

Pacama Vly

Critical Environmental Area

Town of Olive, Ulster County, New York

Critical Environmental Areas

New York State law authorizes municipalities to designate Critical Environmental Areas within the municipal boundaries to alert people to places that deserve special attention in the course of land use planning, regulatory reviews of development projects, and decisions about development and conservation.

A Critical Environmental Area (CEA) is a geographic area with exceptional character with respect to one or more of the following:

- a benefit or threat to human health;
- a natural setting such as fish and wildlife habitat, forest and vegetation, open space, and areas of important aesthetic or scenic quality;
- agricultural, social, cultural, historic, archeological, recreational, or educational values; or
- an inherent ecological, geological, or hydrological sensitivity that may be adversely affected by any change (6 NYCRR 617.14(g)).

A CEA is adopted by the municipal legislative body and then registered with the State of New York. The CEA designation carries no land use restrictions, but simply raises awareness about the important features contained within the CEA—such as wildlife habitat, water resources, unusual landforms, or scenic vistas—and requires consideration of potential impacts to the quality of those features during the review of a major new land use or other action (such as new legislation) in the State Environmental Quality Review process.

Pacama Vly CEA

A Town of Olive working group—including members of the Olive Conservation Advisory Council, staff of an environmental consulting firm, and a local cultural NGO—proposed the establishment of the Pacama Vly Critical Environmental Area (CEA) to promote the protection of the unusual wetland community.

The Pacama Vly is an approximately 187-acre wetland that straddles the boundaries of the towns of Marbletown, Rochester, and Olive in Ulster County, New York. It is fed and drained by the Vly Brook which joins Rochester Creek ca. 0.4 miles below the wetland outlet. The Vly Brook is classified “A” by the New York State Department of Environmental Conservation (NYSDEC), signifying that the best use is for drinking water supply. The segment of the brook that feeds the Vly is also classified as a trout stream (“T”), indicating that it has the clear, cool conditions needed to

support trout. The entire watershed of the Vly is 1576 acres spanning the three towns, but within Olive the wetland and its watershed cover a 179-acre area east of Lower Sahler Mill Road. This is the area of the proposed CEA.

The Pacama Vly has been recognized by New York State for its significant contributions to regional biodiversity and other natural resource services. It is part of a 3600-acre forested area that, in an analysis carried out by the New York Natural Heritage Program (NYNHP), ranks in the 95th- 99th percentile of forests in the Hudson Valley on measures of size, fragmentation, connectivity, stressors, habitat value, and carbon sequestration. The NYNHP has also identified exemplary occurrences of two significant ecological communities in the Olive portion of the Vly: hemlock-northern hardwood swamp and red maple-tamarack peat swamp. The latter is rare in the Hudson Valley region, usually occurring in areas of calcareous soils. The Vly is underlain by Catden muck, an organic soil with peat layers measuring over 80 inches deep. Deep peat deposits, if left undrained and undisturbed, are long-term carbon repositories. A rare dragonfly and two rare mosses have been found in the Vly.

The Vly is a disjunct part of the Catskills Mountains Significant Biodiversity Area identified by NYSDEC and recognized for the importance for large forests, headwater streams, rare plants, and exemplary ecological communities. A 49-acre portion of the Vly in the Town of Rochester is owned and managed by NYSDEC as a Wild Forest, but no part of the wetland or its watershed in Marbletown or Olive has any formal protection apart from that offered by the federal, state, and local (Rochester) wetland regulatory programs.

The upland forest surrounding the Vly serves not only to buffer the wetland from human disturbances, but also to support wildlife species that use both wetland and upland habitats. Maintaining the forest intact will help to protect the special attributes of the wetland.

Threats

- **Tree removal:** Intact forests with undisturbed vegetation and soils in the watershed of a wetland help to maintain cool water temperatures, promote groundwater recharge, moderate surface runoff, capture sediments, and process and transform pollutants, in addition to providing valuable habitat for terrestrial and amphibious wildlife. Disruption of forest vegetation or disturbance of the forest floor can reduce the capability of the forest to provide these services.
- **Cutting of trees and shrubs** during the nesting season (e.g., spring through mid-summer) disrupts the activities of nesting songbirds, raptors, and other tree-dependent wildlife, and cutting during the period April through October can disrupt roosting bats.
- **Forest fragmentation** by roads, driveways, yards, utility corridors, and buildings divides the forests into smaller blocks that may be unsuitable for area-sensitive wildlife species—such as nesting songbirds that require large habitat areas and are sensitive to human contact or

disturbances. Smaller patches of forest have more forest “edge” habitat with higher light and noise levels and infestations of non-native plant species. Forest fragmentation makes the formerly deep interior forest areas newly accessible to songbird nest predators (such as raccoons and domestic cats) and to brood parasites (such as the brown-headed cowbird) whose activities are ordinarily confined to open areas and forest edges. Roads and other developed areas dividing forests can also act as significant barriers and hazards to wildlife movement, and many animals avoid breeding near human activities.

- **Compaction and other disturbance of the forest floor** (as by large equipment) damages the soil structure, and reduces the capability of the soils to absorb rainwater and snowmelt. It can also harm amphibians, small mammals, and the diverse soil invertebrates and microbes that are fundamental to the forest ecology.
- **Infestations of the hemlock woolly adelgid** in the coming years may kill most of the hemlocks in and at the edge of the Vly and dramatically affect the habitat conditions of the wetland and the upland forest.
- **Infestations of the emerald ash borer** may kill most or all of the ash trees in the Vly and its watershed—white ash in the upland forests, and black and green ashes in the wetland. The consequences to the biota of these areas are difficult to predict, but may be significant.
- **Impervious surfaces:** Roads, driveways, parking lots, roofs, and other impervious surfaces (including compacted soils) prevent infiltration of rainwater and snowmelt to the soils; promote rapid runoff of surface water, soil erosion, siltation of wetlands, elevated water temperatures, and reduced groundwater recharge; and are often sources of water contamination—e.g., from de-icing salts, petroleum hydrocarbons, and heavy metals.
- **Other forms of pollution** can arrive as direct discharge or in sheet or channelized runoff from agricultural fields or lawns carrying fertilizers and pesticides that degrade the quality of wetland habitats.
- **Recreational use** or other kinds of repeated and frequent uses of the Vly can lead to trampling of the sensitive wetland soils, littering, soil erosion, and noise disturbance to nesting or roosting birds and other wildlife.

Recommendations

Below are recommendations for actions that will help to protect the Pacama Vly and the habitats in its watershed.

- **Avoid direct disturbance of the wetland and a 200-ft upland zone around the wetland.**
- **Avoid activities that would cause siltation, warming, or other forms of pollution in the wetland.**

- **Avoid applications of fertilizers and pesticides** (insecticides, herbicides, fungicides, algicides) within a 200-ft zone around the wetland. Those substances can degrade the water quality, alter the chemistry of the wetland water and soils, and harm non-target plants, animals, fungi, and soil microbes that support the unusual wetland community.
- **Maintain intact forests** as much as possible. Minimize disturbance of soils and vegetation, and especially within 200 feet of the wetland to help maintain shade, water volumes, and cool water temperatures, prevent erosion, and protect wildlife habitat.
- **Avoid fragmenting the forests** with new roads, driveways, yards, utility corridors, and other developed features. Locate new development near forest edges to leave the forest interiors intact wherever possible.
- **If recreational access points and trails are developed, locate and design them carefully** to shield the wetland from human disturbance as much as possible.

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Pacama Vly Watershed Critical Environmental Area (proposed)

