

## 7.20 MITIGATION AND MONITORING REQUIREMENTS

### 7.20.1 Mitigation

Mitigation is required for environmental resources that are adversely affected in a significant way by the changes being proposed. The selected plan in the FEIS would be the change proposed by the Corps that would be evaluated to determine any mitigation needs. If the selected plan were to be one of the GP options, it would be chosen on the basis that it may ensure that the three listed species for the Missouri River, the least tern, the piping plover, and the pallid sturgeon, would continue to exist on the Missouri River. It would also ensure that their critical habitat would not be destroyed or adversely affected. Under adaptive management, monitoring, evaluation of the data, and subsequent recommendations for changes in operations could lead to adjustments in the Water Control Plan. One could go so far as to say that the efforts under the selected alternative, in combination with potential future changes under adaptive management, are efforts to mitigate existing and potential future effects of the operation of the Mainstem Reservoir System on these three listed species. The potential for mitigation for any of the alternatives discussed in this chapter can be evaluated by examining the relative differences in the various environmental resource values presented in Table 7.17-1, Impacts Summary for the Alternatives Selected for Detailed Analysis. This table shows that many of the resources are positively affected by the changes included in the five alternatives; however, three resources would be adversely affected by all five alternatives: warmwater fish habitat in the river, riparian habitat, and historic properties.

The first resource, warmwater fish habitat, is being addressed under all the alternatives to the current Water Control Plan by the release of warmer water over the Fort Peck spillway when there are spring rises released for the downstream river reach. Further examination of the breakdown of the warmwater habitat values by reach indicates that the four GP options have a slight gain in warmwater habitat downstream from Garrison Dam and have a loss of habitat downstream from Fort Randall Dam. The loss of habitat ranges from 2.2 to 3 miles. The primary reason for the Garrison reach increase in warmwater habitat is the effects of increased drought conservation during the 1930 to 1941 drought. The warmwater habitat in this reach is not critical to the pallid sturgeon, or else

measures to address this issue would have been included in the USFWS BiOp RPA. No mitigation of this resource loss is expected.

The loss of riparian habitat also occurs for all of the alternatives. Examination of the reach data also shows that it occurs over all of the reaches. One potential explanation for this is the fact that wetland habitat. Because the total habitat in the sites analyzed was fixed in size, and one component of the habitat—wetland habitat—increases, one would expect a decrease in riparian habitat. It may also be possible that, if the boundaries of the areas evaluated were not held constant, the riparian habitat may expand beyond the boundaries. No mitigation of this resource is expected.

Known historic properties, which include but are not limited to prehistoric sites, Tribal cultural resources, and historic sites, are adversely affected by all the alternatives. Increased conservation during droughts is likely the primary factor leading to this result. Because the Corps has existing programs to address the protection of sites or their documentation if protection cannot be accomplished, new efforts to mitigate the effects of the operation of the Mainstem Reservoir System on known sites are not required. Continued efforts to protect the sites are necessary to limit the adverse effects of the exposure or loss of the known sites.

### 7.20.2 Monitoring

To comply with the BiOp, monitoring of many aspects of various habitats, whether for the two bird species or the pallid sturgeon, must be established. The resulting data provide a basis on which to evaluate the effects of operations, differing flow and related conditions, and annual changes in the factors affecting the three species. Monitoring can be performed to establish a baseline against which to measure the effects of changes. It can also be performed to identify the effects of changes in the annual system operations and changes in variability provided by the range of system inflows, weather air conditions, and other physical changes, whether constructed or naturally occurring.

As changes in operations and ambient conditions occur, the monitoring data can be analyzed to determine the beneficial and adverse effects that may be occurring to the species and other river resources and uses. If the analyses of the various data provide some insight into the need for continuation of operations or a modification of

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operations, the existing data becomes the baseline for future monitoring.

The BiOp provides some insight into what needs to be monitored. The Corps has increased monitoring efforts in recent years as it has developed this Study and made steps in preparation to implement USFWS recommendations for the endangered species. For example, a significant baseline monitoring effort was established and conducted in 2001 for testing of spillway releases at Fort Peck Dam. Other monitoring activities will be initiated and expanded as other similar efforts appear on the immediate horizon.

An earlier Missouri River Natural Resources Committee effort to identify monitoring needs and

to identify a program to accomplish them resulted in the recommendation for the Missouri River Environmental Assessment Program (MoREAP). Authorization of this program has not yet been accomplished; however, the recommendation has been included in several different legislative bills considered by Congress. MoREAP would provide a sound monitoring program that could supplement existing efforts by the Corps, other Federal and State agencies, basin Tribes, and numerous private and public entities and institutions. Existing monitoring in the basin is likely only a fraction of the monitoring that will be accomplished as the entities in the basin work together to save the three endangered species and to create an ecosystem that benefits all of the resources relying on the Missouri River. MoREAP could become the nucleus of this monitoring.