON FERN	FACW	Nt Fern
	Osmunda claytoniana	INTERRUPTED FERN	FAC+	Nt Fern
	Picea mariana	BLACK SPRUCE	FACW	Nt Tree
	Trientalis borealis	STARFLOWER	FAC+	Nt P-Forb
Wetland Complexes 10, 11, and 13	*Acer rubrum*	RED MAPLE	FAC	Nt Tree
	Andromeda glaucophylla	BOG ROSEMARY	OBL	Nt Shrub
	Calamagrostis canadensis	BLUE JOINT GRASS	OBL	Nt P-Grass
	Carex canescens	SEDGE	OBL	Nt P-Sedge
	Carex debilis	SWAMP SEDGE	FACW	Nt P-Sedge
	Carex intumescens	SEDGE	FACW+	Nt P-Sedge
	Carex stricta	SEDGE	OBL	Nt P-Sedge
	Chamaedaphne calyculata	LEATHERLEAF	OBL	Nt Shrub
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Epigaea repens	TRAILING ARBUTUS	UPL	Nt Shrub
	Juncus effusus	SOFT STEMMED RUSH	OBL	Nt P-Forb

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complexes 10, 11, and 13 cont.	*Kalmia polifolia*	SWAMP LAUREL	OBL	Nt Shrub
	Larix laricina	TAMARACK	FACW	Nt Tree
	Ledum groenlandicum	LABRADOR TEA	OBL	Nt Shrub
	Maianthemum canadense	CANADA MAYFLOWER	FAC	Nt P-Forb
	Osmunda regalis	ROYAL FERN	OBL	Nt Fern
	Populus tremuloides	QUAKING ASPEN	FAC	Nt Tree
	Rubus strigosus	WILD RED RASPBERRY	FACW-	Nt Shrub
	Salix discolor	PUSSY WILLOW	FACW	Nt Shrub
	Scirpus cyperinus	WOOL GRASS	OBL	Nt P-Sedge
	Trientalis borealis	STARFLOWER	FAC+	Nt P-Forb
	Vaccinium corymbosum	SMOOTH HIGHBUSH BLUEBERRY	FACW	Nt Shrub
	Viola sororia	COMMON BLUE VIOLET	FAC-	Nt P-Forb
Wetland Complex 12	*Calamagrostis canadensis*	BLUE JOINT GRASS	OBL	Nt P-Grass
	Carex lasiocarpa	SEDGE	OBL	Nt P-Sedge
	Chamaedaphne calyculata	LEATHERLEAF	OBL	Nt Shrub
	Iris versicolor	WILD BLUE FLAG	OBL	Nt P-Forb
	Ledum groenlandicum	LABRADOR TEA	OBL	Nt Shrub
Wetland Complex 14 and 16	*Andromeda glaucophylla*	BOG ROSEMARY	OBL	Nt Shrub
	Calamagrostis canadensis	BLUE JOINT GRASS	OBL	Nt P-Grass
	Carex paupercula	SEDGE	OBL	Nt P-Sedge
	Chamaedaphne calyculata	LEATHERLEAF	OBL	Nt Shrub
	Epigaea repens	TRAILING ARBUTUS	UPL	Nt Shrub
	Ledum groenlandicum	LABRADOR TEA	OBL	Nt Shrub
	PINUS SYLVESTRIS	SCOTCH PINE	UPL	Ad Tree
	Populus tremuloides	QUAKING ASPEN	FAC	Nt Tree
	Salix pedicellaris	BOG WILLOW	OBL	Nt Shrub
	Scirpus cyperinus	WOOL GRASS	OBL	Nt P-Sedge
	Vaccinium myrtilloides	CANADA BLUEBERRY	FACW-	Nt Shrub

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complex 15	*Abies balsamea*	BALSAM FIR	FACW	Nt Tree
	Acer rubrum	RED MAPLE	FAC	Nt Tree
	Calamagrostis canadensis	BLUE JOINT GRASS	OBL	Nt P-Grass
	Carex debilis	SWAMP SEDGE	FACW	Nt P-Sedge
	Chamaedaphne calyculata	LEATHERLEAF	OBL	Nt Shrub
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Epigaea repens	TRAILING ARBUTUS	UPL	Nt Shrub
	Iris versicolor	WILD BLUE FLAG	OBL	Nt P-Forb
	Kalmia polifolia	SWAMP LAUREL	OBL	Nt Shrub
	Larix laricina	TAMARACK	FACW	Nt Tree
	Ledum groenlandicum	LABRADOR TEA	OBL	Nt Shrub
	Maianthemum canadense	CANADA MAYFLOWER	FAC	Nt P-Forb
	Picea mariana	BLACK SPRUCE	FACW	Nt Tree
	PINUS SYLVESTRIS	SCOTCH PINE	UPL	Ad Tree
	Populus tremuloides	QUAKING ASPEN	FAC	Nt Tree
	Salix discolor	PUSSY WILLOW	FACW	Nt Shrub
	Trientalis borealis	STARFLOWER	FAC+	Nt P-Forb
	Vaccinium corymbosum	SMOOTH HIGHBUSH BLUEBERRY	FACW	Nt Shrub
Wetland Complexes 17, 18, 19, 20, and 21	*Andromeda glaucophylla*	BOG ROSEMARY	OBL	Nt Shrub
	Calamagrostis canadensis	BLUE JOINT GRASS	OBL	Nt P-Grass
	Carex canescens	SEDGE	OBL	Nt P-Sedge
	Carex intumescens	SEDGE	FACW+	Nt P-Sedge
	Chamaedaphne calyculata	LEATHERLEAF	OBL	Nt Shrub
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Iris versicolor	WILD BLUE FLAG	OBL	Nt P-Forb
	Ledum groenlandicum	LABRADOR TEA	OBL	Nt Shrub
	Maianthemum canadense	CANADA MAYFLOWER	FAC	Nt P-Forb
	Pinus banksiana	JACK PINE	FACU	Nt Tree
	Populus tremuloides	QUAKING ASPEN	FAC	Nt Tree
	RUMEX ACETOSA	GREEN SORREL	UPL	Ad P-Forb

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complexes 17, 18, 19, 20, and 21 cont.	*Salix pedicellaris*	BOG WILLOW	OBL	Nt Shrub
	Scirpus atrovirens	BULRUSH	OBL	Nt P-Sedge
	Trientalis borealis	STARFLOWER	FAC+	Nt P-Forb
	Vaccinium angustifolium	BLUEBERRY	FACU	Nt Shrub
	Vaccinium myrtilloides	CANADA BLUEBERRY	FACW-	Nt Shrub
Wetland Complexes 22 and 23	*Andromeda glaucophylla*	BOG ROSEMARY	OBL	Nt Shrub
	Betula pumila	BOG BIRCH	OBL	Nt Shrub
	Carex paupercula	SEDGE	OBL	Nt P-Sedge
	Clintonia borealis	BLUEBEAD LILY; CORN LILY	FAC+	Nt P-Forb
	Gaultheria procumbens	WINTERGREEN	FACU	Nt Shrub
	Larix laricina	TAMARACK	FACW	Nt Tree
	Ledum groenlandicum	LABRADOR TEA	OBL	Nt Shrub
	Populus tremuloides	QUAKING ASPEN	FAC	Nt Tree
	Salix discolor	PUSSY WILLOW	FACW	Nt Shrub
	Salix pedicellaris	BOG WILLOW	OBL	Nt Shrub
	Vaccinium angustifolium	BLUEBERRY	FACU	Nt Shrub
	Vaccinium myrtilloides	CANADA BLUEBERRY	FACW-	Nt Shrub
Wetland Complex 24	*Andromeda glaucophylla*	BOG ROSEMARY	OBL	Nt Shrub
	Aronia prunifolia	BLACK CHOKEBERRY	FACW	Nt Shrub
	Betula pumila	BOG BIRCH	OBL	Nt Shrub
	Calamagrostis canadensis	BLUE JOINT GRASS	OBL	Nt P-Grass
	Chamaedaphne calyculata	LEATHERLEAF	OBL	Nt Shrub
	Clintonia borealis	BLUEBEAD LILY; CORN LILY	FAC+	Nt P-Forb
	Coptis trifolia	GOLDTHREAD	FACW	Nt P-Forb
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Cyperus acuminatus	UMBRELLA SEDGE	OBL	Nt A-Sedge
	Gaultheria procumbens	WINTERGREEN	FACU	Nt Shrub
	Larix laricina	TAMARACK	FACW	Nt Tree
	Ledum groenlandicum	LABRADOR TEA	OBL	Nt Shrub
	Picea mariana	BLACK SPRUCE	FACW	Nt Tree
	Salix pedicellaris	BOG WILLOW	OBL	Nt Shrub
	Vaccinium angustifolium	BLUEBERRY	FACU	Nt Shrub

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complexes 25 and 26	*Abies balsamea*	BALSAM FIR	FACW	Nt Tree
	Acer pensylvanicum	STRIPED MAPLE	FACU	Nt Tree
	Acer rubrum	RED MAPLE	FAC	Nt Tree
	Alnus rugosa	TAG ALDER	OBL	Nt Shrub
	Andromeda glaucophylla	BOG ROSEMARY	OBL	Nt Shrub
	Aronia prunifolia	BLACK CHOKEBERRY	FACW	Nt Shrub
	Aster puniceus	SWAMP ASTER	OBL	Nt P-Forb
	Bidens comosus	SWAMP TICKSEED	FACW	Nt A-Forb
	Calamagrostis canadensis	BLUE JOINT GRASS	OBL	Nt P-Grass
	Caltha palustris	MARSH MARIGOLD	OBL	Nt P-Forb
	Carex aquatilis	SEDGE	OBL	Nt P-Sedge
	Carex blanda	SEDGE	FAC	Nt P-Sedge
	Carex canescens	SEDGE	OBL	Nt P-Sedge
	Carex comosa	SEDGE	OBL	Nt P-Sedge
	Carex disperma	SEDGE	OBL	Nt P-Sedge
	Carex intumescens	SEDGE	FACW+	Nt P-Sedge
	Carex lacustris	SEDGE	OBL	Nt P-Sedge
	Carex lasiocarpa	SEDGE	OBL	Nt P-Sedge
	Carex paupercula	SEDGE	OBL	Nt P-Sedge
	Carex stipata	SEDGE	OBL	Nt P-Sedge
	Carex stricta	SEDGE	OBL	Nt P-Sedge
	Carex trisperma	SEDGE	OBL	Nt P-Sedge
	Chamaedaphne calyculata	LEATHERLEAF	OBL	Nt Shrub
	Clintonia borealis	BLUEBEAD LILY; CORN LILY	FAC+	Nt P-Forb
	Cornus canadensis	BUNCHBERRY	FAC	Nt Shrub
	Dryopteris intermedia	EVERGREEN WOODFERN	FAC	Nt Fern
	Eriophorum angustifolium	NARROW LEAVED COTTON GRASS	OBL	Nt P-Sedge
	Eriophorum spissum	COTTON GRASS	OBL	Nt P-Sedge
	Gaultheria procumbens	WINTERGREEN	FACU	Nt Shrub
	Glyceria striata	FOWL MANNA GRASS	OBL	Nt P-Grass
	Ilex verticillata	MICHIGAN HOLLY	FACW+	Nt Shrub

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complexes 25 and 26 cont.	*Impatiens capensis*	SPOTTED TOUCH ME NOT	FACW	Nt A-Forb
	Iris versicolor	WILD BLUE FLAG	OBL	Nt P-Forb
	Juncus effusus	SOFT STEMMED RUSH	OBL	Nt P-Forb
	Kalmia polifolia	SWAMP LAUREL	OBL	Nt Shrub
	Larix laricina	TAMARACK	FACW	Nt Tree
	Ledum groenlandicum	LABRADOR TEA	OBL	Nt Shrub
	LONICERA MAACKII	AMUR HONEYSUCKLE	UPL	Ad Shrub
	LONICERA XBELLA	HYBRID HONEYSUCKLE	FACU	Ad Shrub
	Maianthemum canadense	CANADA MAYFLOWER	FAC	Nt P-Forb
	NASTURTIUM OFFICINALE	WATERCRESS	OBL	Ad P-Grass
	Osmunda cinnamomea	CINNAMON FERN	FACW	Nt Fern
	Osmunda claytoniana	INTERRUPTED FERN	FAC+	Nt Fern
	Picea mariana	BLACK SPRUCE	FACW	Nt Tree
	Pinus banksiana	JACK PINE	FACU	Nt Tree
	Populus tremuloides	QUAKING ASPEN	FAC	Nt Tree
	Ranunculus recurvatus	HOOKED CROWFOOT	FACW	Nt A-Forb
	Ranunculus sceleratus	CURSED CROWFOOT	OBL	Nt A-Forb
	Ribes americanum	WILD BLACK CURRANT	FACW	Nt Shrub
	Rubus pubescens	DWARF RASPBERRY	FACW+	Nt P-Forb
	Sarracenia purpurea	PITCHER PLANT	OBL	Nt P-Forb
	Scirpus atrovirens	BULRUSH	OBL	Nt P-Sedge
	Scirpus cyperinus	WOOL GRASS	OBL	Nt P-Sedge
	Smilacina racemosa	FALSE SPIKENARD	FACU	Nt P-Forb
	Streptopus amplexifolius	TWISTED STALK	FAC+	Nt P-Forb
	Thalictrum dasycarpum	PURPLE MEADOW RUE	FACW-	Nt P-Forb
	Trientalis borealis	STARFLOWER	FAC+	Nt P-Forb
	Trillium cernuum	NODDING TRILLIUM	FAC	Nt P-Forb
	Vaccinium angustifolium	BLUEBERRY	FACU	Nt Shrub
	Vaccinium corymbosum	SMOOTH HIGHBUSH BLUEBERRY	FACW	Nt Shrub
	Vaccinium myrtilloides	CANADA BLUEBERRY	FACW-	Nt Shrub
	Vaccinium oxycoccos	SMALL CRANBERRY	OBL	Nt Shrub

Wetland Complex	*Scientific Name*	Common Name	Wetness	Physiognomy
Wetland Complexes 25 and 26 cont.	*Viola cucullata*	MARSH VIOLET	OBL	Nt P-Forb
	Viola striata	CREAM VIOLET	FACW	Nt P-Forb

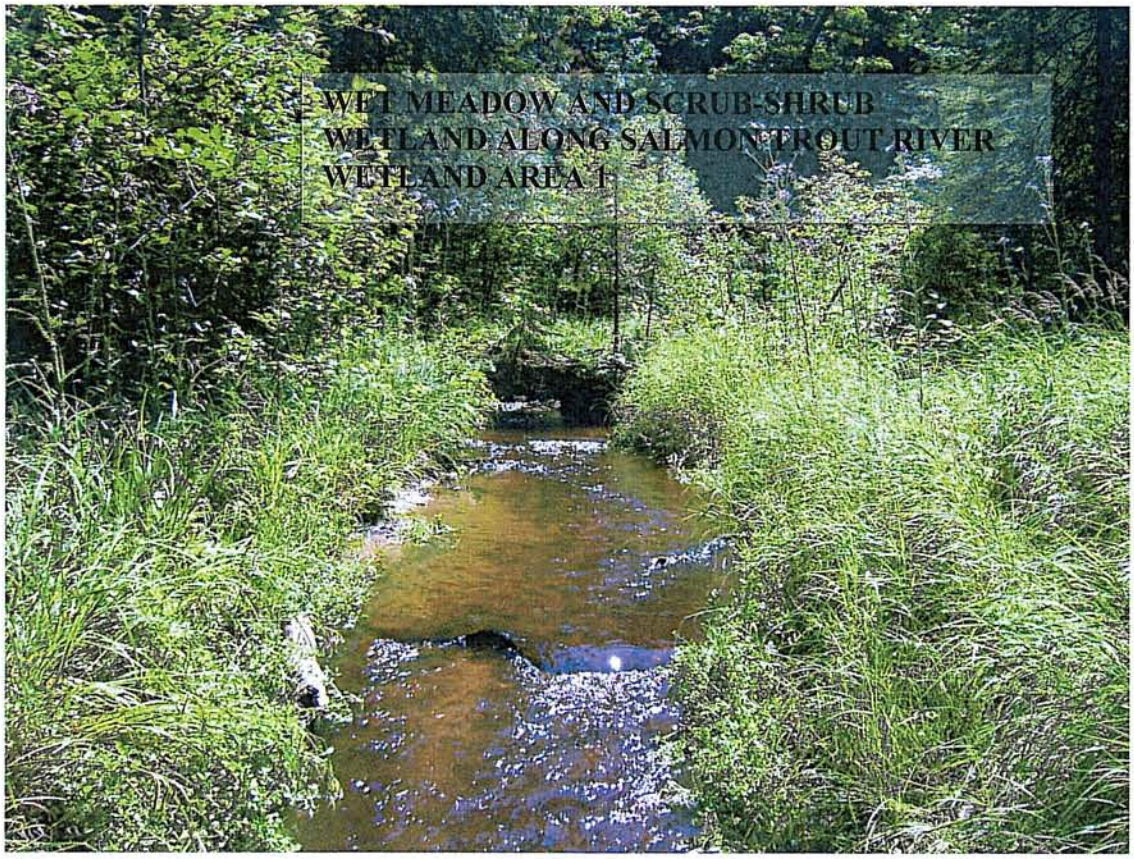
Note: Although not listed, Sphagnum moss is present within every wetland complex.

APPENDIX C

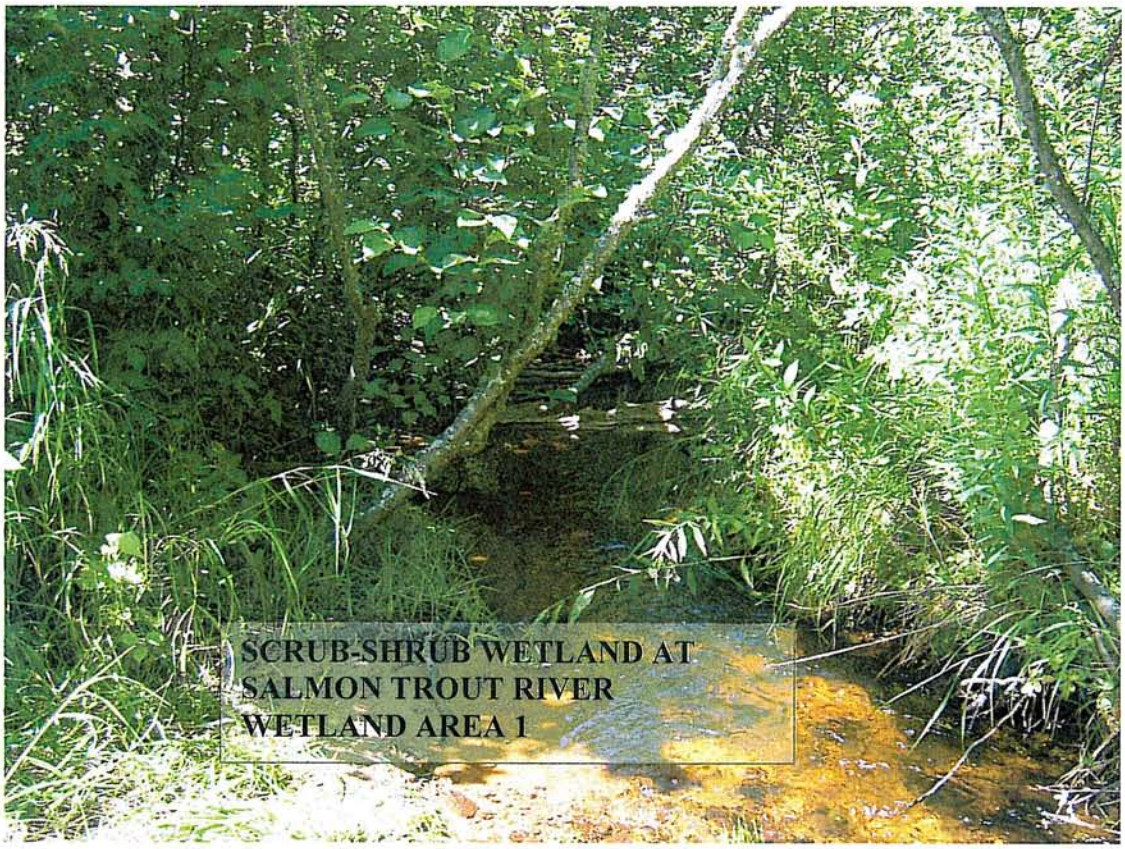
Photographs of Wetland Complexes



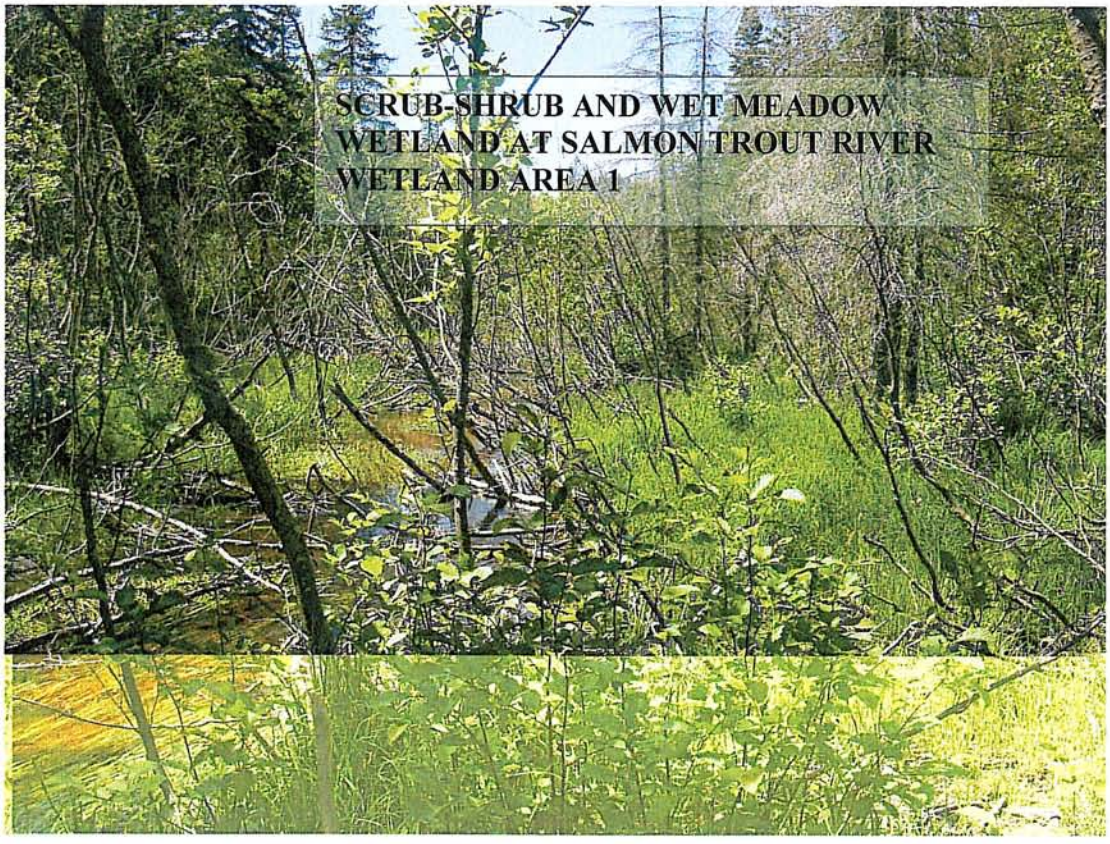
FORESTED WETLAND SEEPS
WETLAND AREAS 1 AND 2



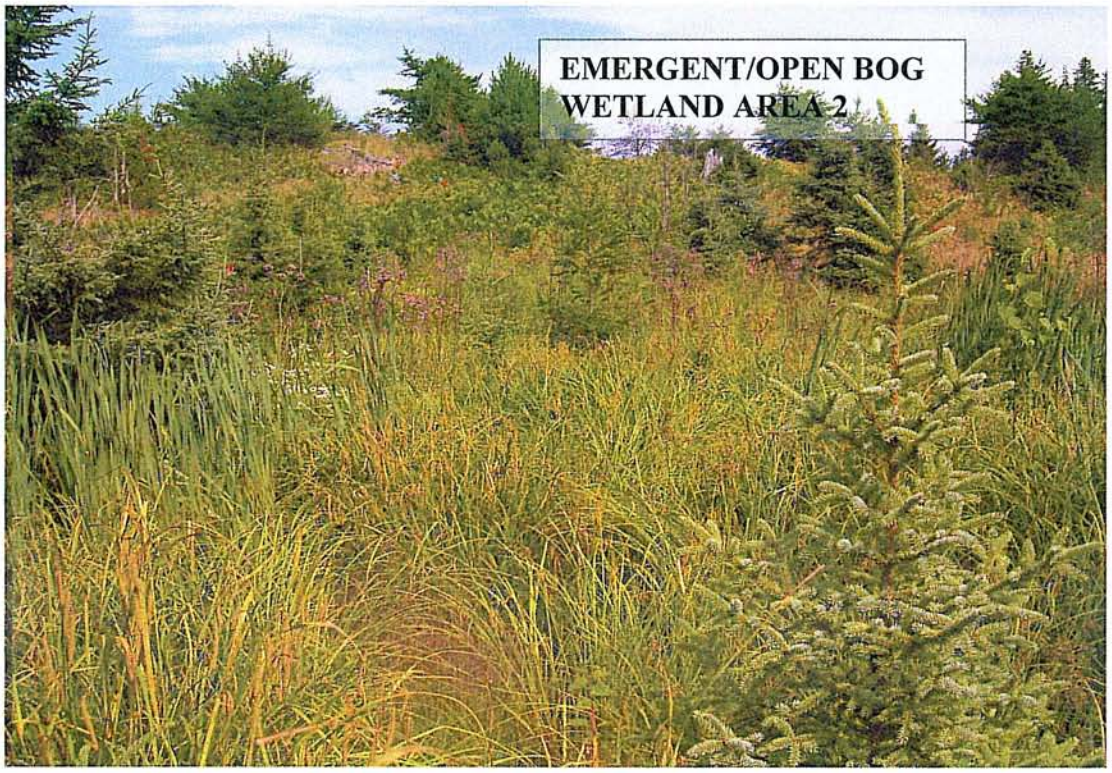
WET MEADOW AND SCRUB-SHRUB
WETLAND ALONG SALMON TROUT RIVER
WETLAND AREA 1

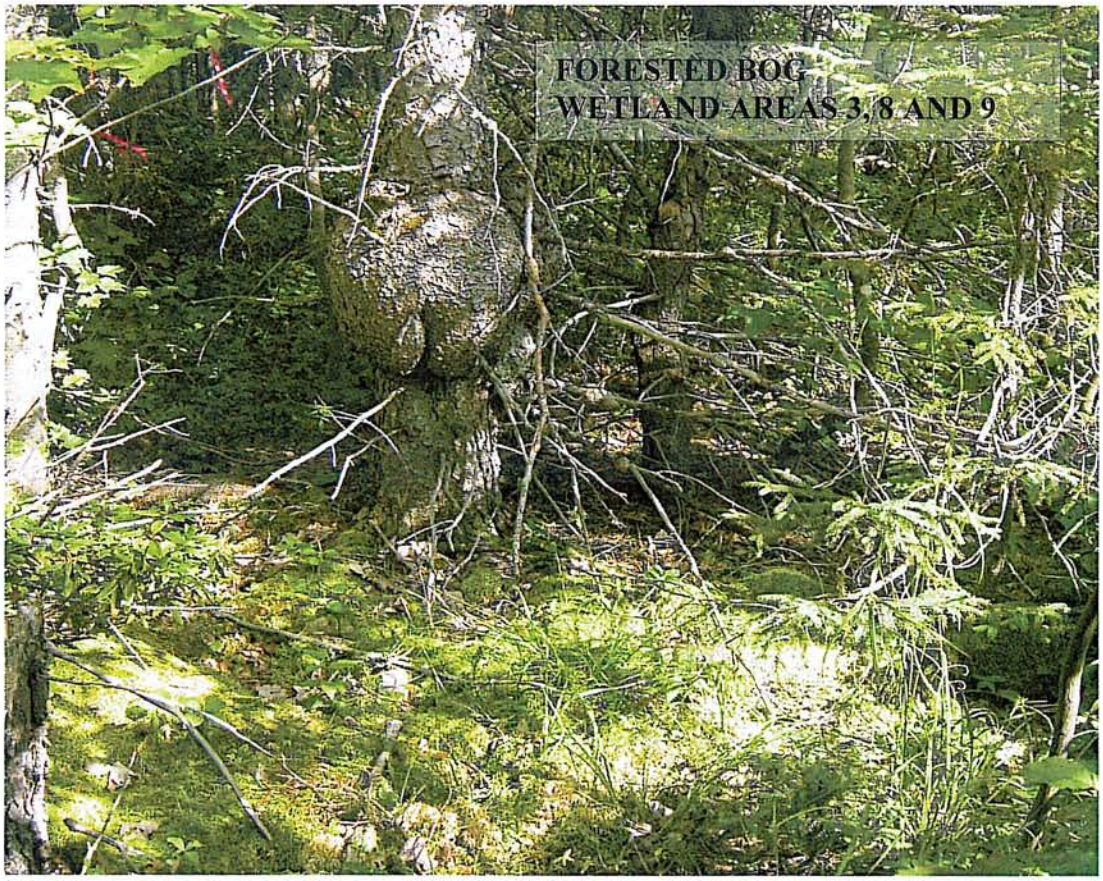


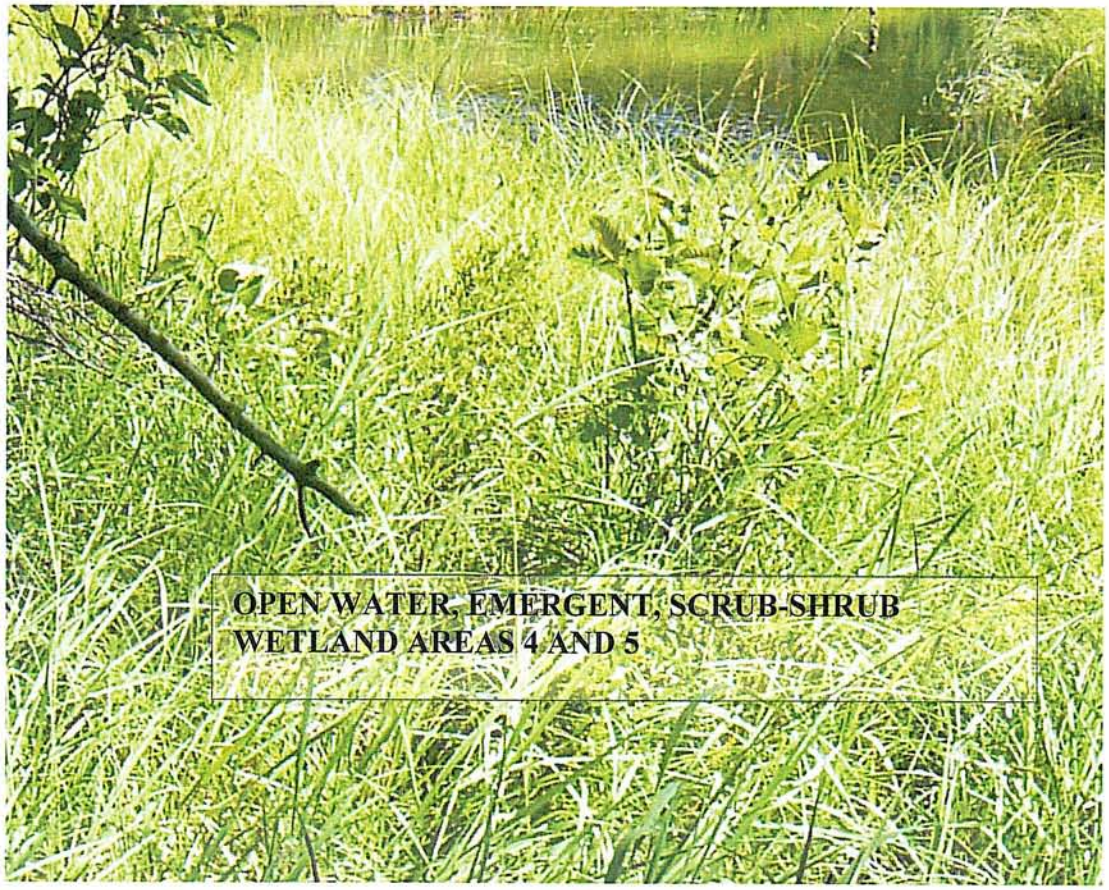
SCRUB-SHRUB WETLAND AT SALMON TROUT RIVER WETLAND AREA 1



SCRUB-SHRUB AND WET MEADOW WETLAND AT SALMON TROUT RIVER WETLAND AREA 1


EMERGENT/OPEN BOG
WETLAND AREA 2


FORESTED BOG
WETLAND AREAS 3, 8 AND 9

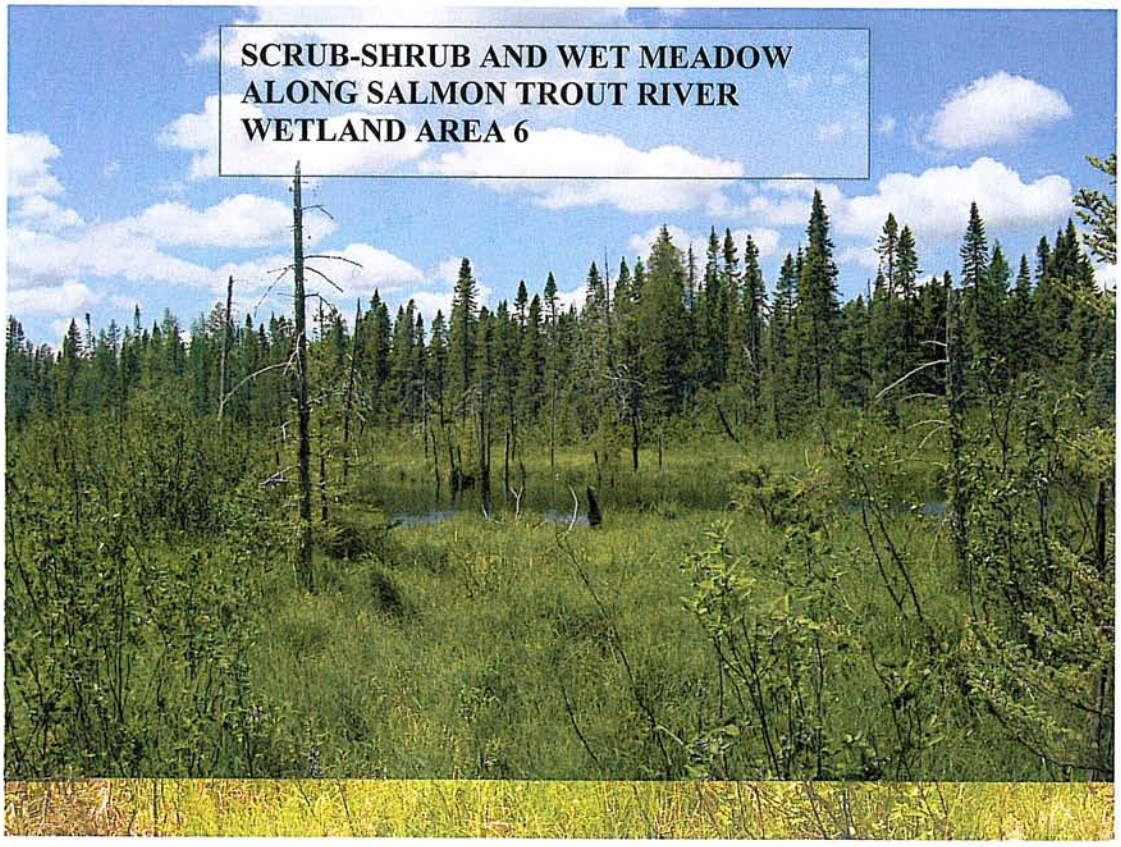


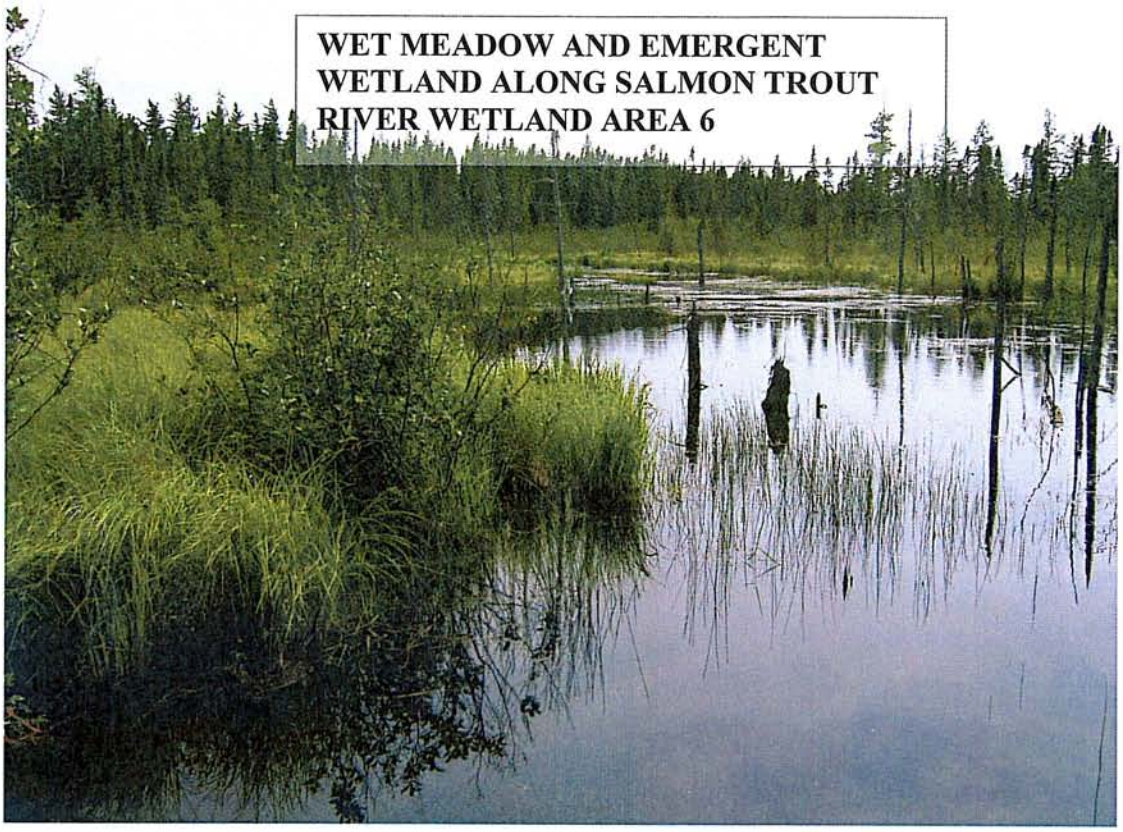
OPEN WATER, EMERGENT, SCRUB-SHRUB WETLAND AREAS 4 AND 5



WET MEADOW/EMERGENT ALONG SALMON TROUT RIVER WETLAND AREA 6


SCRUB-SHRUB AND WET MEADOW
ALONG SALMON TROUT RIVER
WETLAND AREA 6

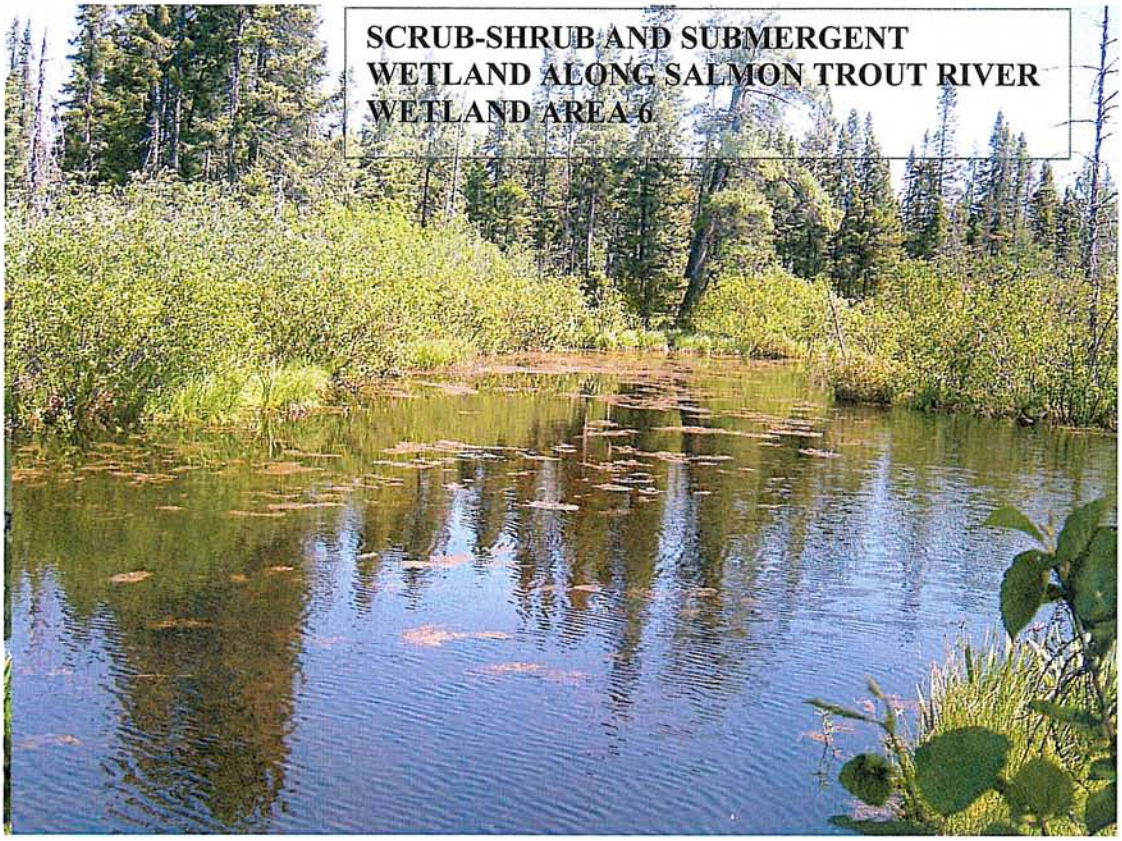

SCRUB-SHRUB AND WET MEADOW
ALONG SALMON TROUT RIVER
WETLAND AREA 6



WET MEADOW AND EMERGENT WETLAND ALONG SALMON TROUT RIVER WETLAND AREA 6



WET MEADOW AND SUBMERGENT WETLAND ALONG SALMON TROUT RIVER WETLAND AREA 6

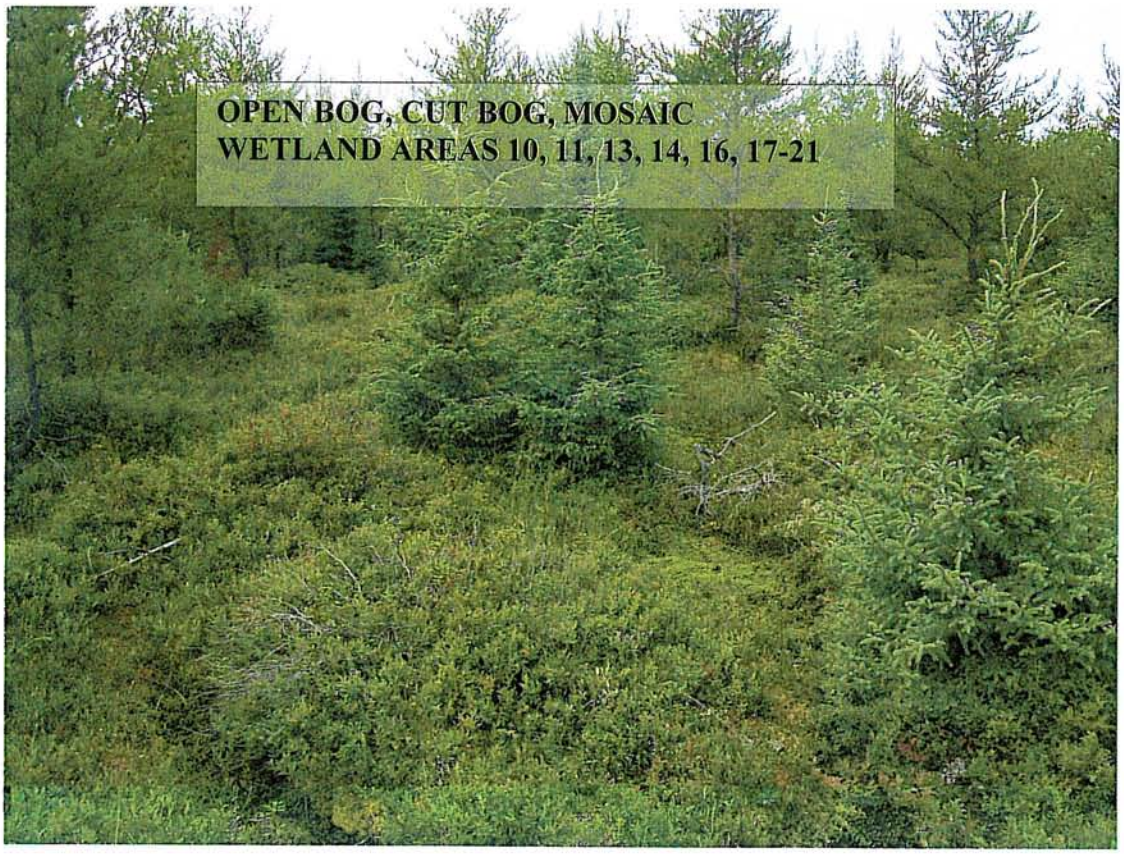


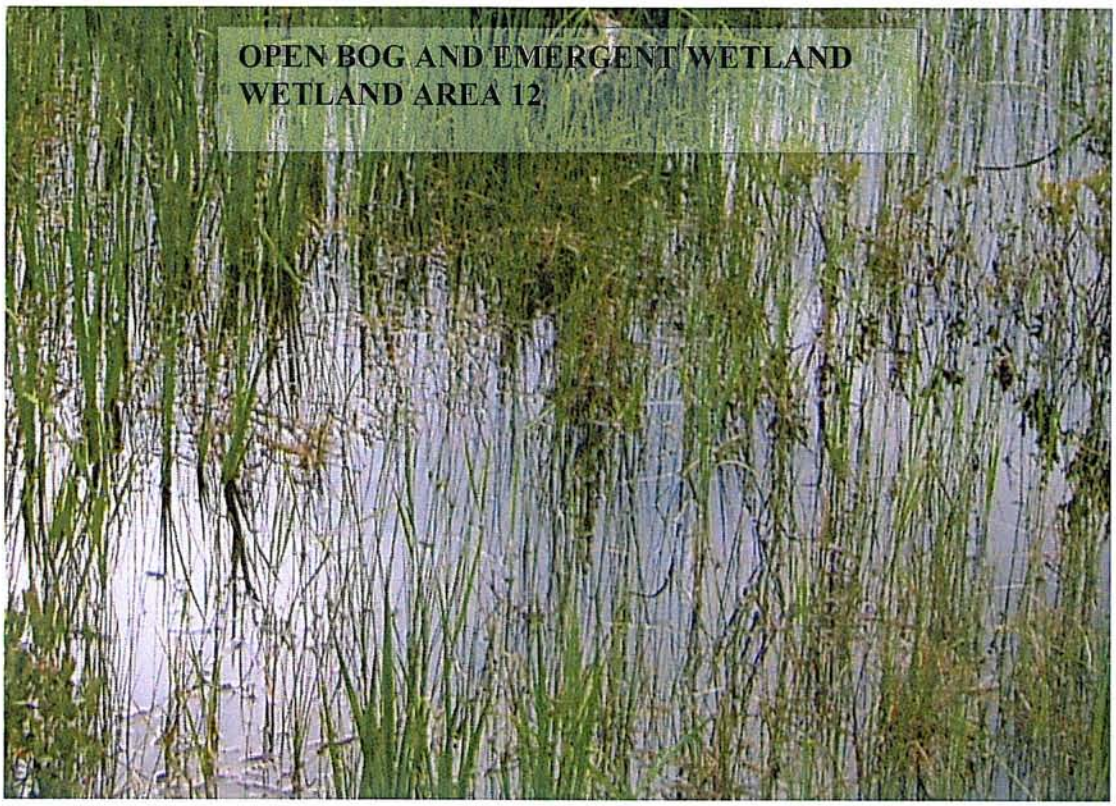
SCRUB-SHRUB AND SUBMERGENT WETLAND ALONG SALMON TROUT RIVER WETLAND AREA 6



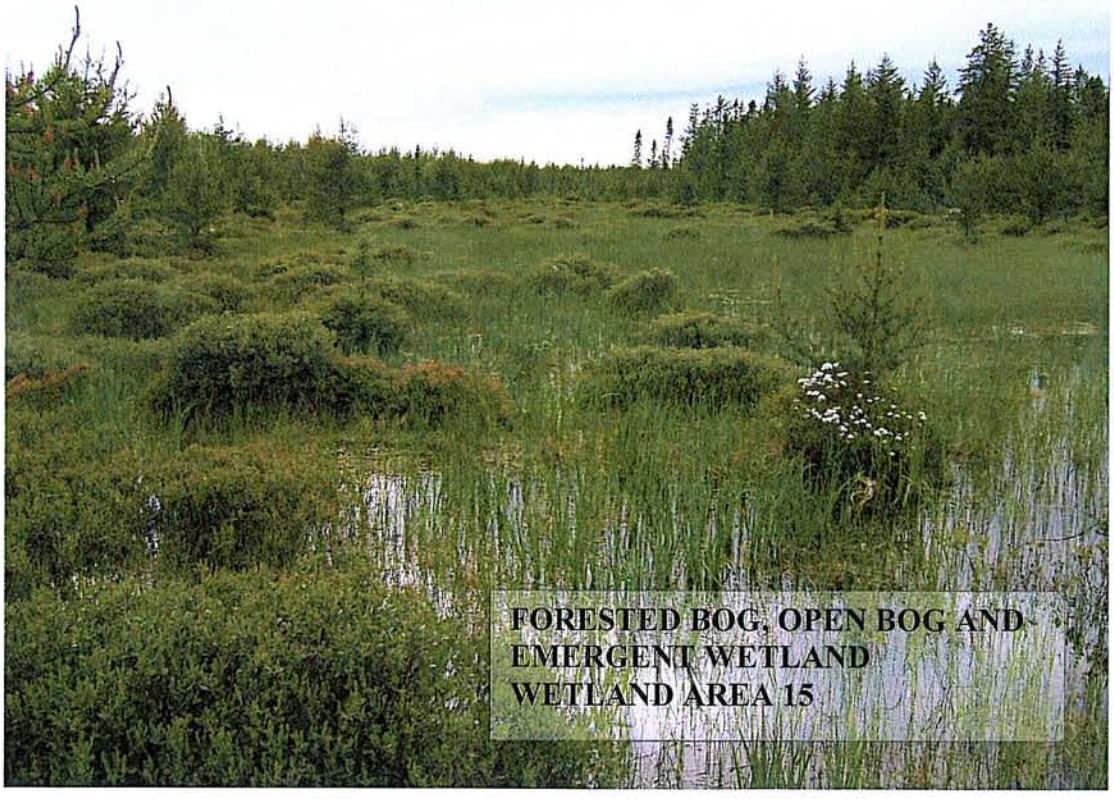
FORESTED BOG WETLAND AREA 6


FORESTED BOG
WETLAND AREA 6

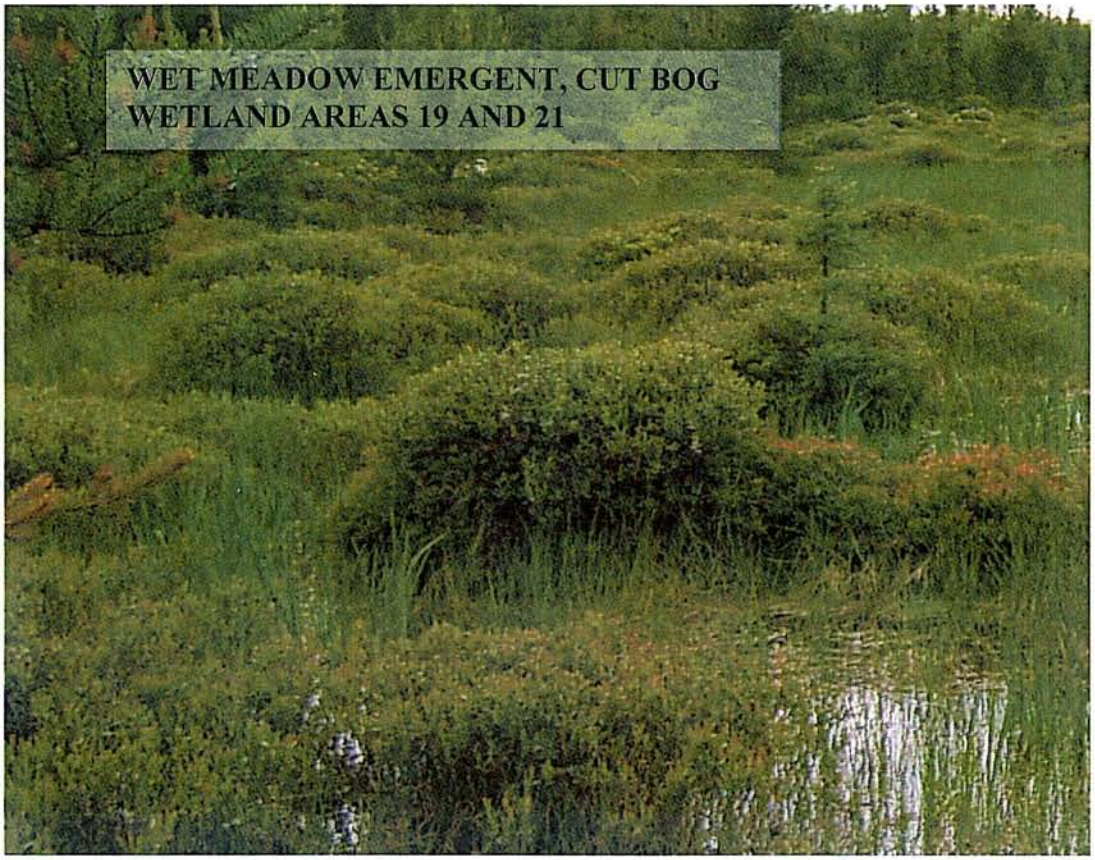

OPEN BOG, CUT BOG, MOSAIC
WETLAND AREAS 10, 11, 13, 14, 16, 17-21



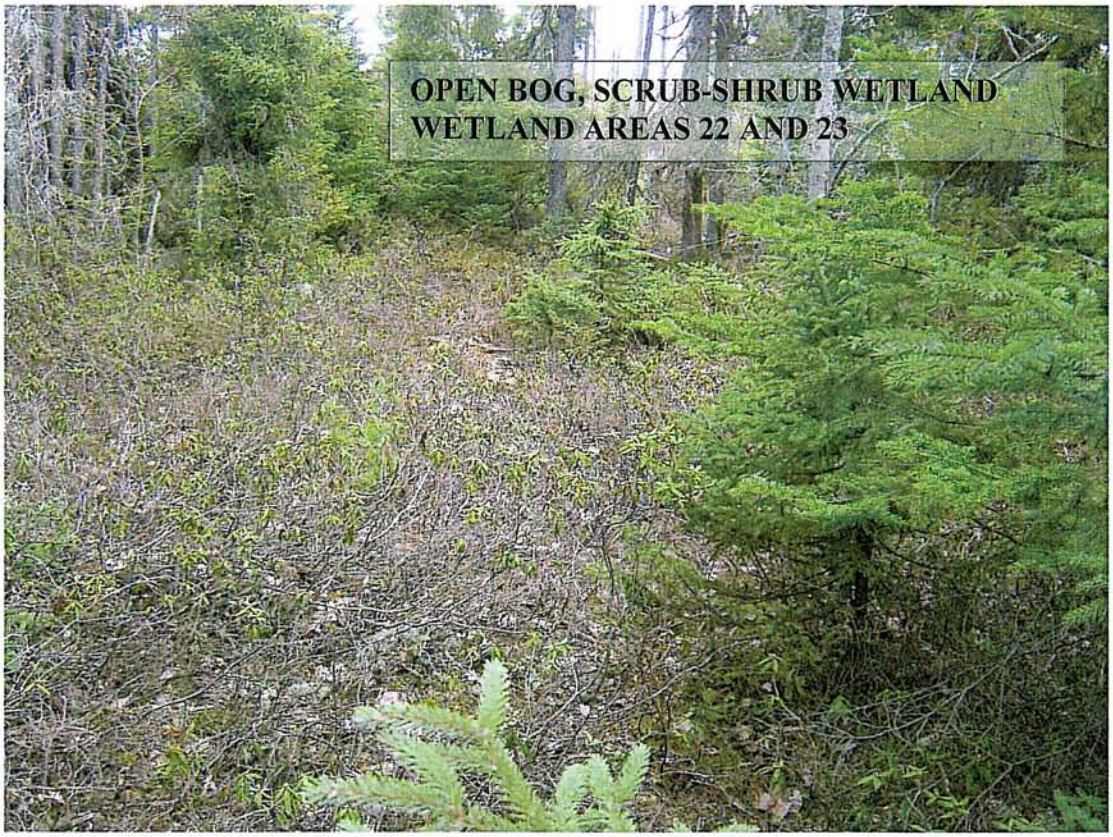
OPEN BOG AND EMERGENT WETLAND
WETLAND AREA 12



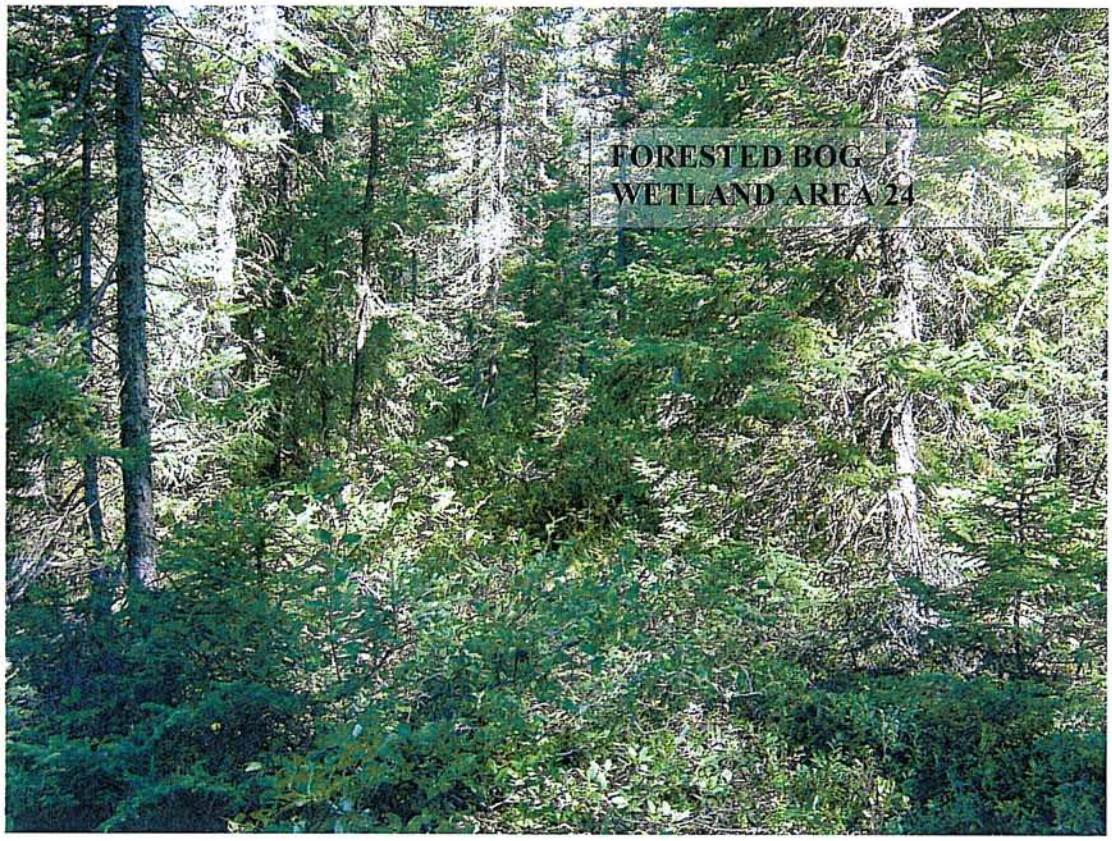
FORESTED BOG, OPEN BOG AND EMERGENT WETLAND
WETLAND AREA 15

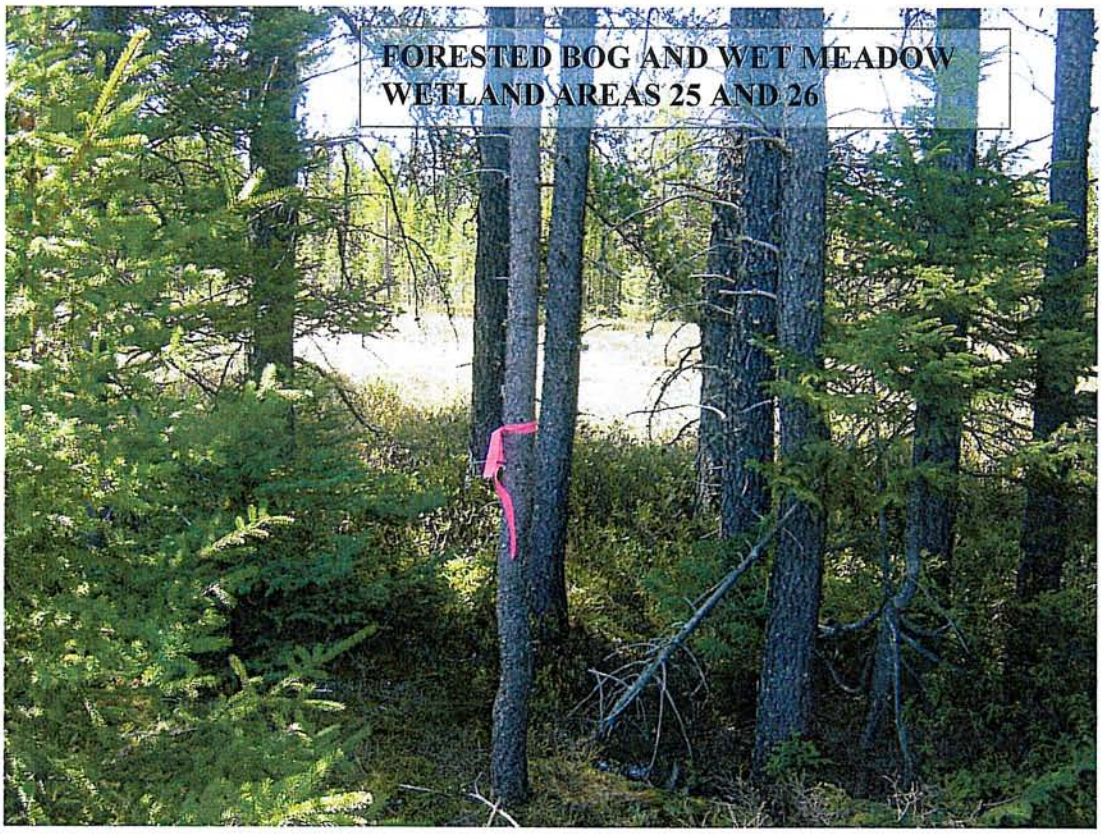


WET MEADOW EMERGENT, CUT BOG
WETLAND AREAS 19 AND 21



OPEN BOG, SCRUB-SHRUB WETLAND
WETLAND AREAS 22 AND 23


FORESTED BOG
WETLAND AREA 24


FORESTED BOG AND WET MEADOW
WETLAND AREAS 25 AND 26


OPEN BOG AND WET MEADOW
WETLAND AREAS 25 AND 26


OPEN AND FORESTED BOG
WETLAND AREA 26