

## **Recovery Potential Metrics** **Summary Form**

**Indicator Name:** RECREATIONAL RESOURCE

**Type:** Social Context

**Rationale/Relevance to Recovery Potential:** Public support of restoration funding uses is often strongly tied to expectations of access and outdoor recreational benefit from the restoration investment. In contrast, inaccessible and privately owned waters with impairment problems may struggle for restoration funding from public sources due to limited community support. An observable pattern of restoration projects largely on public and recreationally accessible lands is attributable largely to this factor.

**How Measured:** Scoring can be a percentage weighted by category, based on water body location in relation to the recreational land category, as 1 = water passes through no recreational use lands; 2 = water is partially within recreational use lands; 3 = water is completely within recreational use lands. The weighted percentages for each category can be summed up for the overall measure score. In case the data is not available in polygonal format, the number of recreational areas can be counted in the riparian corridor.

**Data Sources:** The Protected Area Database contains nationwide information on recreation areas (See: <http://www.protectedlands.net/dataportal/find.php> ). ArcGIS online contains a number of mapping services of recreation areas nationwide (See: <http://www.arcgis.com/home/search.html?q=recreation&t=content> ). Statewide GIS shapefiles at a minimum should include State Conservation Areas, State Forests, State Fish and Wildlife Areas, and State Parks, and other recreational land types where available.

**Indicator Status (check one or more)**

- Developmental concept.  
 Plausible relationship to recovery.  
 Single documentation in literature or practice.  
 Multiple documentation in literature or practice.  
 Quantification.

**Comments:** Operational, but variable in how different parameters of recreational use can be scored.

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**Supporting Literature (abbrev. citations and points made):**

- (Tetra Tech, Inc. 2005, unpublished project files) Data Needed: 303d segment shapefile and attribute data; 303d watershed shapefile and attribute data. Statewide GIS shapefiles for State Conservation Areas (stconsrv\_poly.shp), State Forests (stforest\_poly.shp), State Fish and Wildlife Areas (stfwa\_poly.shp), and State Parks (stparks\_poly.shp). These coverages are downloadable from the Illinois Natural Resources Geospatial Data Clearinghouse (<http://www.isgs.uiuc.edu/nsdihome> ).

Measures: Attribute data that indicates the presence or absence of each type of recreational attribute within each 303d watershed (0 = absent, 1 = present). Developed a summary measure that counts that number of recreational resource attribute categories represented in each 303d watershed (PVEO\_SCORE). Watershed results were then linked to the corresponding 303d segments using the merged shapefile impaenv.shp (provided by RTP).

Attributes Calculated (see IL303d):

ST\_CONSV: State Conservation Areas

ST\_FRST: State Forests

ST\_FWA: State Fish and Wildlife Areas

ST\_PARK: State Parks

PVEO\_SCORE: Summary Attribute (count of above attributes)

Product Format: Attribute data indicating the presence (1) or absence (0) of recreational resources in 303d watersheds and a summary that counts the number of recreational resource attribute categories represented in each watershed. Linked watershed results to corresponding segments in 303d streams table (IL303d). Map displays were produced in GIS to show 303d segments color-coded based on the summary measure (PVEO\_SCORE) for (1) statewide view - showing all 303d streams and (2) closeup screen-grab showing several example 303d segments with NHD tributaries, including upstream/downstream segments.

Comments/Issues: Additional recreational resources attributes can be added to the dataset and included in the summary measure as data becomes available.

- (Kinnell et al. 2006) While urban areas often have numerous pressing issues such as reducing crime and improving education, efforts aimed at improving recreation areas have often functioned as the beginnings of overall urban restoration efforts (Harnik 2004). This result has led some researchers to hypothesize that the route to environmental improvements in large geographic areas may lie through the revitalization of the open space and recreational areas in highly urbanized areas (Lake 2003).
- (Kinnell et al. 2006) Urban recreation improvements have become an important component of enhancing the public use and enjoyment of urban areas, especially those areas adjacent to urban waterfronts (Breen and Rigby 1996). These urban waterfront transformations are often extensive enterprises that are sweeping in both scope and scale and represent a specific component of urban revitalization. According to Breen and Rigby, in their review of urban revitalization projects over the last 40 years, developing recreation opportunities adjacent to the waterfront is a common theme in recent urban waterfront developments around the globe. These newly created public spaces - major parks, walkways and trail systems, and marinas - constitute the biggest change in today's urban waterfront.
- (Kinnell et al. 2006) In July 2002, the United States Environmental Protection Agency (USEPA) and the United States Army Corps of Engineers (USACE) entered into a memorandum of understanding to address water quality, economic revitalization, and public use and enjoyment of urban rivers (USEPA 2002). The agreement, known as the Urban River Restoration Initiative (URRI), designated eight demonstration projects throughout the United States. One component of the URRI will be to develop restoration projects that improve the recreational uses of the eight demonstration rivers and their associated shorelines.
- (Kinnell et al. 2006) To examine the welfare estimates associated with the model results, we consider four scenarios that focus on the type of choices that decisionmakers may face when developing restoration plans for urban improvements. The first scenario focuses on examining the benefit estimates associated with improving existing recreation areas. The second scenario examines the welfare estimates associated with creating new recreation areas. Including these two scenarios allows for a comparison between the welfare effects associated with focusing restoration efforts on improving existing parks and their facilities versus creating entirely new parks... The third scenario expands on the second, by examining the difference in welfare estimates associated with creating one large new recreation area versus creating three smaller recreation areas. Including this third scenario allows for comparison between the welfare estimates associated with creating a new large,

centrally located recreation area to a number of smaller, equally distributed recreation areas, a need that has been expressed in urban development plans (Abeles 2001). The fourth scenario examines the welfare estimates associated with creating new recreation areas along a waterfront versus creating the same recreation area inland. This last scenario is directly applicable to the URRI and its goals of linking urban improvements to improvements of the water quality and enjoyment of the nation's urban rivers.

- (Gotmark and Nilsson 1992) Table 2 summarizes numbers and areas of national parks, nature reserves, and nature conservation areas in Sweden as of December 31, 1986. They were pooled in all analyses and are below named "reserves." ...RECR (recreational value) was the most important criterion [in establishing reserves], used for 49% of the 1175 reserves; LAND (landscape and aesthetic value) and CULT (historical cultural value) were also important political criteria....Many biologists may not be aware of the importance of political criteria for protection of natural areas. The different political and scientific criteria reflect the many values we assign to nature (Runte 1987; Nash 1988; Rolston 1988). Given that limited funds are available for acquisition of natural areas, different human interests compete to protect areas representing different values.
- (Casagrande 1997) Surveys in the West River area indicated that residents valued the potential restoration area for its naturalness and for wildlife habitat (Casagrande, pp. 62-75, Udziela and Bennett, this volume). But they perceived the river as polluted and aesthetically displeasing. As a result, they placed a high priority on restoring an environment suitable for relaxation and encountering wildlife. These data indicate that – in this case – values and perceptions would support changes in behavior (i.e., increased outdoor recreation) as a result of restoration.