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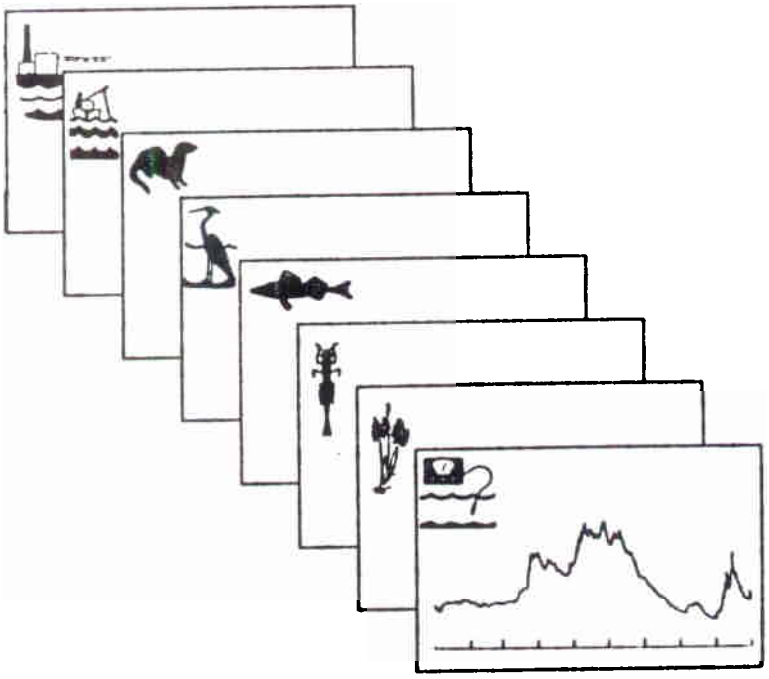
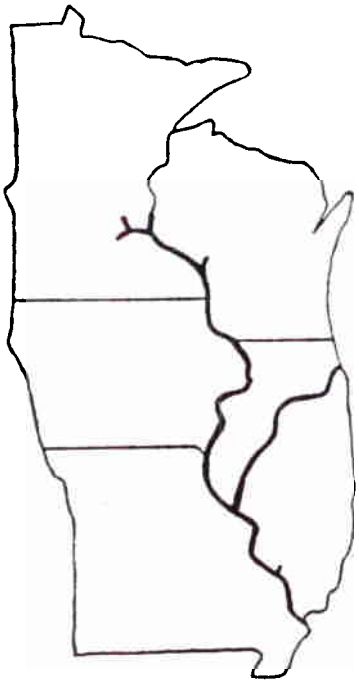
ENVIRONMENTAL MANAGEMENT PROGRAM

LONG TERM RESOURCE MONITORING PROGRAM

UPPER MISSISSIPPI RIVER SYSTEM





BACKGROUND STUDY ON THE ENVIRONMENTAL IMPACTS OF BARGE FLEETING

SEPTEMBER 1989

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U. S. FISH AND WILDLIFE SERVICE
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RECOMMENDATIONS

Many of the recommendations listed below have been previously stated in other documents (see Background Historic Recommendations, pp. 10-11). For the most part, however, they have yet to be implemented. The objective of the recommendations is to protect fish and wildlife from adverse effects of barge fleeting.

FLEETING DESIGN

Fleeting design recommendations are outlined below. In all cases, fleets should not be moored in environmentally sensitive areas (mussel beds, spawning areas, backwaters), should not be moored adjacent to environmentally sensitive areas where prop wash could increase sedimentation (i.e. side channels, backwaters) or be anchored to trees. The recommendations are based on information contained in this report.

1. The fleeting design which appears to be least damaging is one moored offshore, cabled to pilings and in water deep enough to avoid direct impacts to the benthos. This distance is related to water depth and may only be a short distance from shore.

2. If the fleet must be located along shorelines, the best design appears to be a fleet moored to a permanent structure (i.e. pilings or deadmen), in water deep enough to avoid direct impacts to the benthos and adjacent to a stable embankment. Use of grounded barges for moorage should be avoided since the grounded barge smothers benthic organisms and disturbs benthic habitat.

3. Unstable embankments should be riprapped to minimize erosion.

INSTITUTIONAL

4. Include all fleeting sites in the Corps, Section 10 permitting program, or in a similar State or Federal regulatory program. These programs provide an established mechanism for pre-construction planning and coordination. A federal program has the advantage of consistent regulations throughout the river system and would result in a comprehensive listing of all fleeting sites.

5. Improve coordination among land managers, permitting agencies and fleeters. Often it is unclear who operates the fleet, who manages the shoreline, if permission is required from land managers and what the permitting requirements are.

6. Improve the fleet operators awareness of the effects of their activities on the river environment by a series of meetings between fleet operators and field biologists and by developing a brochure or other informational material. Few opportunities have ever been provided for these diverse professionals to meet. It is important to keep open informal lines of communication.

FUTURE STUDY NEEDS

7. A more detailed background fleeting study is warranted. The study should include:

a. A more detailed literature search including investigation into nation and world-wide study efforts. Contact with the Maritime Technical Information Facility, National Maritime Research Center, Kings Point, NY 11024-1699, phone 516-773-5577 was suggested by the Great Lakes Region Director, Maritime Administration.

b. A concise report beyond the scope of this study, describing all statutory and regulatory requirements should be conducted. It should include presentation of all real estate management laws and regulations pertaining to Corps fee title lands, Service fee title lands, and Cooperative Agreement lands. The report should also discuss the recent planning documents developed for the UMRS (e.g. UMRBC, 1981; USFWS, 1987a; etc.). Synopses of agency regulatory programs, policies and constraints with citations should also be provided.

c. Fleeting sites should be identified by users and commodity activity(ies) in order to evaluate site requirements based on seasonal demands. Fleeting sites should also be identified by three categories: small - emergency needs; medium - 10 to 20 barges; and large - over 20 barges as suggested by the Great Lakes Region Director, Maritime Administration.

8. Quantification of barge fleeting effects is warranted. The study should determine and document the least damaging alternative(s) to fish and wildlife resources and include:

a. The threshold depth of river and substrate at which relatively minor or no impacts occur should be defined. Impacts associated with use of shallower depths, finer substrates and fluctuating water levels should also be defined.

b. The relationship between barge fleeting and bank erosion should be further evaluated. Impacts relative to the pushboat use, distance from shore and the bankline composition in the vicinity and at the site should be defined. Means and methods to minimize erosion should be enumerated.

c. The indirect navigation-related impacts of barge fleeting on the aquatic resource should be further evaluated. The study should compliment ongoing study efforts sponsored by the Corps, St. Louis District and the Long-Term Resource Monitoring Program.

d. The relationship between barge fleeting and the riparian wildlife community should be evaluated. Impacts outlined in this study including tree loss, general disturbance, navigation-related impacts and hazardous spills which should be examined and defined.

9. Fleeting designs which may reduce impacts or possibly enhance aquatic habitat should be explored. These include positioning of a fleet on the outside of an erodible bendway where the fleet may reduce erosion from the thalweg, or a fleet positioned in the open pooled portion of the river where it may reduce wind fetch and suspension of sediments.