COASTAL FISH & WILDLIFE HABITAT RATING FORM

Name of Area: **Times Beach Diked Disposal Site**

Designated: **October 15, 1987**

County: **Erie**

Town(s): **Buffalo**

7½' Quadrangle(s): **Buffalo SE, NY; Buffalo NW, NY**

Score	Criterion
12	Ecosystem Rarity (ER) A relatively large, diverse, coastal wetland area; unusual on the Lake Erie shoreline. Rarity reduces by chemical contamination and artificial creation of the habitat. Geometric mean: $(9 \times 16)^{½}$
0	Species Vulnerability (SV) No endangered, threatened or special concern species reside in the area.
9	Human Use (HU) Presently a birdwatching site of regional significance, although no formal public access has been developed. Research studies on fish and wildlife in the area are primarily of local significance.
9	Population Level (PL) Concentrations of migratory birds using the area are unusual in the Lake Erie coastal region.
1.0	Replaceability (R) Difficult to replace; cost prohibitive and potential replacement sites are limited.

SIGNIFICANCE VALUE = [(ER + SV + HU + PL) X R]

= **30**

DESIGNATED HABITAT: TIMES BEACH DIKED DISPOSAL SITE

LOCATION AND DESCRIPTION OF HABITAT:

Times Beach Diked Disposal Site is located within the City of Buffalo, approximately one mile south-southwest of downtown, in Erie County (7.5' Quadrangles: Buffalo NW, N.Y.; and Buffalo SE, N.Y.). The fish and wildlife habitat is a partially filled, diked, dredge spoil disposal area, located just south of the Buffalo River, on the shore of Lake Erie. This approximate 55 acre area is owned by the City of Buffalo and is leased to the U.S. Army Corps of Engineers for dredged material disposal. The site was constructed and partially filled during the early to mid-1970's, when it served as the primary disposal site for silt dredged from the Buffalo River, Buffalo Harbor, Black Rock Canal, and Tonawanda Harbor areas. The area was originally planned to be filled to 8 feet above mean low water, but since the late 1970's has been set aside as a wildlife preserve. The lakeward side of the area is surrounded by porous stone dikes, allowing water depths within the site to vary with lake levels. Times Beach contains several distinct physical zones, including: a deep water zone up to about 6 feet in depth, with submergent aquatic plants; a low-lying mud or silt flat zone of variable width (inundated by high lake levels); a gradually sloping shallow water zone with emergent marsh vegetation; and an upland zone, containing tall herbs, grasses, and stands of variously sized trees and shrubs. The upland portion of the habitat is bordered by the U.S. Coast Guard base, a marina, abandoned industrial developments, the ice boom storage area, and port facilities.

FISH AND WILDLIFE VALUES:

Times Beach Diked Disposal Site is one of the few sizeable wetland areas along the New York shoreline of Lake Erie. Although the area is man-made, and only recently created, it has become an important fish and wildlife habitat. The variety of ecological communities at Times Beach attracts a diversity of species that is unusual in this coastal region, especially within the Buffalo metropolitan area. The site lies on an important flyway for migratory birds, a key factor enhancing its potential for wildlife. Its location at the eastern end of Lake Erie, and dike-protected water area, make it a focal point for water-oriented birds moving eastward along the north and south shores of the lake.

IMPACT ASSESSMENT:

A **habitat impairment test** must be met for any activity that is subject to consistency review under federal and State laws, or under applicable local laws contained in an approved local waterfront revitalization program. If the proposed action is subject to consistency review, then the habitat protection policy applies, whether the proposed action is to occur within or outside the designated area.

The specific **habitat impairment test** that must be met is as follows.

> In order to protect and preserve a significant habitat, land and water uses or development shall not be undertaken if such actions would:
>
> - destroy the habitat; or,
>
> - significantly impair the viability of a habitat.

Habitat destruction is defined as the loss of fish or wildlife use through direct physical alteration, disturbance, or pollution of a designated area or through the indirect effects of these actions on a designated area. Habitat destruction may be indicated by changes in vegetation, substrate, or hydrology, or increases in runoff, erosion, sedimentation, or pollutants.

Significant impairment is defined as reduction in vital resources (e.g., food, shelter, living space) or change in environmental conditions (e.g., temperature, substrate, salinity) beyond the tolerance range of an organism. Indicators of a significantly impaired habitat focus on ecological alterations and may include but are not limited to reduced carrying capacity, changes in community structure (food chain relationships, species diversity), reduced productivity and/or increased incidence of disease and mortality.

The *tolerance range* of an organism is not defined as the physiological range of conditions beyond which a species will not survive at all, but as the ecological range of conditions that supports the species population or has the potential to support a restored population, where practical. Either the loss of individuals through an increase in emigration or an increase in death rate indicates that the tolerance range of an organism has been exceeded. An abrupt increase in death rate may occur as an environmental factor falls beyond a tolerance limit (a range has both upper and lower limits). Many environmental factors, however, do not have a sharply defined tolerance limit, but produce increasing emigration or death rates with increasing departure from conditions that are optimal for the species.

The range of parameters which should be considered in applying the habitat impairment test include but are not limited to the following:

1. physical parameters such as living space, circulation, flushing rates, tidal amplitude, turbidity, water temperature, depth (including loss of littoral zone), morphology, substrate type, vegetation, structure, erosion and sedimentation rates;
2. biological parameters such as community structure, food chain relationships, species diversity, predator/prey relationships, population size, mortality rates, reproductive rates, meristic features, behavioral patterns and migratory patterns; and,
3. chemical parameters such as dissolved oxygen, carbon dioxide, acidity, dissolved solids, nutrients, organics, salinity, and pollutants (heavy metals, toxics and hazardous materials).

Although not comprehensive, examples of generic activities and impacts which could destroy or significantly impair the habitat are listed below to assist in applying the habitat impairment test to a proposed activity.

Times Beach is a valuable refuge and feeding area for gulls, terns, shorebirds, dabbling and diving waterfowl, marsh birds, and passerines, especially during spring and fall migrations (March-May and September-November, respectively). Since 1972, over 220 species of birds have been observed in the area, including more than 25 species of ducks, geese, and swans (with up to 400 birds on a single day), 29 species of shorebirds (up to 14 species and 600 individuals on a single day); 10 species of gulls, 30 species of warblers, and 24 species of fringillids. These include some extreme rarities for the region, such as yellow-crowned night heron, cinnamon teal, marbled and Hudsonian godwits, ruffs, American avocet, parasitic jaeger, laughing gull, and Acadian flycatcher. Since termination of spoil disposal at Times Beach, there has been a gradual increase in marsh-nesting resident birds, and a decline in numbers and variety of migrant shorebirds and other waterbirds using the area. This is generally attributed to expansion of marsh vegetation through natural succession, and a rise in lake water levels. Bird species found in the area during the breeding season include mallard, American wigeon, ring-billed gull, common tern (T), least bittern (SC), Virginia rail, sora, common moorhen, ring-necked pheasant, killdeer, spotted sandpiper, belted kingfisher, and red-winged blackbird; however, the extent to which some of these species use the area is not well documented. An exception is American wigeon, considered an irregular, rare, breeding bird in New York, found only a few times elsewhere in the Niagara Frontier region; no less than 6 broods totaling at least 30 young were observed at Times Beach in 1985, an unprecedented occurrence in the region. Muskrat, raccoon, eastern cottontail, and several smaller mammal species have been recorded on the site. Other wildlife species found in the area include common garter snake and bullfrog. The fish community at Times Beach is not well documented, but is somewhat limited by the lack of a direct connection to Lake Erie.

As a result of the unusual diversity of bird species found at Times Beach, it has become one of the most popular bird observation and study sites in the Niagara Frontier. However, no formal access has been developed to accommodate human uses of the area. Establishment of a public nature preserve and education area has been considered for several years, and would provide valuable opportunities for outdoor education and recreation, complementing those available at nearby Tifft Farm.

Times Beach is faced with a number of problems and opportunities which may affect its value as a fish and wildlife habitat. Clearly, any activities designed to maintain or enhance selected habitat characteristics or increase compatible human uses of the area should have favorable effects. For example, efforts to set back vegetative succession, including limited additional filling, dredging, or removal of emergent vegetation may be desirable. Improved access and development of viewing or fishing sites would also be beneficial. The fisheries potential of Times Beach may be increased by providing open access between the site and the lake, creating spawning sites for such species as northern pike, largemouth bass, and panfish. However, a major concern at this site is the level of chemical contaminants that may exist in the dredged materials which comprise the substrate for the entire area. Pending results of studies by the Corps of Engineers, remedial action to reduce uptake of heavy metals or toxic chemicals into the food chain may be necessary. Such action may involve substantial modification of the habitat to minimize exposure of fish and wildlife species, reducing its value as a migratory stopover and birdwatching site.