

Wolf Lake Watershed Study Recommendations

Follow-up

Which recommendations have been implemented?

Which are being planned or awaiting funding?

Which are no longer relevant?

What further studies are needed?



Diagnostic/Feasibility Study of Wolf Lake

*Completed: 1996 by Illinois DNR for Hammond, Illinois EPA,
Indiana Department of Environmental Management*

Purpose: Develop an integrated protection/management plan for Wolf Lake and its Watershed.

Recommendations

- ▶ 2-A selective deepening of the lake for macrophyte control
- ▶ 2-B Eradicating the invasive exotic plant Eurasian water milfoil and preventing its reestablishment by promoting diversity of native macrophytes
- ▶ 2-C Reducing bacterial contamination of Wolf Lake channel and improving water quality at swimming beach

Recommendations

- ▶ 2-D Managing discharges from storm sewer pumping stations in the Hammond Sanitary District
- ▶ 2-E Enhancing esthetic and recreational opportunities in and around the lake by cleaning up debris and improving fish management

Diagnostic/Feasibility Study of George Lake

*Completed: 1996 by Illinois DNR for Hammond, Illinois EPA,
Indiana Department of Environmental Management*

Purpose: Assess the present conditions of the lake and recommend an integrated protection/mitigation plan for the lake and its watershed.

Recommendations

- ▶ 3-A Controlling backflows into the lake at the outlet point
- ▶ 3-B Improving conditions for winter fish survival
- ▶ 3-C Controlling Eurasian water milfoil and preventing its reestablishment by promoting diversity of native macrophytes
- ▶ 3-D Controlling surface runoff and ground-water leachate influx from the Bairstow property into the lake

Recommendations

- ▶ 3-E Enhancing esthetic and recreational opportunities in and around the lake by enhancing sport fisheries and fish habitat in the lake

Wolf and George Lakes, IN and IL

Reconnaissance Report

Completed: 1999 by US Army Corps of Engineers

Purpose: Determine if the existing watershed problems associated with ecosystem and environmental restoration warrants federal participation. Problems being evaluated are the ecosystem restoration, bank stabilization, and rehabilitation of the control structure of Wolf Lake and the ecosystem restoration of Lake George. In order to address the restoration of Wolf Lake, it must be a collaborative effort with the states of Illinois and Indiana.

Recommendations

- ▶ 4-A Aquatic vegetation control by biological, chemical, selective deepening of Wolf Lake or a combination of these methods
- ▶ 4-B Investigate and address the factors contributing to the degradation of Wolf Lake. Eradicate the invasive, exotic plants and prevent their re-establishment by promoting diversity of native plants.

Recommendations

- ▶ 4-C Evaluation of contaminated sediments in the Wolf Lake channel effect on the ecosystem. If sediments are causing significant degradation, develop a plan for removal or containment and investigate disposal alternatives.
- ▶ 4-D Investigate and determine the extent of shoreline erosion along the banks and at the control structure of Wolf Lake and pursue recommended controls or remedies, accordingly.

Continued

Recommendations

- ▶ 5-A Investigate beneficial use of sediments through options for use of dredged materials.
- ▶ 5-B Investigate impact of the runoff from the Indiana Tollway on the Wolf Lake ecosystem and recommend remedies for adverse impacts.
- ▶ 5-C Investigate and develop a management plan for the discharges from the storm sewer pumping stations in the Hammond Sanitary District.

Recommendations

- ▶ 5-D Enhance recreational opportunities in and around the lake by adding such features as fish cribs and hiking/biking trails.

A Fisheries Survey of Wolf Lake in Lake County, IN

Completed: 1999 by Indiana Department of Natural Resources

Purpose: Survey fish in the Indiana portion of Wolf Lake.

Recommendations

- ▶ 6-A The Indiana Division of Fish and Wildlife should continue monitoring the spring and fall walleye stocking.
- ▶ 6-B The dense beds of Eurasian water milfoil should be controlled as well as hydraulic dredging of the lake channels.
- ▶ 6-C Indiana DNR and Illinois DNR should establish a Wolf Lake Management Team to develop a management plan for this important urban resource.

Recommendations

- ▶ 6-D Reciprocal fishing licenses and standardized fishing regulations are two topics the management team should investigate.

Restoration of spawning habitat for state endangered Lake Sturgeon in Wolf Lake

1999 by US Fish & Wildlife Service, US Army Corps of Engineers

Project Focus: Develop a simple plan of providing the sturgeon with clean substrate for spawning. (Not yet approved)

Project & Recommendations

- ▶ 7-A Monitor adult lake sturgeon migration patterns.
- ▶ 7-B Analyze sediment quality at potential spawning locations.
- ▶ 7-C Construct spawning habitat for lake sturgeon.
- ▶ 7-D Create wetlands near the historical connection of Wolf Lake with Lake George.

Calumet Area Ecological Management Strategy

Completed: 2000 by Chicago Department of Natural Resources, Chicago's Environment Fund, and Illinois DNR with SDI Consultants, Ltd and Jacobs/Ryan Associates

Purpose: Develop a management strategy for the preservation and enhancement of the ecological integrity of available parcels in the Calumet Region.

Recommendations

- ▶ 8-A Reconnect natural hydrological features, or establish new connections with adjustable control structures, as appropriate depending on sediment and water quality data.
- ▶ 8-B Develop and implement nuisance vegetation control or management plans targeting selective species with a uniform, regional approach with sufficient flexibility to address site-specific issues.

Recommendations

- ▶ 8-C Establish a volunteer monitoring network and stewardship program.
- ▶ 8-D Develop or establish several sites suitable for use by Black-crowned night heron rookeries to provide multiple rookery locations.

Biological assessment for feasibility of wetland restoration in Wolf Lake, Hammond, IN

Completed: 2001 by Purdue University Calumet for city of Hammond

Purpose: Assess biological feasibility and provide viable recommendations for the proposed wetland restoration.

Recommendations

- ▶ 9-A All alien species, (i.e., purple loosestrife and Eurasian water milfoil) should be eradicated prior to the introduction of native plants.
- ▶ 9-B Two areas in northern end of Pool 8 are identified as wetlands, and thus recommended for restoration. Wetland restoration is also recommended along the shorelines and at the mouth of Pool 9.
- ▶ 9-C Substrate of restored wetlands should consist of sand, gravel or mixture of two.

Recommendations

- ▶ 9-C Build gentle slopes for establishing shoreline wetlands, gradually varying water depths.
- ▶ 9-D Long-term monitoring and maintenance are critically important beyond restoration. The restored wetlands should be protected from excessive fluctuations of water level, nutrient loading, sedimentation from runoff and invasion of alien species.

Continued

A long-term comprehensive master plan is needed addressing the following points:

- ▶ 10-A Construction of sediment traps at the inlet
- ▶ 10-B Construction of “eco-bridge” in the Indiana Tollway to encourage water flow to west
- ▶ 10-C Connection of Pool 9 with Lake Michigan by installing underground culverts
- ▶ 10-D Long-term plan for monitoring and controlling alien species
- ▶ 10-E Cooperation with Illinois for removal of dikes, construction of another “eco-bridge” in the railroad that bi-sects Illinois portion of Wolf Lake, and widening of Indian Creek

Site Visit to George Lake North Basin

Completed: 2004 by JF New

Purpose: Report findings from November 19, 2004 site visit.

Recommendations for restoration

- ▶ 11-A Restore emergent marsh to native vegetation.
- ▶ 11-B Control water levels within the basin for shorebird habitat.
- ▶ 11-C Repair the eroded channel from the plastics company to the east of the site to prevent runoff from adjacent areas.
- ▶ 11-D Remove the asphalt in the southwest corner and restore to emergent wetland.
- ▶ 11-E Restore savanna community within upland areas by selective removal of eastern cottonwood, planting and seeking savanna understory species, and plant black oak seedlings.

Recommendations for public access

- ▶ 11-F Construct trails along the edge of the open water/mudflat community on the superfund site. Construct a public access overlook with educational signs discussing plant communities and plan and wildlife species present along the trail.
- ▶ 11-G Construct an overlook along the existing trail at the north end of the site with educational signs discussing plant communities and plant and wildlife species present.

Wolf Lake, Lake County 2005 Fish Management Report

Completed: 2006 by Indiana Department of Natural Resources

Purpose: Assess the status of current fishery prior to major shoreline restoration.

Recommendations

- ▶ 12-A Walleye-stocking program conducted by Perch America should continue.
- ▶ 12-B The aquatic weed control program, started in 2004 by Hammond, should continue to control non-native vegetation through spot treatment.
- ▶ 12-C Areas of native submerged plants should not be included in treatment plans for non-native vegetation.

Recommendations

- ▶ 12-D An additional fishing survey of this dynamic fishery should be conducted following the completion of the current wetland restoration project.
- ▶ 12-E The Indiana DNR and Illinois DNR should establish a Wolf Lake Management Team to develop a management plan for this important urban resource.

Ecological monitoring of restored wetlands in Wolf Lake, Hammond, IN

Completed: 2014 by Purdue University Calumet for Indiana DNR, Lake Michigan Coastal Program, City of Hammond Port Authority and Association for the Wolf Lake Initiative

Purpose: Present results from post-restoration survey and compare them with pre-restoration data collected in 2001.

Recommendations

- ▶ 13-A Establish active and continuous control of exotic plants, particularly Eurasian milfoil, purple loosestrife, cattails, and European reed (phragmites).

Studies/projects desired

Completed: 2001 Wolf Lake Vision document developed by more than 130 participants

Purpose: Develop a vision statement for the Wolf Lake watershed.

Restoration and enhancement

- ▶ 14-A Determine best management practices for restoration and enhancement.
- ▶ 14-B Determine best land protection strategies and priorities for land preservation.
- ▶ 14-C Identify pollution problems and propose solutions.

Recreation and enhancement

- ▶ 14-D Develop reciprocal agreements on licensed recreational activities.
- ▶ 14-E Support the planning of an organized youth campground.
- ▶ 14-F Plan and implement a comprehensive bi-state sign program.

Continued

Education and outreach

- ▶ 15-A Identify stewardship opportunities for schools, residents, businesses, and recreation users.
- ▶ 15-B Develop a clearinghouse and speakers' bureau to inform and recruit community participants.
- ▶ 15-C Establish a clearinghouse providing access to information on Wolf Lake for teachers and students.

Planning and management

- ▶ 15-D Create the Wolf Lake Advisory Committee as a forum to bring together public and private agencies and interests, to provide community input, and to foster communications between primary Wolf Lake managers and other state/regional planners regarding management of lake.
- ▶ 15-E Collect current Wolf Lake-related research to form baseline data and determine future research needs.
- ▶ 15-F Encourage bi-state support for implementation of aquatic ecosystem restoration at Wolf Lake.

Continued

Planning and management

- ▶ 16-A Support the findings of Forest Service Public Perception of Ecosystem Enhancements of Wolf Lake and Indian Creek study.
- ▶ 16-B Increase outreach to diverse local communities through meetings.
- ▶ 16-C Explore the need for and the approaches to creating a bi-state master plan for Wolf Lake.

Funding for achieving vision

- ▶ 16-D Strongly support the priority efforts of primary public land managers.
- ▶ 16-E Invite primary land management managers to participate in discussions/prioritization of all potential projects relating to Wolf Lake.
- ▶ 16-F Begin fundraising/implementation for priority projects that would provide a model for future projects.
- ▶ 16-G Limit funding sought only to those projects that contribute to fulfillment of the overall vision for Wolf Lake.

Studies/Projects

Completed: 2006 Planning for the Future: A Reuse Planning Report for the Calumet Container Superfund Site by US EPA Region 5

Purpose: Envision a management plan for the Calumet Container site

Recommendations

- ▶ 17-A ➤ the city of Hammond and Lake County need to “continue to work with the community as the site’s framework is developed” and provide the community with “regular informational updates.”
- ▶ 17-B ➤ the site needs “to be routinely inspected and invasive species removed...Local stakeholders along with the city of Hammond and Lake County could develop a shared maintenance plan and responsibilities.”

Recommendations

- ▶ 17-C ➤ “Establishing a protection zone...around the site’s perimeter by controlling phragmites would greatly improve the establishment and survival of the site’s newly seeded areas.”
- ▶ 17-D ➤ either the city of Hammond or Lake County “will need to determine local responsibilities for maintaining the site in the future. Responsibilities will include regular site monitoring and visual inspection of plant establishment, herbicidal treatment of invasive species and possible mowing.”

Studies/Projects

- ***Hydrologic Evaluation & Stream Restoration Recommendations for Indian Creek***, by Elon S. Verry, USD.A. Forest Service, Grand Rapids, MN, February 2001, implemented along a third of Indian Creek
- ***Networks and Fragmentation Among Community Environmental Groups of Southeast Chicago***, by Kathleen A. Gillogly and Eva C. Pinsker, 2001, remains relevant for today's planners
- ***Action Memorandum*** by US EPA Region 5, November 4, 2002, implemented
- ***Wolf Lake Futures: Public Perceptions, Expectations and Ideas for the Future of Wolf Lake*** by Lynne Westphal, Cherie LeBlanc, USDA Forest Service, 2005, remains relevant for today's planners

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