

**Significant Floodplain Forests of Vermont
Vermont Nongame and Natural Heritage Program, 1998**

SITE NAME: Richmond Riparian Corridor

TOWN: Richmond

MAPS: Richmond, VT and Essex Junction, VT, 7.5' USGS quadrangles

LOCATION: Along the Winooski River from Jonesville west to the Interstate-89 bridge in Richmond

SOURCE OF INFORMATION: 1997 field visit (M. Lapin); VNNHP files

OWNERSHIP: Private; no access to private lands without owner's permission

SIGNIFICANCE:

1. The largest, most natural remnant of floodplain forest on the upper Winooski River, and representative of the highest quality floodplain forest remaining in Vermont (B-ranked) (silver maple-ostrich fern type)
2. Uncommon meadow horsetail (*Equisetum pratense*) grows in the forest.

DESCRIPTION OF SITE:

Richmond Riparian Corridor is a 4 mile (7km) stretch of floodplain that represents the most extensive remaining floodplain forest on the Winooski River (exclusive of the delta floodplain complex). Several of the largest pieces of floodplain forest at the site are 13, 16, 32 and 33 acres. Among these pieces are several types of floodplain forest, including levee forest, first terrace and second terrace, and associated backwater marshes and pools. The levee is a discontinuous feature that is not always topographically distinct. The lower and higher floodplain terraces do show some differences in vegetation. The banks of the Winooski rise 13' (4m) from the late-summer water level to the floodplain; every spring, the big river rises and inundates the riparian corridor.

The higher terrace forest is the rarer and less extensive type of the floodplain forest communities at the site. Hackberry (*Celtis occidentalis*), more than any other species, characterizes the higher forest. Hackberry either dominates the tree canopy or, more often, is co-dominant with butternut (*Juglans cinerea*), basswood (*Tilia americana*), silver maple (*Acer saccharinum*), box-elder (*Acer negundo*) and slippery elm (*Ulmus rubra*). Usually there are distinct large tree and small tree layers, although the same tree species form each. Chokecherry (*Prunus virginiana*) is a common tall shrub, and riverbank grape twines among the treetops. Ostrich fern (*Matteuccia struthiopteris*), wood-nettle (*Laportea canadensis*) and the horticultural escapee, dame's rocket (*Hesperis matronalis*) dominate the dense, tall herb growth. Yellow touch-me-not (*Impatiens pallida*) and sedge (*Carex deweyana*) are common herbs, and scattered in patches are an uncommon grass whose habitat appears to be restricted to river floodplains, Wiegand's wild-rye (*Elymus wiegandii*), and meadow horsetail (*Equisetum pratense*), a horsetail that seems to prefer river floodplains. The forest soil is silt loam and very fine sandy loam that remained moist into late summer and shows early soil profile development.

In the lower floodplain forest, hackberry is either lacking or grows sporadically. Silver maple dominates or co-dominates with eastern cottonwood (*Populus deltoides*); willow (*Salix* sp.) is an occasional tree. Box-elder grows as a dense understory tree. The herb layer is dominated by ostrich fern and wood-nettle;

the exotic floodplain nuisance species, goutweed (*Aegopodium podagraria*) is the next most abundant herb.

Levee forest typically is slightly elevated above the general floodplain forest and has a sandier soil. Along the Richmond Riparian Corridor are discontinuous pieces of elevated levee, on which the soil is medium sand. In places behind the levee, areas of silty soil occur, but these are underlain at 1.5' (0.5m) or so by medium sand. In the post-glacial history of the Winooski River, levees have been built and covered over, and channels have meandered and cut off oxbows. Every little piece of floodplain has a unique history of construction, destruction and deposition.

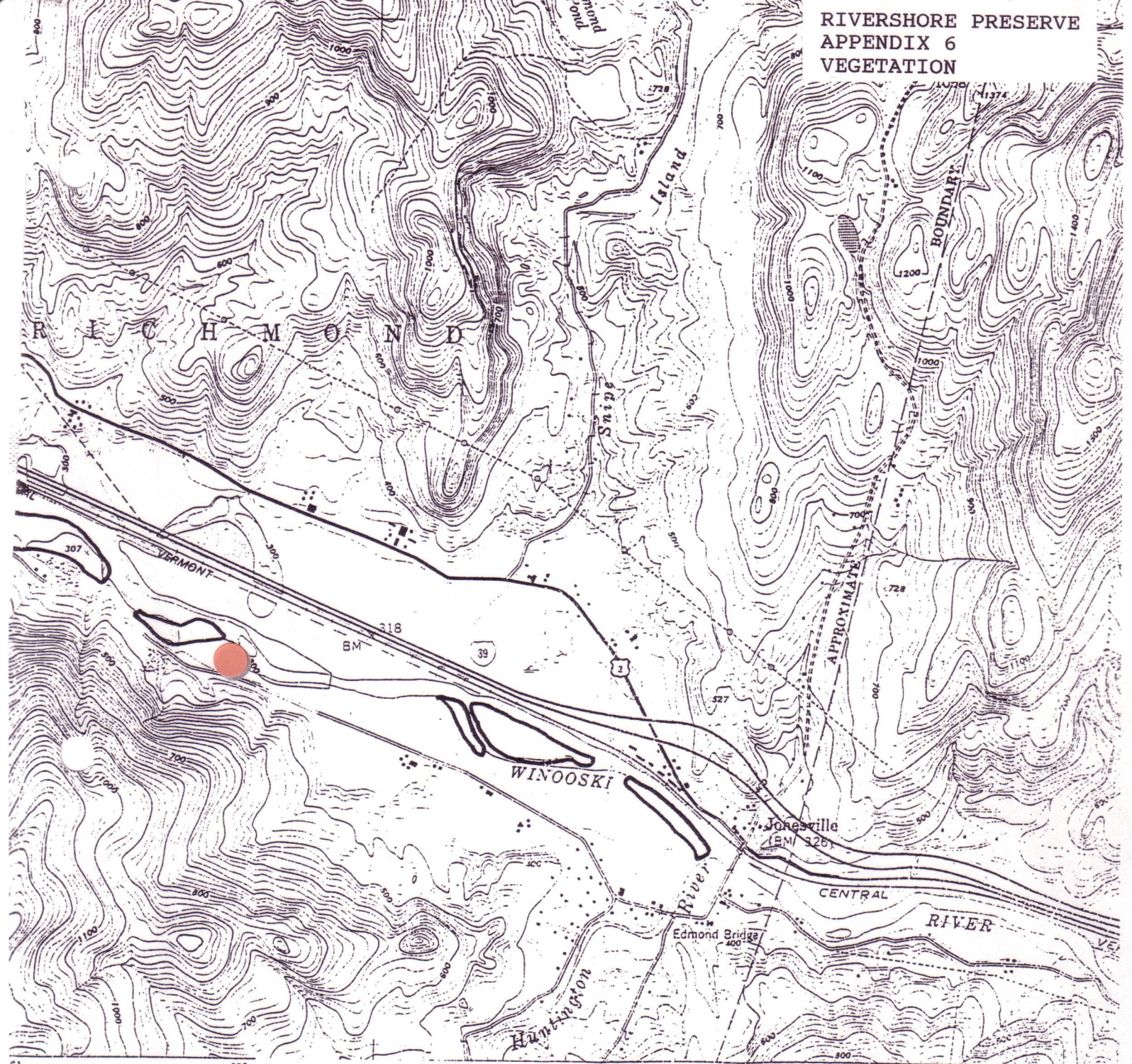
On the levee, sugar maple (*Acer saccharum*) is a common tree with box-elder, cottonwood and silver maple. Ostrich fern is the dominant herb, but an array of other herbs, some weedy and some native floodplain species, gives these better drained levees a more diverse herb flora. Of the native species, jerusalem-artichoke (*Helianthus tuberosus*) and broad-glumed brome grass (*Bromus latiglumis*) are common; the exotic Japanese knotweed (*Polygonum cuspidatum*) is occasional, not nearly as much of a plague here as in other floodplain sites.

COMMENTS AND MANAGEMENT GUIDELINES:

Tree cores indicate that forest age is approximately 50 years. Previous disturbance was likely selective logging of valued hardwood species, especially butternut, and firewood cutting. Few signs of such management remain, but one does find trails and paths used by anglers and hikers that likely follow old skid trails.

Fragments of the Richmond Riparian Corridor have been protected by the Richmond Land Trust. Numerous landowners have negotiated trail and conservation easements with the land trust. The riparian recreation trail permits people to enjoy the stately floodplain forest and its productive bird- and aquatic-life. Trail construction and maintenance should be undertaken so as to minimize tree-cutting and follow existing paths when possible. Floodplain forests are especially susceptible to invasions of exotic nuisance plants. Forest clearing, which creates the open, sunny conditions that permit establishment of exotics, is strongly discouraged. Richmond Riparian Corridor is a tiny remnant of the native natural communities that once grew along the entire length of the broad floodplain ecosystem of one of Vermont's major rivers. Its ecological importance should not be underestimated. The Richmond Land Trust is encouraged to continue the work of conserving the riparian ecosystem and managing it in a manner conducive to maintaining its natural integrity.

RIVERSHORE PRESERVE
APPENDIX 6
VEGETATION

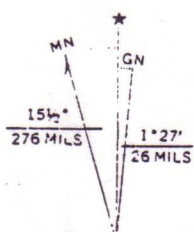


Richmond Riparian Corridor
Richmond
 Scale 1:24,000
Richmond, VT & Essex
Junction, VT 7.5'
 USGS quadrangles
 (1980/1987)

SCALE 1:24,000



CONTOUR INTERVAL 20 FEET
 NATIONAL GEODETIC VERTICAL DATUM OF 1929



UTM GRID AND 1980 MAGNETIC NORTH
 DECLINATION AT CENTER OF SHEET

Revisions shown in purple compiled by the Geological Survey
 from photographs taken 1978. This information not
 field checked. Map edited 1980

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

VEGETATION OF THE RICHMOND RIVERSHORE PRESERVE

(includes rivershore land owned by the Town of Richmond and Kemp property)

Silver maple	<u>Acer saccharinum</u>
Boxelder	<u>A. negundo</u>
Red maple	<u>A. rubrum</u>
Sugar maple	<u>A. saccharum</u>
Butternut	<u>Juglans cinerea</u>
Cottonwood	<u>Populus deltoides</u>
Black willow	<u>Salix nigra</u>
Green ash	<u>Fraxinus pennsylvanica</u>
White ash	<u>F. americana</u>
Hackberry	<u>Celtis occidentalis</u>
American elm	<u>Ulmus americana</u>
Slippery elm	<u>U. rubra</u>
Choke cherry	<u>Prunus virginiana</u>
Wild grape	<u>Vitis sp.</u>
Virginia creeper	<u>Parthenocissus quinquefolia</u>
Ostrich fern	<u>Matteuccia struthiopteris</u>
Marginal wood fern	<u>Dryopteris marginalis</u>
Lady fern	<u>Athyrium filix-femina</u>
Sensitive fern	<u>Onoclea sensibilis</u>
Wild rye	<u>Elymus sp.</u>
Reed grass	<u>Phalaris arundinacea</u>
Dutchman's breeches	<u>Dicentra cucullaria</u>
Canada lily	<u>Lilium canadense</u>
False Solomon's-seal	<u>Smilacina racemosa</u>
Jack-in-the-pulpit	<u>Arisaema atrorubens</u>
Celandine	<u>Chelidonium majus</u>
Wild cucumber	<u>Echinocystis lobata</u>
Tall meadow-rue	<u>Thalictrum polygamum</u>
Golden Alexander	<u>Zizia aurea</u>
Goutweed	<u>Aegopodium podagraria</u>
Moneywort	<u>Lysimachia nummularia</u>
Orange jewelweed	<u>Impatiens capensis</u>
Yellow jewelweed	<u>I. pallida</u>
Groundnut	<u>Apios americana</u>
Wood nettle	<u>Laportea canadensis</u>
Dame's rocket	<u>Hesperis matronalis</u>
Virginia knotweed	<u>Tovara virginiana</u>
White snakeroot	<u>Eupatorium rugosum</u>
Tall sunflower	<u>Helianthus sp.</u>