



Figure 34-31. A small dam, terraces, buffer strips, and grass plantings are designed to improve the quality of water entering a lake.

Photo courtesy of USDA NRCS.

Thus, the effect of remedial measures on the contributing watershed will be slow for many cases of poor water quality. Therefore, immediate action may be needed to reduce future problems.

Integrated Nutrient Management

Farm N inputs can usually be more easily balanced with plant uptake than can P inputs, particularly where CAFOs exist. In the past, separate strategies for either N or P have been developed and implemented at farm or watershed scales. Because of different critical sources, pathways, and sinks controlling N and P export from watershed, remedial efforts directed to either N or P can negatively impact the other nutrient. For example, basing manure application on crop N requirements, thus minimizing nitrate leaching to groundwater, can increase soil P and enhance potential surface runoff losses. In contrast, reducing surface runoff losses of P via conservation tillage can enhance N leaching.

These positive and negative impacts of conservation practice on resulting water quality should be considered in the development of sound remedial measures. Clearly, a technically sound framework must be developed that recognizes critical sources of N and P export from agricultural watersheds so optimal strategies can be implemented at farm and watersheds scales to best manage both N and P. An example of this principle can be seen in Figure 34-15d.

Summary

The overall goal of efforts to reduce P losses from agriculture should be to balance off-farm P inputs in feed and fertilizer with outputs in products while managing soils in ways that maintain productivity. Source and transport control strategies can provide the basis to increase P use efficiency in agricultural systems.

...critical sources of N and P export from agricultural watersheds [must be recognized] so optimal strategies can be implemented ... to best manage both N and P.

...all fields do not contribute equally to P export from watersheds.