

An Examination of the Potential for Riparian Buffers on Agricultural Lands to Augment Farm Incomes, Increase Hardwood Inventories, and Protect Streams

Agricultural income viability is an important consideration as recent listings of Pacific Northwest (PNW) salmon under the Endangered Species Act (ESA) created the need for new strategies to protect the water quality and fish habitat of PNW streams. To date there has been minimal research on the health and salmon survival impacts from commercial agriculture enterprises. One hypothesis suggests that fast growing hardwood buffers may filter farmland run-off while providing stream bank stabilization and shade. These plantations, when harvested in a sustainable agroforestry context, may generate additional farm income and add to regional hardwood supplies. A study to examine the costs and benefits of hardwood riparian buffers on agricultural lands has been undertaken with cooperation of local farmers in the Skagit drainage of western Washington.



Researchers will evaluate the recently established Conservation Reserve Enhancement Program (CREP) buffers and four new buffer treatments against current no buffer conditions. Buffer treatments include: 1) a 50' buffer of red alder (*Alnus rubra*) set back 15' from the stream with a 25' grass filter strip, 2) a 50' buffer of hybrid poplar (*Populus*) set back 15' from the stream with a 25' grass filter strip, 3) a 75' grass filter strip alone, and 4) existing farming practice (control). All experimental plots will be monitored for nutrient (N & P) and sediment movement, shade, and bank stabilization. Buffer alternatives will also be evaluated for short and long term economic impact on the farm enterprise and for potential contribution to western Washington hardwood supply. Through the CREP, provided by the Conservation and Environmental Programs Division of the Farm Service Agency of the USDA, farmers can receive annual rental payments and cost-share assistance to establish long-term, forested buffers on eligible riparian areas and wetlands. For more information see the CREP website: <http://www.fsa.usda.gov/dafp/cepd/crep.htm>. Proposals to expand the scope of this project to examine the marginal costs and benefits of different buffer widths and vegetative strategies across a broader set of sample sites will be submitted to the USDA Sustainable Agriculture, Research, and Education (SARE) agency and to the Cooperative State Research, Education, and Extension Service (CREES).

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