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Appendix A: Data Source Documentation

Name	Scale	Date	Source
Political boundaries	1:24,000	1993	NH GRANIT/VCGI
Roads	1:24,000	2008	NH DOT/VCGI
Surface water	1:24,000	2006	NH GRANIT/USGS
Topography	1:24,000	1998	USGS/UVLSRPC
Wildlife habitat	Varies	2006	NH Fish and Game
Soils (Sullivan County)	1:24,000	2006	USDA NRCS
National Wetlands Inventory	1:24,000	2001	US Fish and Wildlife Service
Aquifers	1:24,000	2000	USGS
Public water supplies	GPS-1:24K	2006	NH DES
Wellhead protection areas	GPS-1:24K	2006	NH DES
Watershed boundaries	1:24,000	2006	NH GRANIT/USGS
100-year floodplain	1:24,000	2005	FEMA
Shoreland Protection area	1:24,000	2008	UVLSRPC
Rare species locations	generalized	2008	Natural Heritage Bureau
Public/conserved land	1:24,000	2008	NH GRANIT/VCGI
Zoning Districts	Unknown	2008	Town of Charlestown
Tax Parcels	Unknown	2008	Town of Charlestown

The proportional data scale listed here represents a ratio between distance on the map and distance on the ground. A 1:24,000 scale means that one unit of distance on the map represents 24,000 units on the ground; this is a common scale because 1 inch on the map is equal to 2,000 feet on the ground. It is important to recognize the inherent limitations to accuracy by working at this scale; the smallest area that can be delineated at this scale is 3-5 acres.

With the exception of data from NH Department of Environmental Services (NH DES), VCGI (Vermont Clearinghouse for Geographic Information), and the Town of Charlestown, all data are distributed by NH GRANIT, the state's GIS clearinghouse. Data are periodically updated, as new data sources become available and conditions on the ground change. Many base map features, including political boundaries, railroads, transmission lines, roads, and surface water, have their origin in US Geological Survey 7.5-minute topographic quadrangle maps.

NH GRANIT Data Disclaimer:

Digital data in NH GRANIT represent the efforts of the contributing agencies to record information from the cited source materials. Complex Systems Research Center (CSRC), under contract to the Office of Energy and Planning (OEP), and in consultation with cooperating agencies, maintains a continuing program to identify and correct errors in these data. OEP, CSRC, and the cooperating agencies make no claim as to the validity or reliability or to any implied uses of these data.

Appendix B: Forest Soils Group Descriptions

NH Forest Soil Groups for Sullivan County

- IA This group consists of the deeper, loamy textured, moderately well, and well-drained soils. Generally, these soils are more fertile and have the most favorable soil moisture relationships. The successional trends on these soils are toward stands of shade tolerant hardwoods, i.e., beech and sugar maple. Successional stands frequently contain a variety of hardwoods such as beech, sugar maple, red maple, white birch, yellow birch, aspen, white ash, and northern red oak in varying combinations with red and white spruce, balsam fir, hemlock, and occasionally white pine. Hardwood competition is severe on these soils. Softwood regeneration is usually dependent upon persistent hardwood control efforts.
- IB The soils in this group are generally sandy or loamy over sandy textures and slightly less fertile than those in group IA. These soils are moderately well and well drained. Soil moisture is adequate for good tree growth, but may not be quite as abundant as in group IA soils. Soils in this group have successional trends toward a climax of tolerant hardwoods, predominantly beech. Successional stands, especially those which are heavily cutover, are commonly composed of a variety of hardwood species such as red maple, aspen, paper birch, yellow birch, sugar maple, and beech, in combinations with red spruce, balsam fir, and hemlock. Hardwood competition is moderate to severe on these soils. Successful softwood regeneration is dependent upon hardwood control.
- IC The soils in this group are outwash sands and gravels. Soil drainage is somewhat excessively to excessively drained and moderately well drained. Soil moisture is adequate for good softwood growth, but is limited for hardwoods. Successional trends on these coarse textured, somewhat droughty and less fertile soils are toward stands of shade tolerant softwoods, i.e., red spruce and hemlock. Balsam fir is a persistent component in many stands, but is shorter lived than red spruce and hemlock. White pine, red maple, aspen, and paper birch are common in early and mid-successional stands. Hardwood competition is moderate to slight on these soils. Due to less hardwood competition, these soils are ideally suited for softwood production. With modest levels of management, white pine can be maintained and reproduced on these soils. Because these soils are highly responsive to softwood production, especially white pine, they are ideally suited for forest management.
- IIA This diverse group includes many of the same soils as in groups IA and IB. However, these mapping units have been separated because of physical limitations which make forest management more difficult and costly, i.e., steep slopes, bedrock outcrops, erosive textures, surface boulders, and extreme rockiness. Usually, productivity of these soils is not greatly affected by their physical limitations. However, management activities such as tree planting, thinning, and harvesting are more difficult and more costly. Due to the diverse nature of this group, it is not possible to generalize about successional trends or to identify special management opportunities.

- IIB The soils in this group are poorly drained. The seasonal high water table is generally within 12 inches of the surface. Productivity of these poorly drained soils is generally less than soils in other groups. Successional trends are toward climax stands of shade tolerant softwoods, i.e., spruce in the north and hemlock further south. Balsam fir is a persistent component in stands in northern New Hampshire and red maple is common on these soils further south. Due to abundant natural reproduction in northern New Hampshire, these soils are generally desirable for production of spruce and balsam fir, especially pulpwood. Red maple cordwood stands or slow-growing hemlock sawtimber are common in more southerly areas. However, due to poor soil drainage, forest management is somewhat limited. Severe windthrow hazard limits partial cutting, frost action threatens survival of planted seedlings, and harvesting is generally restricted to periods when the ground is frozen.
- NC Several mapping units in the survey are either so variable or have such a limited potential for commercial production of forest products they have not been considered. Often an on-site visit would be required to evaluate the situation.

Further information may be obtained from the NRCS Soil Data Set Manager, Katherine Swain at kswain@nh.nrcs.usda.gov or the NRCS State Soil Scientist, Steve Hundley at shundley@nh.nrcs.usda.gov.

This data dictionary provides essential information about the soil attributes contained in the spreadsheet tables located on the NH NRCS web site http://www.nh.nrcs.usda.gov/Soil_Data/Soil_Data or the attribute table accompanying the NRCS soil spatial data distributed through GRANIT (NHSoilMaster.dbf). The description, units of measure and labeling of soil attributes conforms to the standards of the USDA National Cooperative Soil Survey (NCSS) and the National Soil Information System (NASIS). The data contained within the tables are consistent with, and are derived from, the NRCS National Soil Information System. The tables located on the NH NRCS web site reflect the official soil dataset for New Hampshire. They take precedence over any other source of soil information.

The attribute information is specific for each survey area and reflects the most current level of understanding of soil properties and their behavioral characteristics. This data may not agree with previously published soil survey reports that represent historical records of our level of knowledge at the time of publication. Likewise, the attribute data that is provided in these tables are subject to change as the soil survey program continues to refine our ability to measure and interpret soil physical and chemical properties. It is the responsibility of the users of this information to adequately document when these attributes were retrieved for a specific purpose and that any land use decision made based on these attributes reflect the NCSS standards at that time. Because this data is subject to change, it is the user's responsibility to update their records as appropriate and not to rely on data previously downloaded from the NH NRCS web site or from the GRANIT web site. The spreadsheet table represents only a small fraction of the complete soil dataset for New Hampshire. The protocols required for presenting this data in spreadsheet format results in the grouping of some soil properties that otherwise could be separated out with more sophisticated programs. More soil data is available in a MSACCESS database format and can be found on the

NH NRCS web site. Users in need of more information should contact the NRCS Soil Data Set Manager, Katherine Swain at kswain@nh.nrcs.usda.gov.

County-wide soil surveys produced by the USDA Natural Resources Conservation Service have been typically produced at a scale of 1:20,000 or 1:24,000 and should not be altered or "blown-up" to larger scales. The smallest soil area that can be shown on the county-wide soil surveys is 3 to 5 acres in size. These maps are intended for general land use planning purposes only and are accurate for this purpose. They do not display sufficient precision to be used for site-specific applications.

APPENDIX C: The Lower Connecticut River Important Bird Area

(Source: Audubon Society of New Hampshire)

The Lower Connecticut River Important Bird Area

The New Hampshire and Vermont Important Bird Area Programs are part of a national and international effort to identify areas that provide critical habitat to birds during some stage of their annual cycle. In New Hampshire the program is a partnership of the Audubon Society of New Hampshire, the New Hampshire Fish and Game Department, and the University of New Hampshire Cooperative Extension. In Vermont it is coordinated by Audubon Vermont, a state office of the National Audubon Society. IBAs are identified based on strict scientific criteria, including 1) the presence of threatened or endangered species, 2) other species and habitats of conservation concern, and 3) areas where birds congregate during breeding, migration, or winter. It is hoped that recognition of IBAs can help guide future conservation and research efforts at areas that meet these criteria.

The Lower Connecticut River meets categories 1-3 of the IBA criteria, as follows:

1) Endangered and threatened species

Two pairs of Bald Eagles nest within this IBA, including the only known nest in Vermont near Herrick's Cove. In addition, between 4 and 10 eagles frequent this stretch of river during the winter.

2) Other habitats and species of conservation concern

Extensive wetlands associated with the Vernon and Bellows Falls dams provide habitat to several species of locally uncommon marshbirds, including Pied-billed Grebe, Least and American Bitterns, Virginia Rail, Sora, Common Moorhen, and Marsh Wren. Remnant floodplain forest associated with the river hosts birds such as Red-bellied Woodpecker, Yellow-throated Vireo, and Blue-gray Gnatcatcher, all near the northern limits of their ranges in New England. Grasslands – primarily agricultural areas – provide important feeding habitat to migrating waterfowl and other species.



3) Congregatory species

By far the most noticeable birds that use the Lower Connecticut River are waterfowl. Between October and April hundreds or thousands of ducks and geese of up to 30 species use the area, with the highest numbers generally reported in the spring. The Connecticut River may be the primary migration corridor for Snow Geese in New Hampshire, while other common species include Canada Goose, American Black Duck, Mallard, and Ring-necked Duck. Common Goldeneyes and Common Mergansers are common wintering birds on the open stretches of the river, and may congregate in large flocks during migration in the impoundment above Vernon Dam.



Other congregatory species that use the river's varied habitats include shorebirds, herons, and passerines. While the numbers of shorebirds using the Connecticut Valley are small relative to Lake Champlain or the New Hampshire seacoast, these species do stop in when water levels are relatively low. Similarly, Great Blue Herons and Great Egrets gather in the marshes in late summer. During fall and winter, old agricultural fields provide food to flocks of Horned Larks, Snow Buntings, and other seed-eaters.

For the purposes of the IBA Program, the Lower Connecticut River IBA extends from the Massachusetts Border to the area around Charlestown (NH) and Springfield (VT). It is largely restricted to the river and its floodplain, as partially delineated by topographic features such as the lower terrace formed by glacial Lake Hitchcock. Issues facing the IBA include changes in land use (agricultural conversion, development), pollution, invasive plants, and changes in hydrology associated with the two dams.

For more information on the New Hampshire Important Bird Area Program, contact:

Pam Hunt
Audubon Society of New Hampshire
3 Silk Farm Road
Concord, NH 03301

(603) 224-9909 extension 328

email: phunt@nhaudubon.org



More details on the IBA Program are also available on the N.H. Audubon web site.

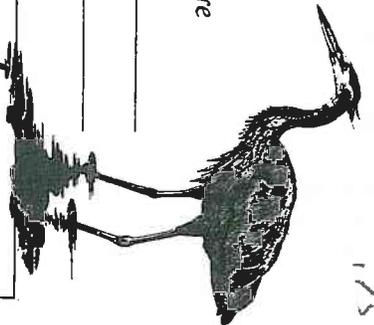


APPENDIX D: Birding Checklist for Charlestown Meadows

(Source: Stan McCumber)

Birds of New England Field Checklist

Produced by the Audubon Society of New Hampshire



Observers: _____

Notes: _____

Dates and Locations:

1. *Charlestown Meadows*
2. *Stan M. Cumber Reserve*
3. *2005-2008*

* - breeding birds
R - very rare

Looms • Grebes

R Red-throated Loon			
R Pacific Loon			
* Common Loon	✓		
Pied-billed Grebe	✓		
Horned Grebe			
Red-necked Grebe	✓		
R Eared Grebe			
R Western Grebe			

Shearwaters • Petrels

Northern Fulmar			
Cory's Shearwater			
Greater Shearwater			
Sooty Shearwater			
Manx Shearwater			
Wilson's Storm-Petrel			
* Leach's Storm-Petrel			

Gannets • Cormorants • Herons • Vultures

Northern Gannet			
* Double-crested Cormorant	✓		
* Great Cormorant			
* American Bittern	✓		
* Least Bittern			
* Great Blue Heron	✓		
* Great Egret	✓		
* Snowy Egret			
* Little Blue Heron			
* Tricolored Heron			
* Cattle Egret			
* Green Heron	✓		
* Black-crowned Night-Heron			
* R Yellow-crowned Night-Heron			
* Glossy Ibis			
R Black Vulture			
R Turkey Vulture	✓		

Swans • Geese • Ducks

R Greater White-fronted Goose	✓		
Snow Goose	✓		
* Canada Goose	✓		
Bant			
* Mute Swan			
R Tundra Swan			
* Wood Duck	✓		
* Gadwall	✓		
R Eurasian Wigeon			
* American Wigeon	✓		
* American Black Duck	✓		
* Mallard	✓		
* Blue-winged Teal	✓		
* Northern Shoveler	✓		
* Northern Pintail	✓		
* Green-winged Teal	✓		

Canvassack

Redhead			
* Ring-necked Duck	✓		
R Tufted Duck			
Greater Scaup	✓		
Lesser Scaup			
King Eider			
* Common Eider			
Hartquon Duck			
Surf Scoter			
White-winged Scoter			
Black Scoter			
Oldsquaw			
Bufflehead			
* Common Goldeneye	✓		
Barrow's Goldeneye	✓		
* Hooded Merganser	✓		
* Common Merganser	✓		

* American Pipit	✓		
Bohemian Waxwing	✓		
* Cedar Waxwing	✓		
Warblers			
* Blue-winged Warbler			
* Golden-winged Warbler			
* Tennessee Warbler			
R Orange-crowned Warbler			
* Nashville Warbler	✓		
* Northern Parula	✓		
* Yellow Warbler	✓		
* Chestnut-sided Warbler	✓		
* Magnolia Warbler	✓		
* Cape May Warbler	✓		
* Black-throated Blue Warbler	✓		
* Yellow-rumped Warbler	✓		
* Black-throated Green Warbler	✓		
* Blackburnian Warbler			
R Yellow-throated Warbler			
* Pine Warbler	✓		
* Prairie Warbler			
* Palm Warbler	✓		
* Bay-breasted Warbler			
* Blackpoll Warbler	✓		
* R Cerulean Warbler	✓		
* Black-and-white Warbler	✓		
* American Redstart	✓		
* R Prothonotary Warbler			
* Worm-eating Warbler			
* Ovenbird	✓		
* Northern Waterthrush	✓		
* Louisiana Waterthrush			
* R Kentucky Warbler			
R Connecticut Warbler			
* Mourning Warbler			
* Common Yellowthroat	✓		
* Hooded Warbler			
* Wilson's Warbler	✓		
* Canada Warbler			
* Yellow-breasted Chat			
Tanagers • Sparrows			
R Summer Tanager			
* Scarlet Tanager	✓		
R Western Tanager			
* Eastern Towhee	✓		
American Tree Sparrow	✓		
* Chipping Sparrow	✓		
R Clay-colored Sparrow			
* Field Sparrow	✓		
* Vesper Sparrow			
R Lark Sparrow			

* Savannah Sparrow	✓		
* Grasshopper Sparrow			
* R Henslow's Sparrow			
* Saltmarsh Sharp-tailed Sparrow			
Nelson's Sharp-tailed Sparrow			
* Seaside Sparrow			
* Fox Sparrow	✓		
* Song Sparrow	✓		
* Lincoln's Sparrow			
* Swamp Sparrow	✓		
* White-throated Sparrow	✓		
R Harris's Sparrow			
White-crowned Sparrow	✓		
* Dark-eyed Junco	✓		
Lapland Longspur	✓		
Snow Bunting	✓		
* Northern Cardinal	✓		
* Rose-breasted Grosbeak	✓		
R Black-headed Grosbeak			
R Blue Grosbeak			
* Indigo Bunting	✓		
R Dickcissel			
Blackbirds • Finches			
* Bobolink	✓		
* Red-winged Blackbird	✓		
* Eastern Meadowlark	✓		
Western Meadowlark			
R Yellow-headed Blackbird			
* Rusty Blackbird			
* Common Grackle	✓		
* Brown-headed Cowbird	✓		
* Orchard Oriole			
* Baltimore Oriole	✓		
R Bullock's Oriole			
* Pine Grosbeak			
* Purple Finch	✓		
* House Finch	✓		
* Red Crossbill			
* White-winged Crossbill			
Common Redpoll			
R Hoary Redpoll			
* Pine Siskin			
* American Goldfinch	✓		
* Evening Grosbeak	✓		
* House Sparrow	✓		
Total Species			

This checklist is produced by the Audubon Society of New Hampshire. It is based on a design by Lynn C. Hanger, ASNH (11/99)

* Red-breasted Merganser					
* Ruddy Duck					
Osprey • Eagles • Hawks • Falcons					
* Osprey	✓				
* Bald Eagle	✓				
* Northern Harrier	✓				
* Sharp-shinned Hawk	✓				
* Cooper's Hawk	✓				
* Northern Goshawk					
* Red-shouldered Hawk					
* Broad-winged Hawk	✓				
* Red-tailed Hawk	✓				
* Rough-legged Hawk					
*R Golden Eagle	✓				
* American Kestrel	✓				
* Merlin	✓				
* Gyrfalcon					
* Peregrine Falcon	✓				
Pheasants • Rails • Coot • Crane					
*R Gray Partridge					
* Ring-necked Pheasant	✓				
* Ruffed Grouse	✓				
* Spruce Grouse					
* Wild Turkey	✓				
* Northern Bobwhite					
* Yellow Rail					
* Clapper Rail					
*R King Rail					
* Virginia Rail					
* Sora					
* Purple Gallinule					
* Common Moorhen					
* American Coot					
*R Sandhill Crane	✓				
Plovers • Sandpipers • Snipe • Phalaropes					
* Black-bellied Plover	✓				
* American Golden-Plover					
* Semipalmated Plover	✓				
* Piping Plover					
* Killdeer	✓				
* American Oystercatcher					
* American Avocet					
* Greater Yellowlegs	✓				
* Lesser Yellowlegs	✓				
* Solitary Sandpiper	✓				
* Willet					
* Spotted Sandpiper	✓				
* Upland Sandpiper					
* Whimbrel					
* Hudsonian Godwit					
*R Marbled Godwit					

* Ruddy Turnstone					
* Red Knot					
* Sanderling					
* Semipalmated Sandpiper	✓				
* Western Sandpiper					
* Least Sandpiper	✓				
* White-rumped Sandpiper					
* Baird's Sandpiper					
* Pectoral Sandpiper	✓				
* Purple Sandpiper					
* Dunlin					
*R Curlew Sandpiper					
* Stilt Sandpiper					
* Buff-breasted Sandpiper					
*R Ruff					
* Short-billed Dowitcher					
* Long-billed Dowitcher					
* Common Snipe	✓				
* American Woodcock	✓				
* Wilson's Phalarope					
* Red-necked Phalarope					
* Red Phalarope					
Jaegers • Gulls • Terns • Auks					
* Great Skua					
*R South Polar Skua					
* Pomarine Jaeger					
* Parasitic Jaeger					
* Long-tailed Jaeger					
* Laughing Gull					
* Little Gull					
* Black-headed Gull					
* Bonaparte's Gull	✓				
* Ring-billed Gull	✓				
* Herring Gull					
* Iceland Gull	✓				
*R Lesser Black-backed Gull					
* Glaucous Gull					
* Great Black-backed Gull					
* Sabine's Gull					
* Black-legged Kittiwake					
*R Gull-billed Tern					
* Caspian Tern					
*R Royal Tern					
*R Sandwich Tern					
* Roseate Tern					
* Common Tern					
* Arctic Tern					
* Forster's Tern					
* Least Tern					
*R Sooty Tern					
* Black Tern					

* Black Skimmer					
* Dovekie					
* Common Murre					
* Thick-billed Murre					
* Razorbill					
* Black Guillemot					
* Atlantic Puffin					
Doves • Cuckoos • Owls					
* Rock Dove	✓				
* Mourning Dove	✓				
* Black-billed Cuckoo	✓				
* Yellow-billed Cuckoo					
* Barn Owl					
* Eastern Screech-Owl					
* Great Horned Owl					
* Snowy Owl					
*R Northern Hawk-Owl					
* Barred Owl	✓				
*R Great Gray Owl					
* Long-eared Owl					
* Short-eared Owl	✓				
*R Boreal Owl					
* Northern Saw-whet Owl					
Nighthawks • Hummingbird • Woodpeckers					
* Common Nighthawk	✓				
*R Chuck-will's Widow					
* Whip-poor-will					
* Chimney Swift	✓				
* Ruby-throated Hummingbird	✓				
* Belted Kingfisher	✓				
* Red-headed Woodpecker					
* Red-bellied Woodpecker	✓				
* Yellow-bellied Sapsucker	✓				
* Downy Woodpecker	✓				
* Hairy Woodpecker	✓				
*R Three-toed Woodpecker					
* Black-backed Woodpecker					
* Northern Flicker	✓				
* Pileated Woodpecker	✓				
Flycatchers • Shrikes • Vireos • Jays • Crows					
* Olive-sided Flycatcher					
* Eastern Wood-Pewee					
* Yellow-bellied Flycatcher					
* Acadian Flycatcher	✓				
* Alder Flycatcher	✓				
* Willow Flycatcher	✓				
* Least Flycatcher	✓				
* Eastern Phoebe	✓				
* Great Crested Flycatcher	✓				
*R Western Kingbird					
* Eastern Kingbird	✓				

*R Longhead Shrike					
* Northern Shrike					
* White-eyed Vireo					
* Yellow-throated Vireo					
* Blue-headed Vireo	✓				
* Warbling Vireo	✓				
* Philadelphia Vireo					
* Red-eyed Vireo	✓				
* Gray Jay					
* Blue Jay	✓				
* American Crow	✓				
* Fish Crow					
* Common Raven	✓				
Larks • Swallows • Chickadees • Nuthatches					
* Horned Lark	✓				
* Purple Martin					
* Tree Swallow	✓				
* N. Rough-winged Swallow	✓				
* Bank Swallow	✓				
* Cliff Swallow	✓				
* Barn Swallow	✓				
* Black-capped Chickadee	✓				
* Boreal Chickadee	✓				
* Tufted Titmouse	✓				
* Red-breasted Nuthatch	✓				
* White-breasted Nuthatch	✓				
* Brown Creeper	✓				
Wrens • Kinglets • Thrushes					
* Carolina Wren	✓				
* House Wren	✓				
* Winter Wren	✓				
*R Sage Wren					
* Marsh Wren	✓				
* Golden-crowned Kinglet					
* Ruby-crowned Kinglet	✓				
* Blue-gray Gnatcatcher	✓				
*R Northern Wireeater					
* Eastern Bluebird	✓				
* Veery	✓				
* Gray-checked Thrush					
* Bicknell's Thrush					
* Swainson's Thrush					
* Hermit Thrush	✓				
* Wood Thrush	✓				
* American Robin	✓				
*R Varied Thrush					
Mockingbirds • Pipits • Waxwings					
* Gray Catbird	✓				
* Northern Mockingbird	✓				
* Brown Thrasher	✓				
* European Starling	✓				

Appendix E: Wildlife Sighting in Charlestown

Compiled by Jim Fowler of Charlestown (with additions by Jan Lambert of Charlestown)

Please note- This list includes sightings from 2008, and also sightings from past years.

Site 1 – Cornfields and Oxbow Beaver Pond south of Hidden Valley Rd.

BIRDS

Many ducks and migratory waterfowl, most unidentified, but including:

Canada Goose	<i>Branta canadensis</i>	common in spring and fall
Mallard	<i>Anas platyrhynchos</i>	common spring and fall – always at least one mated pair that nests here in the summer
Common Merganser	<i>Lophodytes cucullatus</i>	At least two or three pairs in spring and fall. I've seen them wing dance across the beaver pond in the spring.

Other migratory birds:

Golden Eagle	<i>Aquila chrysaetos</i>	I've lived here for fourteen years and twice seen the eagles in the fall in flocks of four and five.
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Birds who spend the summers if not year round:

Black-capped		
Chickadee	<i>Parus atricapillus</i>	likely the most common bird
Tufted Titmouse	<i>Parus bicolor</i>	very common
White-breasted		
Nuthatch	<i>Sitta carolinensis</i>	very common
Red-breasted		
Nuthatch	<i>Sitta canadensis</i>	uncommon
American Robin	<i>Turdus migratorius</i>	very common
Blue Jay	<i>Cyanocitta cristata</i>	very common
Mourning Dove	<i>Zenaida macroura</i>	very common
Slate-colored Junco	<i>Junco hyemalis</i>	very common in winter
Rose-breasted		
Grosbeak	<i>Pheucticus ludovicianus</i>	a pair or two every summer
American Goldfinch	<i>Carduelis tristis</i>	very common
Pine Siskin	<i>Carduelis pinus</i>	if heavy snowfall winters, common
House Finch	<i>Carpodacus mexicanus</i>	two or three pairs in summer
Northern Cardinals	<i>Cardinalis cardinalis</i>	common year round
Gray Catbird	<i>Dumetella carolinensis</i>	common around the cornfield
Cedar Waxwings	<i>Bombycilla cedrorum</i>	uncommon; in the grapes in winter
White-throated		
Sparrow	<i>Zonotrichia leucophrys</i>	common along brook that runs through the cornfields
Chipping sparrow	<i>Spizella passerina</i>	common

There are many warblers that summer in the brush along the beaver pond. I'm only sure of one.

Yellow Warbler	<i>Dendroica petechia</i>	common
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	very common – my herald of spring
American Crow	<i>Corvus brachyrhynchos</i>	very common in the cornfield
Barn Swallow	<i>Hirundo rustica</i>	common over the evening fields
Downy Woodpecker	<i>Picoides pubescens</i>	very common
Hairy Woodpecker	<i>Picoides villosus</i>	common
Common Flicker	<i>Colaptes auratus</i>	common in cornfield
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	rare – the first time I saw it, I verified it with the Ascutney area Audubon chapter.
Pileated Woodpecker	<i>Dryocopus pileatus</i>	though thought of as rare, there are many pairs in town, one in this area
Great Blue Heron	<i>Ardea herodias</i>	one pair nests somewhere around the beaver pond every year
American Bittern	<i>Botaurus lentiginosus</i>	I've twice seen one in the pond and heard them occasionally in the spring
Wild Turkey	<i>Meleagris gallopavo</i>	There's a large flock who live in Hemingway's fields up by route 12 that occasionally come down to the cornfields.
Ring-necked Pheasant	<i>Phasianus colchicus</i>	stocked in the cornfield, twice have survived the winter
Ruffed Grouse	<i>Bonasa umbellus</i>	at least one pair down beside the cornfield. One visits my feeding area
Bald Eagle	<i>Haliaeetus leucocephalus</i>	I see one three or four times a year hunting over the beaver pond
Red-tailed Hawk	<i>Buteo jamaicensis</i>	seen numerous times over cornfields
Broad-winged Hawk	<i>Buteo platypterus</i>	uncommon
I've seen other Buteo hawks, but those two are the only ones I can identify.		
Cooper's Hawk	<i>Accipiter cooperii</i>	Once; one was found the next day in Claremont, dead of EEE
Peregrine Falcon	<i>Falco peregrinnus</i>	I haven't seen these in four or five years. They used to nest in the cliffs across the river

On 24 November this year I saw a pointed wing raptor which was smaller than the peregrine. It was diving at five mourning doves backed up against three cornstalks the farmer left behind. I think it was likely a Merlin *Falco columbarius* but I can't verify it.

I'm probably leaving out some birds I have seen, maybe even a few common ones.

ANIMALS

Little Brown

Myotis Bat	<i>Myotis lucifugus</i>	Common – one flies inside my house at least once a year
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Eastern Chipmunk	<i>Tamias striatus</i>	very common around the cornfields
Gray Squirrel	<i>Sciurus carolinensis</i>	very common, as most of the woods around the cornfields are oak
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	uncommon
Muskrat	<i>Ondatra zibethicus</i>	common in beaver pond and brook
Beaver	<i>Castor canadensis</i>	common, at least one in the pond at all times though the farmer traps
Red Fox	<i>Vulpes vulpes</i>	common
Gray Fox	<i>Urocyon cinereoargenteus</i>	I've had one in my yard a few times under the bird feeder
Raccoon	<i>Procyon lotor</i>	Tracks along brook, once the neighborhood dogs killed one
Black Bear	<i>Ursus americanus</i>	Once seen crossing the cornfields
Striped Skunk	<i>Mephitis mephitis</i>	very common in neighborhood
The color variation in the skunks is unusual; most here have very wide white stripes, so much so that a couple look almost all white.		
Mink	<i>Mustela vison</i>	Twice have had a pair winter in the brook's bank
River Otter	<i>Lutra canadensis</i>	Some occasionally come up from the river, once a pair wintered in the brook.
White-tailed Deer	<i>Odocoileus virginianus</i>	common
Moose	<i>Alces alces</i>	A couple years ago a moose spent some of the summer in the swamp around the beaver pond

REPTILES AND AMPHIBIANS

There are numerous turtles in the pond. I once met a man down there who was studying some rare turtle. He was closed mouth so I didn't get the species from him. I'm only going to identify the one turtle species that I have seen.

Snapping Turtle	<i>Chelydra serpentina</i>	Most springs I see them digging
Eastern Garter Snake	<i>Thamnophis sitalis</i> (spp)	common
Milk Snake	<i>Lampropeltis traingulum</i>	uncommon – I've seen three, I'm not sure which milk snake they are. I would guess the Eastern.
Blue-spotted Salamander	<i>Ambystoma laterale</i>	Seen once, squashed by a car alongside the cornfield in spring
American Toad	<i>Bufo americanus</i> (spp)	common
Gray Treefrog	<i>Hyla versicolor</i>	uncommonly seen, lots of spring calls
Spring Peeper	<i>Pseudacris crucifer</i>	common
Green Frog	<i>Rana clamitans</i>	very common

INSECTS

The first three or four years I lived here the Monarch Butterflies *Danaus plexippus* would congregate in the fall in the cornfields, but then it stopped. I've seen hundreds all together down

there. There are also many species of dragonflies. I don't know them well enough to identify them.

Site 2 – Reservoir Town Forest off North Hemlock Road- (Jim)

While in grad school, I did my flora study on this forest so spent a lot of time there. I also used to walk or run the trails daily. I still do get out a few times a month and do trail maintenance.

BIRDS

Chickadee	<i>Parus atricapillus</i>	very common
White-breasted Nuthatch	<i>Sitta carolinensis</i>	common
Blue Jay	<i>Cyanocitta cristata</i>	common
Downy Woodpecker	<i>Picoides pubescens</i>	common
Pileated Woodpecker	<i>Dryocopus pileatus</i>	I can't go out without hearing one call
Belted Kingfisher	<i>Megaceryle alcyon</i>	A pair around the reservoir
Northern Raven	<i>Corvus corax</i>	There is a pair nesting somewhere in the area. I've seen them numerous times soaring over

ANIMALS

White-tailed Deer	<i>Odocoileus virginianus</i>	common
Beaver	<i>Castor canadensis</i>	uncommon, sometimes winter over in the reservoir, now that the dam has been breached, this might not happen any longer
Red Squirrel	<i>Tamiasciurus hudsonicus</i>	very common
Gray Squirrel	<i>Sciurus carolinensis</i>	common
Eastern Chipmunk	<i>Tamias striatus</i>	very common
Black Bear	<i>Ursus americanus</i>	rare, one early winter I tracked a bear through this forest and through the Hall Pond Forest, before I found steaming scat and decided to stop

REPTILES AND AMPHIBIANS

Red Eft

(Red-spotted Newt) *Notophthalmus viridescens* very common

Site 3 – downtown and other area sites

Fling Road – above dump

Spotted Salamander *Ambystoma maculatum* every spring they cross and get squashed by the traffic

Downtown

Striped Skunk *Mephitis mephitis* common
Opossum *Didelphis virginiana* Twice I've road-killed opossums on the southern end of Main Street

Bird – Old Claremont Road by Peach Blow Farm- 1 pair Mockingbirds nesting

Additions by Jan- In the village of Charlestown I have commonly seen or heard cardinals, robins, rock doves(pigeons), mockingbirds, and big flocks of some kind of black birds. A birder told me that the peregrine falcons come over from the cliffs along Rt. 5 in VT to prey on the Charlestown pigeons!

I have seen a flock of 75 turkeys, up on the hill behind the village on John Olsen's property.

Site 4-Adjacent to Connecticut River south of town (Jan)

Beaver	<i>Castor canadensis</i>	common as bank beaver in river
Northern Leopard Frog	<i>Rana pipiens</i>	rare, found 4; on record with RAARP
Pickerel Frog	<i>Rana palustris</i>	uncommon
Wood Frog	<i>Rana sylvatica</i>	common in early spring

Also Green Frogs, Grey Tree Frogs, American Toads, Spring Peepers, Snapping Turtles, and Painted Turtles.

Fields along river host migratory waterfowl including Canada Goose, Snow Goose, white egrets (not sure of species), mallards, and kestrels (*Falco sparverius*). Buffer zones planted along edge have many grassland sparrows. Sand banks have colonies of bank swallows (*Riparia riparia*.)

Note: It is a big concern of mine that the area directly south of town along Rt. 12 is a prime amphibian migration area, since they have to cross the highway from the woods to the east to breed in the meadow vernal pools and Dickerson Brook. Many get crushed by vehicles.

Site 5-Little Sugar River, N. Charlestown village (Jan)

Wood Turtle	<i>Clemmys insculpta</i>	rare, found one, reported to RAARP
Mudpuppy	<i>Necturus maculosus</i>	found a few in larval stage near Conn. R.

Site 6-Upland hardwood forest-Hemlock-Acworth-Sam Putnam Roads (Jan)

Note: I'm not repeating scientific names that have appeared previously.

BIRDS

Most common- Black-capped Chickadee, Robin, Crow, Raven, Slate-colored Junco, Blue Jay, Mourning Dove, White-Breasted Nuthatch, Downy Woodpecker, Turkey

Common-

Phoebe	<i>Sayornis phoebe</i>
Hummingbird	<i>Archilochis colubris</i>
Veery	<i>Catharus fuscescens</i>
Wood Thrush	<i>Hylocichla mustelina</i>
Hermit Thrush	<i>Catharus guttatus</i>
Barred Owl	<i>Strix varia</i>
Pileated Woodpecker	
Ruffed Grouse	
Red Tailed Hawk	
Rose-Breasted Grosbeak	

Uncommon: Woodcock *Scolopax minor*

One in my driveway years ago, and they're still courting in the fields in early spring.

Also uncommon are various warblers passing through

ANIMALS

Most common- Chipmunks, Mice, Red Squirrels, Gray Squirrels, moles, voles, shrews, Deer

Common- Raccoon

once a month or so at night, in road dead or alive

Red Fox

usually at night crossing the road

Coyotes *Canis latrans*

a pack howling and yipping at night (2008)

Porcupines *Erethizon dorsatum*

Uncommon- Fisher *Martes pennanti*

Seen off and on over the years, and once saw two babies up on a tree limb.

Moose

Last year saw one on my driveway; spotted by my neighbors in previous years; saw one last year at Hall Pond.

Black Bear

Neighbors saw mother with cub on my driveway a few years ago.

Ermine *Mustela ermine*

Saw one on my property years ago in full white coat in late Fall.

Striped skunk

Not nearly as common upland as in the village, from my observations, However, two summers ago there was a mother with five babies nesting in our shed- Sure was glad when they left!

Snowshoe Hare *Lepus americanus* Have seen tracks repeatedly on Sam's Hill.

REPTILES AND AMPHIBIANS

Very Common reptiles: Garter snakes, snapping turtles, painted turtles

Common reptiles: Red-bellied snake

Storeria o. occipitamaculata

	Ring-necked snake	<i>Diadophis punctatus edwardsii</i>	
	Milk snake		had one under my house
<u>Rare reptiles(?)</u> :	Worm Snake	<i>Carphophis a. amoenus</i>	Dug one up out of my garden years ago, but according to my guide NH is out of its range

Very Common Amphibians: Green Frogs, Spring Peepers, Wood Frogs, Gray Tree Frogs, American Toads, Red-Backed salamanders (*Plethodon cinereus*), red-spotted newts in wetlands and their juvenile red efts on land.

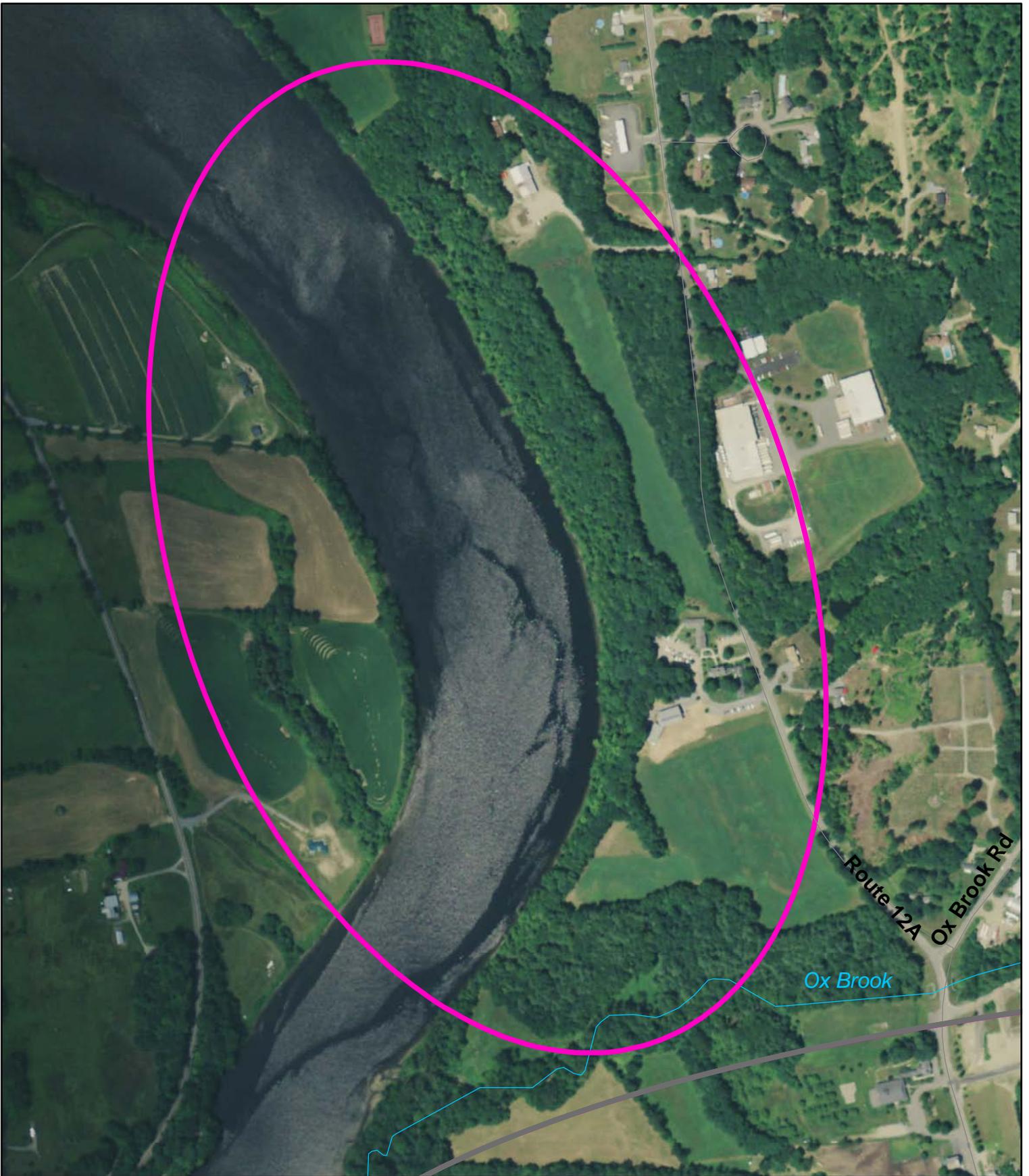
Common Amphibians:

Pickerel frog		
Spotted salamander		seem to be less common in the past year
Two-lined salamander	<i>Eurycea bislineata</i>	once I found a mother with a clutch of newborns under a rock in a very small stream.

Other Amphibians:

Bull frogs (*Rana catesbeiana*) have been rather common in the recent past, but I heard none this year (2008). In the year 2000, Jim and I were involved in surveying some severely malformed and diseased (bloated and multiple limbed) bull frog tadpoles just over the town line in Acworth. I'm wondering if the malady has spread and wiped out the area bull frogs.

APPENDIX F: Supporting Documentation for Focus Areas

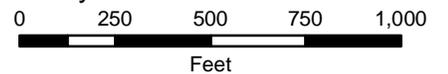
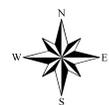


Focus on the forested corridor on the riverfront and the north side of Ox Brook.

Conservation Focus Area:
North Charlestown Riverfront

Volunteer Name:

Survey Date:



North Charlestown – Photos from Field Survey



White Pine - Mixed Hardwood Forest



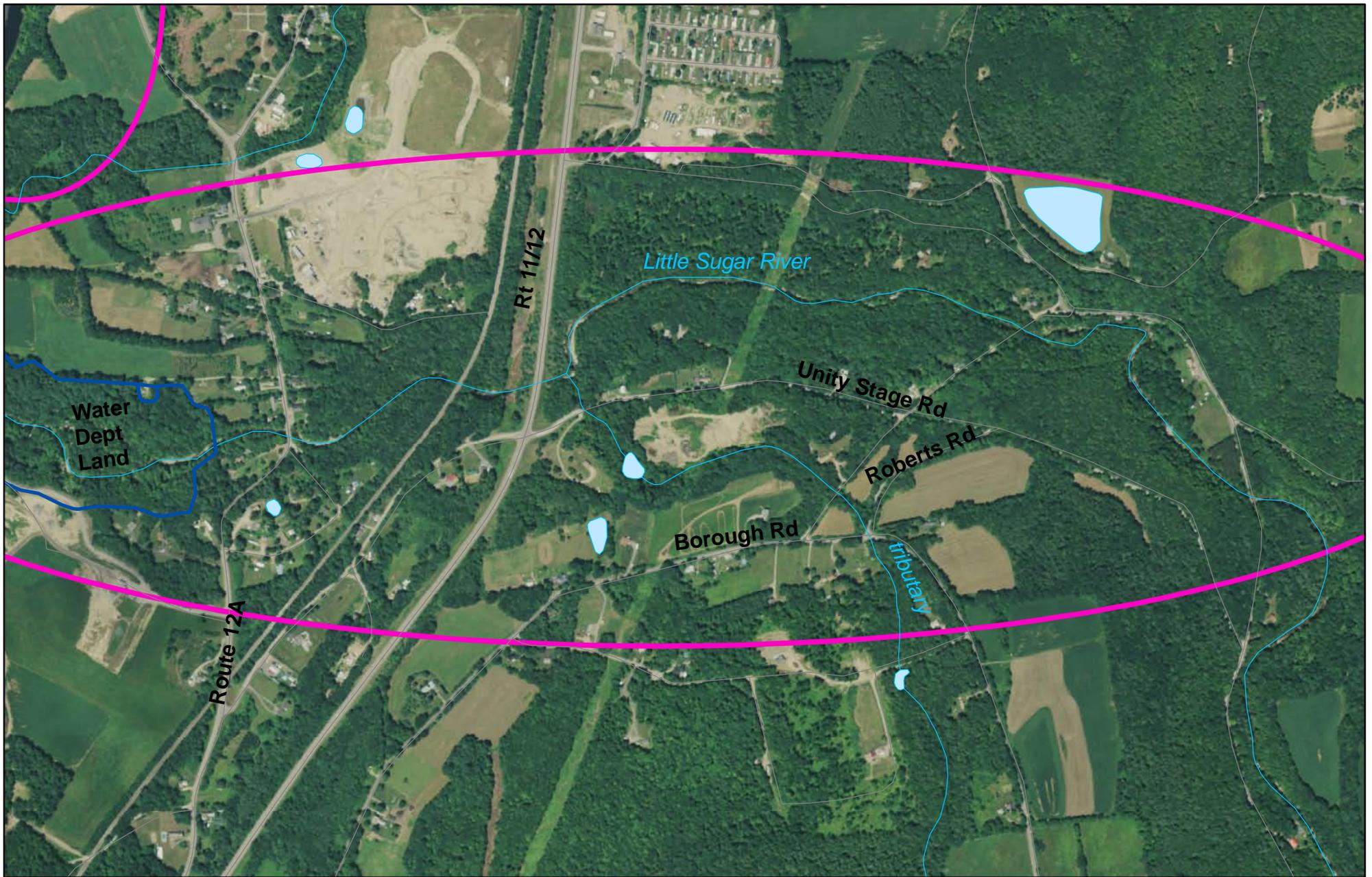
Vernal Pool



Meadow view of Student Conservation Assoc.



Japanese knotweed at southern end of meadow



Focus on Little Sugar River corridor upstream of Water Dept land and upstream along tributary to the Borough Rd

Conservation Focus Area: Little Sugar River

Volunteer Name:
Survey Date:



Little Sugar River – Photos from Field Survey



River from Closed Bridge, looking east



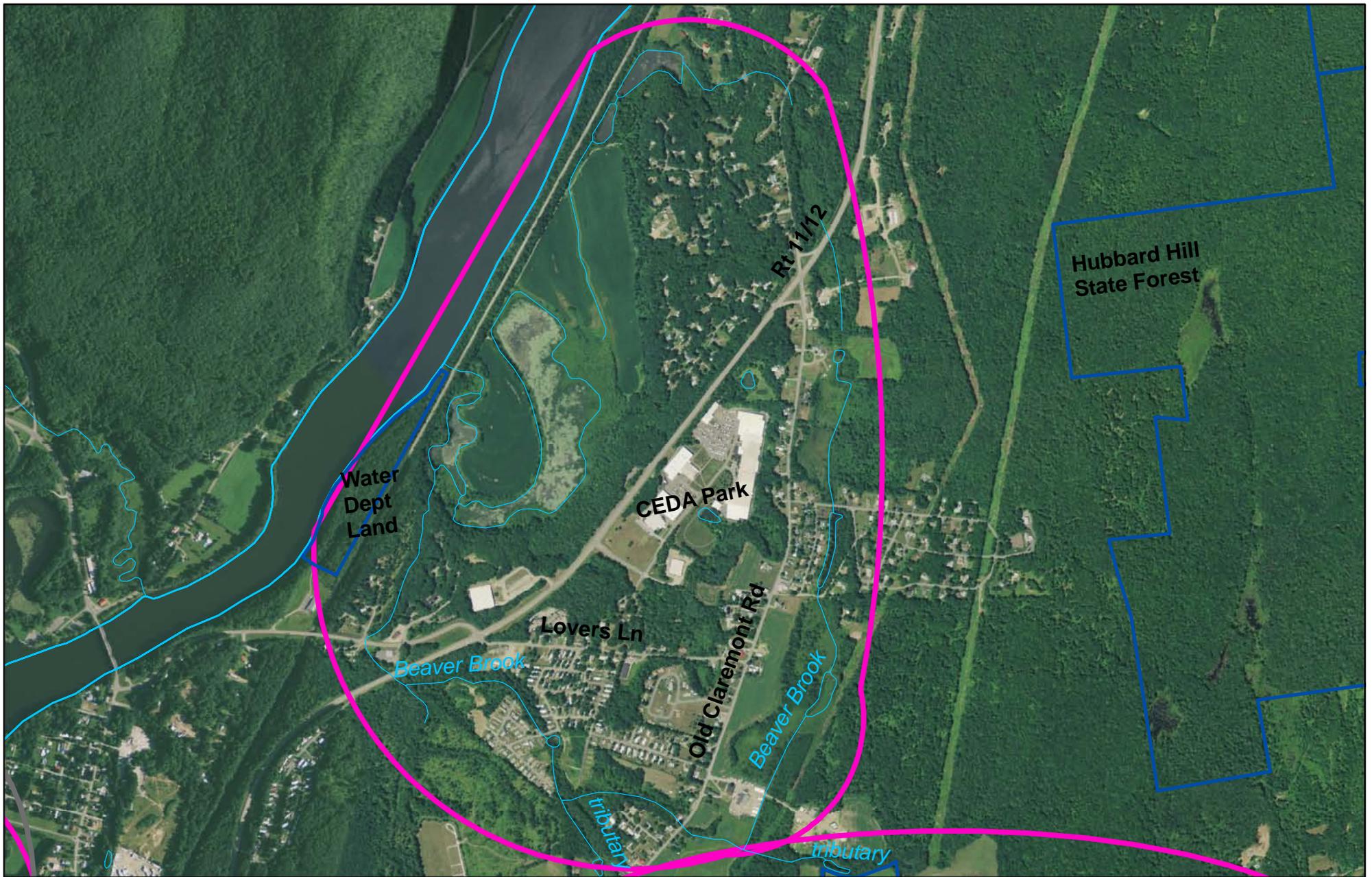
Densely vegetated river corridor



Rapids



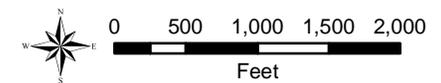
Pool



Conservation Focus Area: Oxbow Wetland & Beaver Brook

Volunteer Name:

Survey Date:



Oxbow Wetland/Beaver Brook – Photos from Field Survey



Oxbow from Center Field



Beaver Brook near Beaudry's



Beaver Brook wetlands, looking west from powerlines



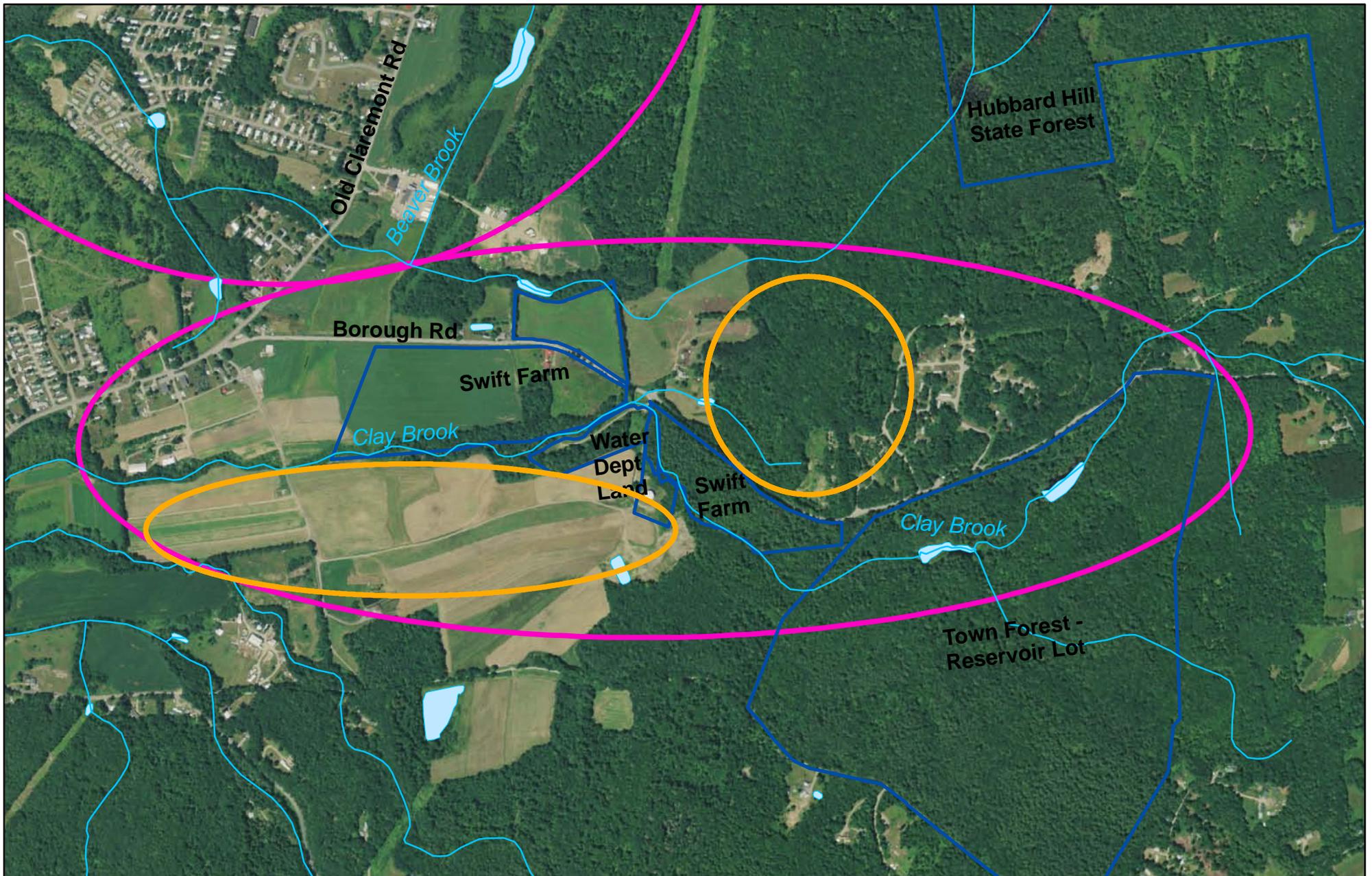
Wetlands on west side of Beaver Brook



Oxbow wetland from cornfield



Feeder brook from CEDA Park

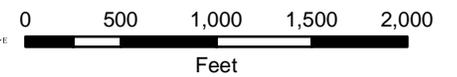


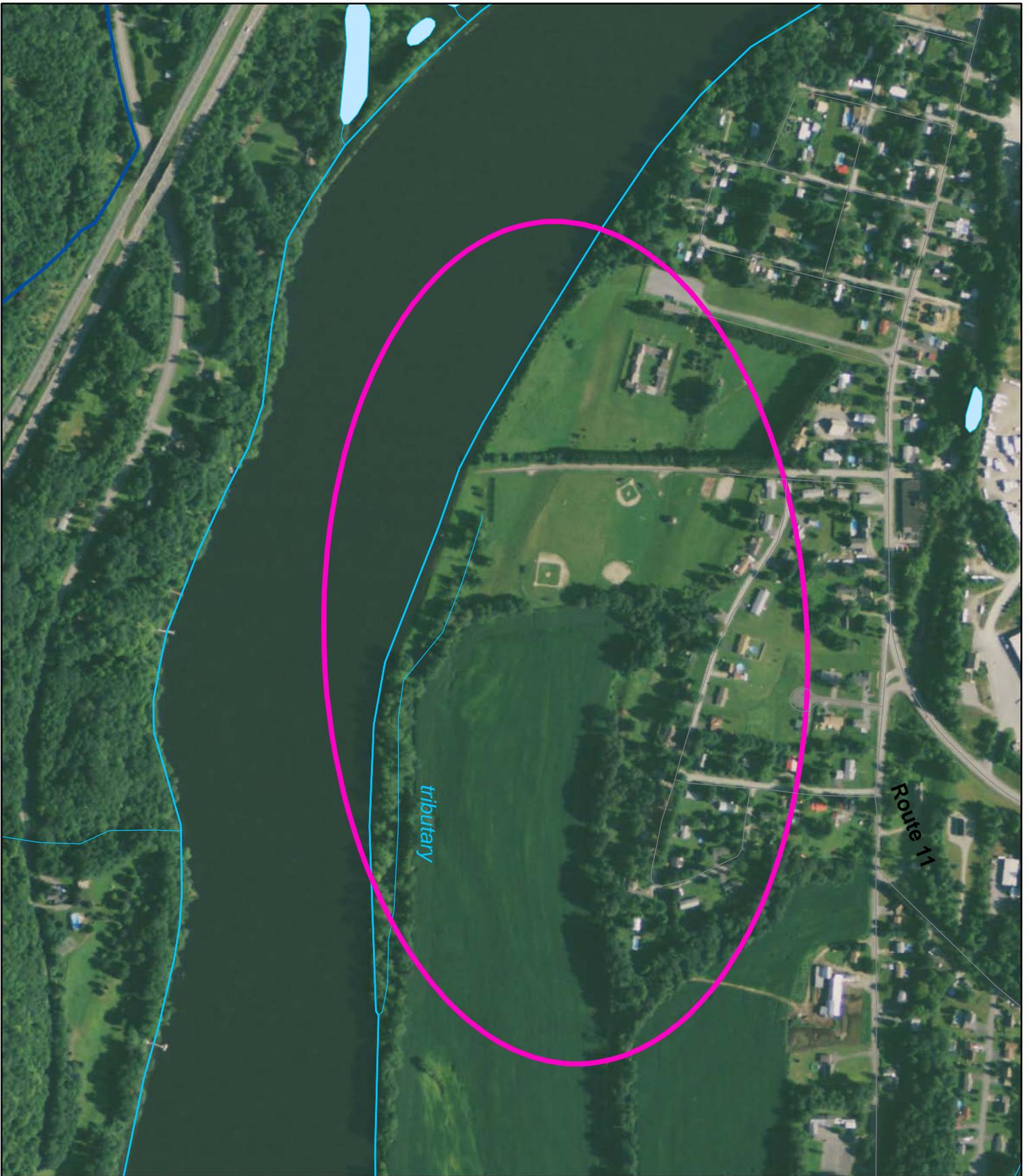
Focus survey on Clay Brook corridor land that is not already protected and the areas circled in orange.

Conservation Focus Area: Clay Brook

Volunteer Name:

Survey Date:

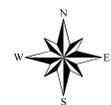




Focus field surveys on the river's edge and the fields (farm and park).

Conservation Focus Area:
Patch Park/Fort at No. 4

Volunteer Name:
Survey Date:



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Feet

Patch Park/Fort at No. 4 – Photos from Field Survey



From NW of park, looking downriver



From park, looking upriver



Fort, looking from SW



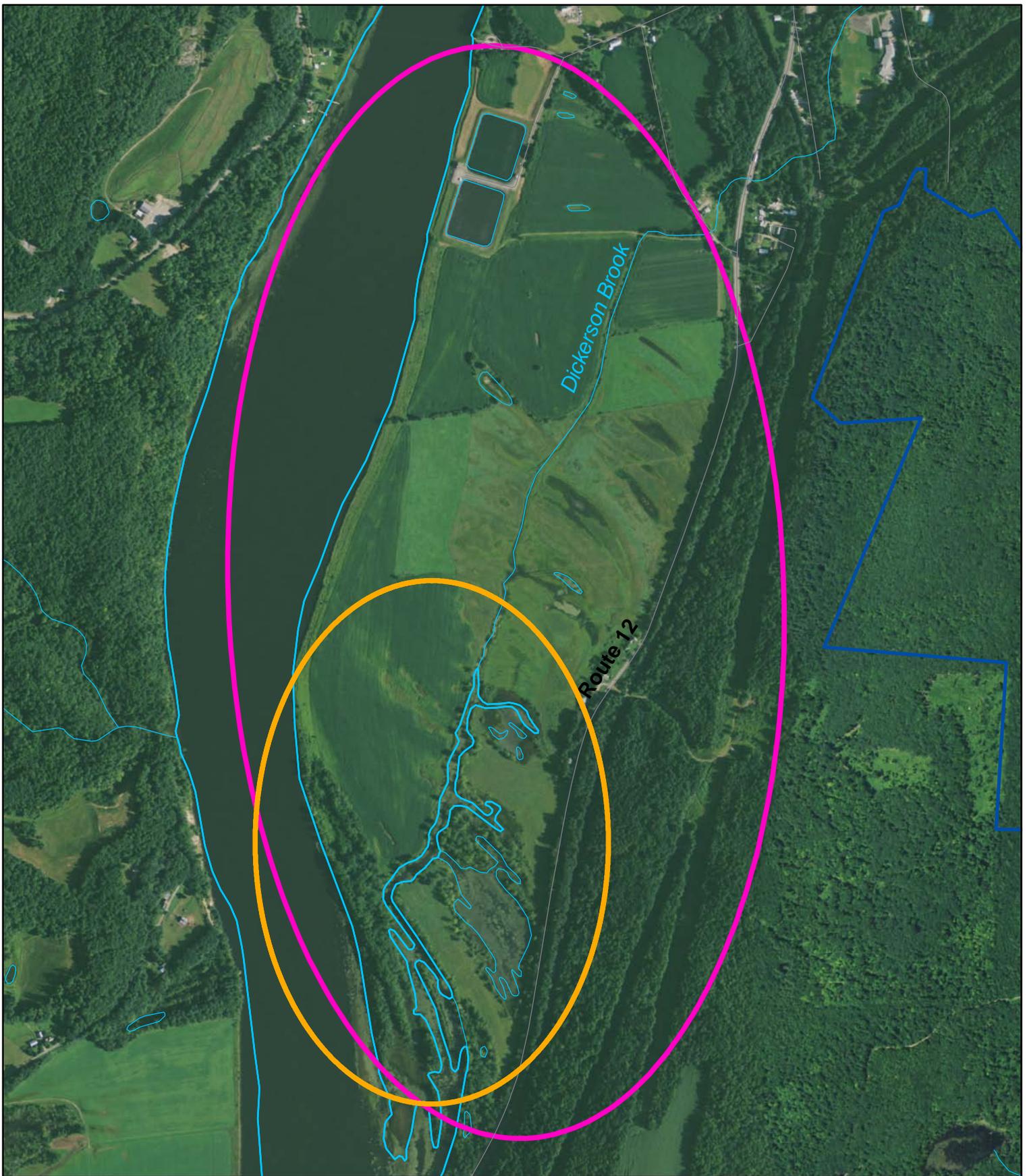
Lower part of Patch Park from ballfield



Patch Park from lower ballfield



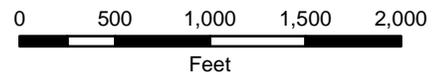
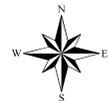
Small swamp SW corner of Patch Park

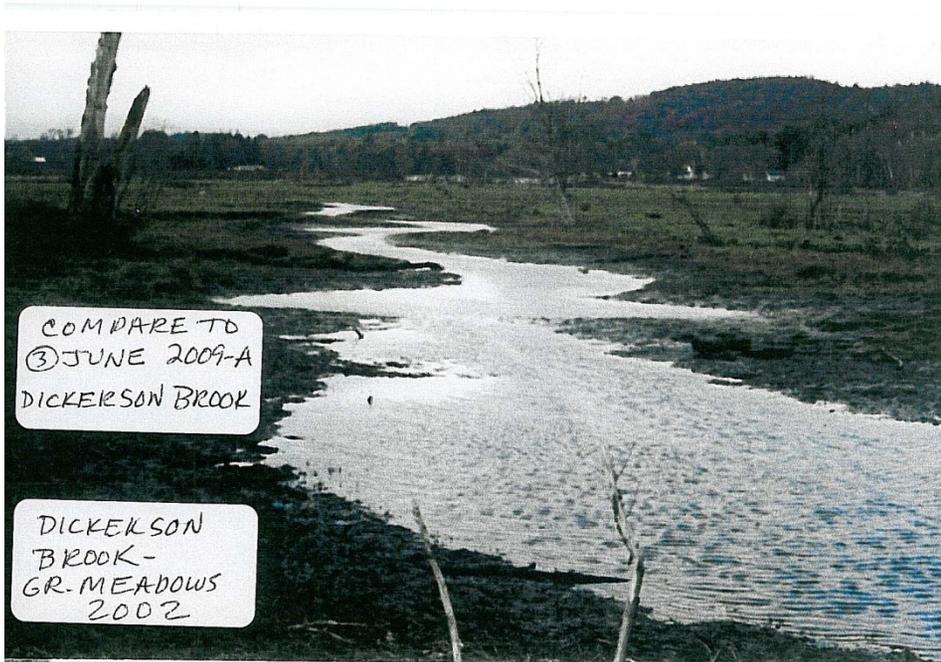


Focus on all agricultural fields, with special emphasis on area circled in orange. Conservation Focus Area: Great Meadow

Volunteer Name:

Survey Date:

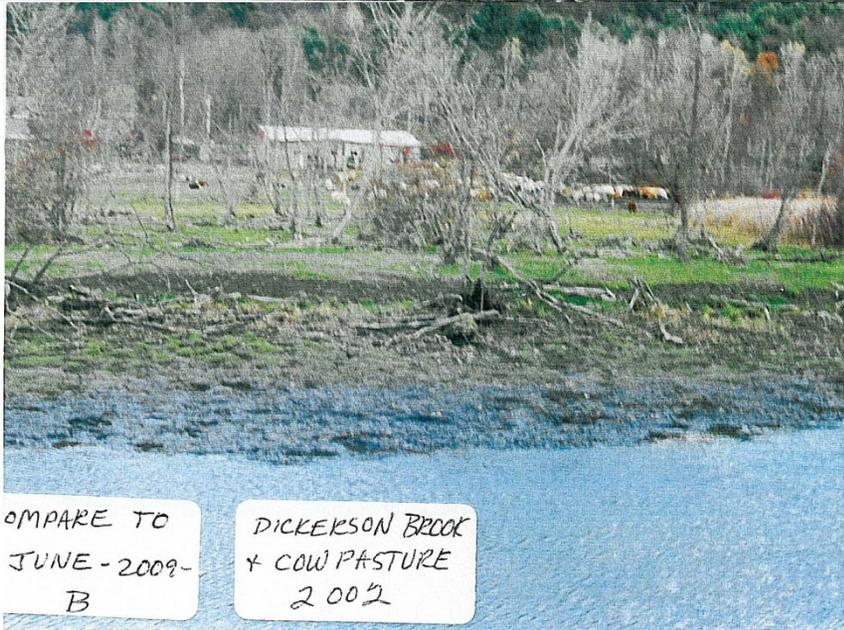




③ JUNE 2009-A



③ JUNE 2009-B



Great Meadow prior to Riparian Buffer Planting

Photos: Jan Lambert

Great Meadow, 2009, 7 years after buffer planting



Great Meadow prior to Riparian Buffer Planting

Photos: Jan Lambert

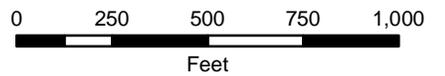
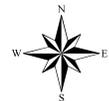
Great Meadow, 2009, 7 years after buffer planting



Focus on the fields west of Rtes 12/12A and also on the area circled in orange. Conservation Focus Area: Lower Meadows

Volunteer Name:

Survey Date:



Lower Meadows – Photos from Field Survey



Bank Erosion, looking north



Community Well



Looking north up Lower Meadows



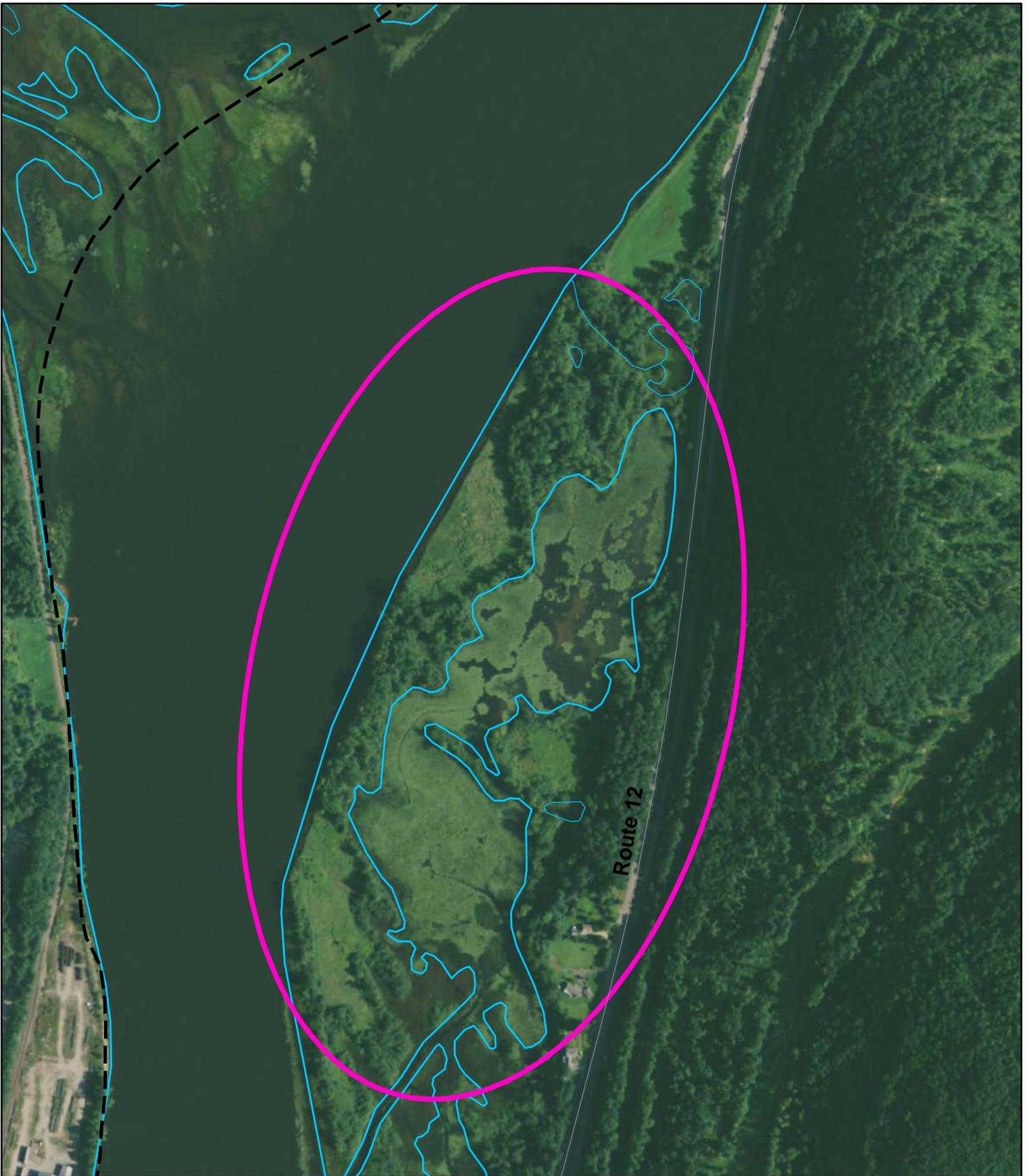
Looking west at Route 12/12A junction



Pond east of railroad tracks



Riparian buffer zone, looking north

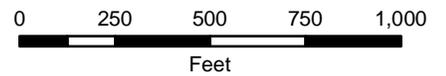
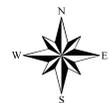


Focus on wetland areas west of Route 12

Conservation Focus Area: Meanys Cove

Volunteer Name:

Survey Date:



Meanys Cove – Photos from Field Survey



Large pond on south end of cove



Shagbark Hickory



River frontage, looking north



From south end of field, looking north



Access road to field, showing erosion



Public access to Meanys Cove

Appendix G. References and Resources

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