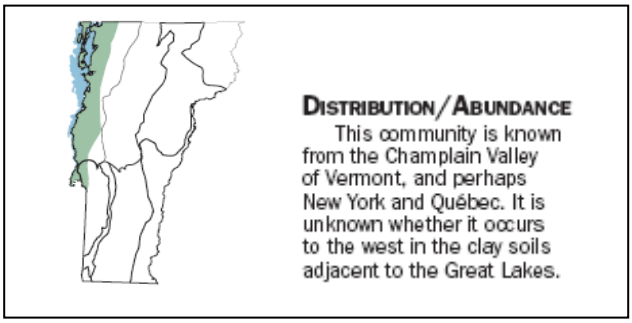
Valley Clayplain Forest — Community Abstract

ECOLOGY AND PHYSICAL SETTING

This is the forest that dominated the clay and silt soils of the Champlain Valley prior to European settlement and the subsequent conversion of forest to agricultural land. Today this forest community is extremely rare. The clay soils were deposited in the Champlain Valley during and following the Pleistocene glaciation, both when the valley was flooded by a large freshwater lake, and later when salt water invaded the basin from the north. The soils are deep and fertile, and make ideal agricultural soils, especially when drained. Moisture in these soils varies with soil texture and topographic position, and the most well drained areas were the ones preferentially cleared for agriculture. The Valley Clayplain Forest remnants that are left are generally on the moister sites, though they typically contain a mosaic of wet and less-wet areas. In some areas, thin lenses of sand lie over the clay. It is unknown how these areas differ from places without sand. Lapin (1998) described Clayplain Forests and the variations within them, and much of this information is taken from his study.

This natural community is a mesic, or less wet, Clayplain forest. Wet Clayplain Forest is considered a variant and is typically a wetland community. These two variants are found together, however, and from a practical standpoint are difficult to separate. Mesic Clayplain Forest has moderately well drained to somewhat poorly drained soils but pools and wet hollows (Wet Clayplain Forest) are scattered throughout. In both, soil fertility is high. Because of the wet soils, trees are typically shallow-rooted and are easily blown over during heavy winds. Tip-up mounds are therefore a common sight in these forests.

The small yellow flowers of barren strawberry are a common spring sight in Valley Clayplain Forests.



VEGETATION

The canopy in Clayplain Forests is a diverse mixture of trees, including most commonly white oak, red oak, red maple, white pine, shagbark hickory, and white ash. Associated species include hemlock, sugar maple, beech, swamp white oak, and bur oak. The shrub layer is typically well developed, and the herb layer can be quite dense and very diverse. Characteristic species include barren strawberry and grove sandwort. Slight changes in microtopography yield changes in species composition. Mounds within level sites may have dry-site species such as low sweet blueberry and woodland sedge, while hollows harbor wet site species such as winterberry holly and Bailey's sedge.

ANIMALS

Characteristic mammals in this community are gray squirrel, eastern chipmunk, beaver (in wet areas), raccoon, and the ubiquitous white-tailed deer. Common birds are wood thrush, eastern wood pewee, ovenbird, northern oriole, and downy woodpecker. Typical amphibians are blue spotted salamander, American toad, wood frog, and grey treefrog. In the vernal pools within these forests, one can find caddis flies, predaceous diving beetles, and horsehair worms.

SUCCESSIONAL TRENDS

White pine seems to dominate some early-successional areas. Green ash and quaking aspen are also common early-successional species, along with eastern red cedar, red maple, bur oak, and white ash.

VARIANTS

Wet Clayplain Forest: This variant has soils that are somewhat poorly to poorly drained and is classified as a wetland. It is found as small to medium-sized inclusions within the Mesic Clayplain Forest and is very closely allied with it, hence its inclusion here. The canopy is dominated by swamp white oak, red maple, and green ash or white ash. White oak, shagbark hickory, white pine, American elm, and black ash are also present. Musclewood is the dominant small tree. The shrub layer is dense, and wetland plants such as sensitive fern, water hemlock, and water horehound are present along with the sedges listed above.

RELATED COMMUNITIES

Mesic Maple-Ash-Hickory-Oak Forest:
This forest type is found on non-clay soils in the warm climate regions of the state and shares many species in common with the drier examples of Clayplain Forest.

Taken from Wetland, Woodland, Wildland: A Guide to the Natural Communities of Vermont. E.H. Thompson and E.R. Sorenson. 2000 and 2005. Published by The Nature Conservancy and Vermont Department of Fish and Wildlife, distributed by University Press of New England.