



Wetlands and Riparian Habitat

This Fact Sheet provides a brief overview of a specific topic important to the Master Water Control Manual Review and Update Study process. Information contained in this Fact Sheet is summarized from technical reports and the preliminary Revised Draft Environmental Impact Statement.



Summary

A total of 305,200 acres of wetlands and riparian habitat were inventoried at 44 representative sites along the Missouri River in 1991. Wetlands provide wildlife habitat, fish breeding and foraging habitat, nutrient/sediment trapping, flood control, and recreation. Riparian vegetation provides wildlife habitat, timber resources, wind shelters for residences, and locations for recreational activities. Water levels and flows affect abundance, distribution, and species composition of wetland and riparian vegetation. Over the 100-year period of analysis and based on the inventoried sites, total average annual wetland habitat ranged from 153,200 acres (C31) to 160,600 acres (FW20). This is a difference of 7,400 acres. Over the 100-year period of analysis, total average annual riparian habitat ranged from 105,100 acres (FW20) to 114,300 acres (CWCP). This is a difference of 9,200 acres.



Existing Conditions

Approximately 112,600 acres of wetlands, 60,500 acres of exposed shore, and 192,500 acres of riparian vegetation were inventoried at 44 sites along the 1,900 miles of the Missouri River from Fort Peck Lake delta in Montana to St. Louis. Water levels and flows affect abundance, distribution, and species composition of wetland and riparian vegetation.

For the environmental impact statement (EIS) analysis, “wetlands” are classified as emergent, scrub-shrub, and forested. The term “exposed shore” refers to shoreline wetlands, both vegetated and unvegetated. Within the active channel of some Missouri River reaches, the processes of erosion and deposition continuously create islands, sandbars, chutes, and backwaters that support a variety of wetlands. Deltas have developed in the lakes associated with the six mainstem dams, supporting additional extensive wetland complexes. The wetlands along the river and in deltas serve many important

functions: wildlife habitat (waterfowl, big game, furbearers, etc.), fish breeding and foraging habitat, nutrient/sediment trapping, flood control, and recreation.

“Riparian” applies specifically to the upland, or non-wetlands, component of the Missouri River floodplain. The Missouri River floodplain currently supports significant stands of riparian forest and includes numerous old channels that have been cut off from the river, forming oxbow lakes. Riparian forests serve as important wildlife habitat, timber sources, wind shelters for residences, and locations for recreational activities.



Comparison of the Alternatives

Impacts to wetlands and riparian habitat under each of the alternatives were determined by relating lake levels and/or river flows for the 100-year period of record to potential losses of wetland and riparian acreage inventoried. Analysis of the changes in these two types of habitat is based on the inventory of representative sites along the Mainstem Reservoir System and the Lower River. This included a composition evaluation of riparian and wetland habitats in response to lake levels and river flows. Vegetation changes in these sites respond to water surface elevations adjacent to and in these sites. Because the total acreage is constant and comprised of wetland vegetation types, exposed shoreline, riparian vegetation types, and water, an increase in wetlands vegetation generally results in a decrease in riparian vegetation. Figure 1 shows the distribution of the 305,200 acres of wetlands and riparian habitat types inventoried along the entire river in 1991. This distribution is based on existing water elevations at the time of the survey.

Figure 2 shows total average annual wetland habitat under each alternative. Over the 100-year study period, total average annual wetland habitat ranges from 153,200 acres (C31) to 160,600 acres (FW20). This is a difference of 7,400 acres, or 4.8



percent. Compared to the CWCP (154,000 acres), total wetland acreage increases by 1 percent (1,600 acres) under alternative C18, indicating that modifying the existing balanced system of intrasystem regulation has a slight effect on wetland habitat. Total average annual wetland habitat decreases very slightly under alternative C31 by 0.5 percent (800 acres) and increases under alternative C44 by 3.7 percent (5,800 acres) compared to the CWCP. Overall, alternative C31 and the CWCP have the lowest and second lowest values respectively, of the eight representative alternatives. Alternatives FW10, FW15, and FW20 progressively increase wetland habitat above the conservation alternatives. Alternative FW20 has the highest value of all the alternatives with an increase of 4.3 percent (6,600 acres) from the CWCP. Alternative M66 provides slightly more wetland habitat than the CWCP and alternative C31, but lower than the other alternatives, with an increase in wetland habitat above the CWCP of 0.6 percent (900 acres).

Figure 3 presents total average annual riparian habitat for the 100-year study period. As discussed earlier, riparian habitat should vary indirectly with the values presented for the wetland

habitat. As water levels decline, wetland vegetation would likely be replaced with riparian vegetation types, and vice versa. Over the 100-year study period, total average annual riparian habitat ranged from 105,100 acres (FW20) to 114,300 acres (CWCP). This is a difference of 9,200 acres, or 8.8 percent. Modifying the intrasystem regulation results in relatively minor negative change (compared to the other alternative effects) on the average annual riparian habitat acreages for the period of analysis. Adding additional conservation during droughts further reduces riparian acreages. Total riparian acreage decreases as conservation increases, with alternative C44 having the lowest value among the conservation alternatives, a decrease in total average annual riparian habitat of 5.2 percent (6,000 acres) from the CWCP. Increasing releases in the spring and early summer to benefit fish and wildlife generally increases riparian habitat in the middle and early “wet” period, but generally reduces riparian habitat during droughts. Overall, alternative FW20 provides the least riparian habitat of all the alternatives, a decrease of 8.0 percent (9,200 acres) in comparison to the CWCP.

Figure 1. Distribution (acres) of wetlands and riparian vegetation along the entire river in 1991

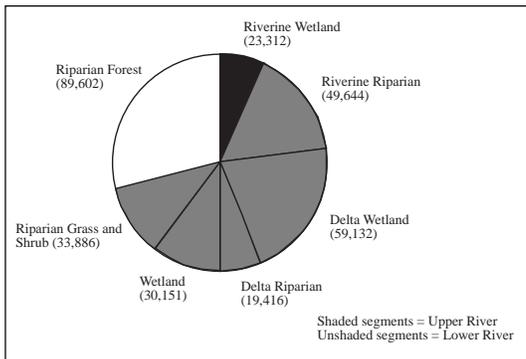


Figure 2. Total average annual wetland habitat

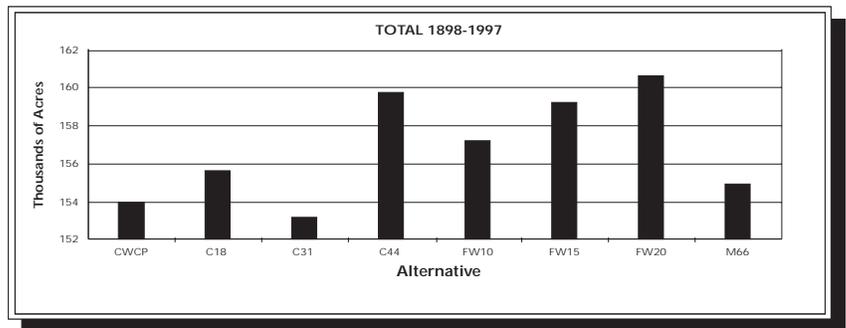


Figure 3. Total average annual riparian habitat

