

Methods of Estimation

Nitrogen, Phosphorus, and Sediment Reduction Estimates

Estimates are based on the results of the modeling done in support of a 2007 study of the water and air quality impacts of the CRP using the Environmental Policy Integrated Climate (EPIC) model and the Agricultural Policy Environmental eXtender (APEX) model 1/.

CRP contract data are sorted to identify acres in grass, trees, and buffers. For whole-field (grass and tree) plantings; the models are used to estimate per-acre N, P, and sediment losses from CRP fields, as compared with the losses that would occur if those fields instead were cropped, i.e., “with-” vs. “without-” CRP scenarios. The impact of CRP is estimated as the difference between these two scenarios. N and P impacts of CRP buffers are estimated based on the sediment, N, and P losses from the (state) average acres buffered by a typical buffer enrollment and trapping efficiency estimates from NRCS. The total impact on sediment, N, and P is the sum of the grass, tree, and buffer impacts.

1/ Food, and Agricultural Policy Research Institute (FAPRI). Estimating the Water Quality, Air Quality, and Soil Carbon Benefits of the Conservation Reserve Program. FAPRI -UMC Report #01-07. University of Missouri, Columbia, MO. January 2007.

Carbon Sequestration Estimates

Estimates of total carbon sequestered are developed using CRP contract data. These data are sorted to identify CRP acres in grass, wetlands, and trees. For grasslands and wetlands, estimates of the carbon sequestered per acre are obtained from published reports, and estimates developed by the Agricultural Research Service and U.S. Geological Survey. These data are merged with CRP contract data to estimate total carbon sequestered by CRP grasslands and wetlands. Because the carbon sequestered by forestlands varies by tree species and the age of the stand, the CRP tree data are sorted by region and age. U.S. Forest Service estimates of carbon sequestered per acre by region, tree species, and age are merged with the corresponding data from CRP contract data. Total carbon sequestered is the sum of the grassland, wetland, and forestland estimates.

FSA is using CRP enrollment data, the USDA soils and natural resource inventories, and cooperative agreements with Federal, State, and other partners to refine these performance measures and to estimate the benefits from CRP. For more information see <http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ecpa&topic=nra>.