RESEARCH ABSTRACT

Principal Investigator(s): Nancy Diaz, John Haglund, Mark Boyll
USDA-Forest Service, (Areas Ecology-GP/MTH NF's)
2955 NW Division Street
Gresham, OR 97030
(503) 666-0697

Study Title: Riparian/wetland classification for streamsides

Key Words: plant, vegetation, succession, riparian, stream, soil, archives, vegetation classification

Abstract: The riparian sampling in the Mount St. Helens vicinity is part of a larger study that extends across the Gifford Pinchot National Forest. Streams sampled on the Mount St. Helens Ranger District are Kalama River, East Fork Fossil Creek, and Pin Creek. The purpose of gathering streamside plot data in this project is to produce a classification of streamside vegetative/geomorphic features. The sampling design is such that plant communities are juxtaposed on their geomorphic surfaces and then related to the stream channel itself. Because this project is being carried out in coordination with a separate Forest Riparian Inventory, we will later be able to relate our riparian information to the aquatic data being collected by the fisheries/hydrology programs.

Once the classification is completed, it will be used in inventories of stream systems, to help understand the dynamics of such systems and how they respond to perturbations, and to help establish reasonable and meaningful objectives for managing riparian areas. The classification will be hierarchical, with plant community/geomorphic feature clusters, or complexes, probably being the most commonly-used level.

Primary data collected includes percent cover of plants by species and vegetation type; geomorphic features; and topographic site information. Standard floristic clustering techniques will be used to classify plots into community types using plant species, geomorphic surfaces, and environmental attributes as classification criteria.

Plant cover: by species - % cover (at sampled area) grouped by plant type - % cover (at sampled area)
Substrate: % cover (of sampled area) of rock, gravel, bare ground.
Slope: % slope
Aspect: azimuth
Soil: depth, color, texture of layers
Slope shape: convex/flat/concave/undulating
Position: topographic position, elevation in feet
Timber: basal area of forested plots, average age of dominants
Snags: DBH, height class, degree of decay

Geomorphology: geomorphic surface, valley segment type, width of normal high water and of active channel.
Observations: wildlife, disease/pathogens

Frequency of Measurement(s): Streams were sampled once each in 1990-1991.

Data Storage:
Primary: ORACLE and IS/CLI data files on main frame computer
Secondary: Original field data cards

Long-term plans: Data available for collaborative efforts: Data from this study will be used in inventories of stream systems in order to establish objectives for managing riparian areas. Area Ecology staff and data are available for collaborative efforts.