



Project Profile

Project Title: Stream and Wetland Restoration in Ulao Creek – Milwaukee Estuary AOC

Grantee Organization: Ozaukee County Planning and Parks Department

Project Team: Andrew Struck, Director, Karina Ward, Planning and GIS Specialist, Matt Aho, Program Manager, Kristina Kroening, Fish Passage / Ecological Program Assistant II, Cynthia DeGroot, Administration Manager (Ozaukee County Planning and Parks Department); Beth Wentzel, Project Engineer (Inter-Fluve, Inc); Jim Sykes, Owner, Aaron Sykes, Project Manager, Samantha Gehl, Business Manager (Solutions, 101 LLC).

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Grant Amount: \$154,923

Time Frame: 8/6/14 -8/5/16

Focus Areas: Habitat Protection and Restoration

Brief Project Summary: Ozaukee County is completing a large-scale habitat restoration project on Ulao Creek, restoring multiple stream reaches for maximum ecologic productivity. Great Lakes Fishery Trust funding directly contributed to the re-meandering of 1,769 feet of stream channel, reconnection of 140 acres of 100 yr floodplains and 14.3 acres of wetlands, installation of multiple fish, wildlife, and avian habitat structures, invasive plant controls, and native plant restoration including the planting of 869 large trees. The project is providing direct, tangible aquatic habitat improvements for resident and migratory native and desirable introduced fish species in the Milwaukee River Watershed and Lake Michigan Basin.

Project In Context: Land-use changes, invasive species and other human-induced impacts have greatly diminished biological and ecological productivity in the Milwaukee River Watershed and Milwaukee Estuary Area of Concern (AOC). Only a fraction of the potential stream and riparian fisheries habitat reaches its full ecological potential. Improved fish habitat promotes the long-term restoration of naturally-reproducing, native and desirable introduced migratory fish species to the lower Milwaukee River, the AOC, and nearshore waters of Lake Michigan. Ulao Creek is an 8.8 mile long, low gradient stream discharging to the Milwaukee River. The creek has multiple tributaries and pools and deep runs to provide fish refuge from drought and low-flow conditions, and its watershed contains approximately 28% of wetlands suitable for northern pike spawning in the Milwaukee River Watershed. Historic

manipulation has left over 90% of the stream dredged and straightened and disconnected from adjacent floodplains and wetlands.

Ozaukee County, Wisconsin Department of Natural Resources, Southeast Wisconsin Regional Planning Commission, Great Lakes Ecological Services, and other partners are finalizing a USEPA-funded, GIS-based Fish and Wildlife Habitat Tool (Tool), which prioritizes restoration projects based on species requirements and the greatest benefit to the resource. Tool results and consultation with local fish, avian and wildlife experts indicated high priority project sites at the proposed project locations. Two and five-year floodplain studies for Ulao Creek and additional streams were developed to understand and prioritize native fish, avian and wildlife habitat restoration, wetland improvement, and floodplain connectivity projects for maximum value. The project is complementary to 20 years of related work and directly synergistic with the elimination or modification of remaining barriers (linear connectivity) and rehabilitation of stream corridors, floodplains and wetlands (lateral connectivity) as critical tasks for the rehabilitation of fish and wildlife populations and habitat in the Lake Michigan Basin. The County had already completed 10 fish passage impediment removal or restoration projects in Ulao Creek, opening a large majority of the Ulao Creek Watershed to linear connectivity and the free passage of resident and migratory aquatic life in the watershed. The watershed has been the focus of several restoration projects conducted by the Ulao Creek Partnership, Inc. (UCP) and other partners since 1995, and the County is working with the USFWS on additional linear connectivity projects in the Bluewing Waterfowl Production Area, a USFWS-owned wetland area located on Kaul Creek, a tributary to Ulao Creek immediately upstream and adjacent to the project area. The GLFT project activities (Phase III) occurred in conjunction with additional planned and funded Phase I and Phase II construction and restoration activities in 2014 and 2015.

The project addresses high priority needs of several programs/plans to preserve, restore, and enhance aquatic and terrestrial resources, including: a) Great Lakes Regional Collaboration Strategy to Protect and Restore the Great Lakes (2005); b) USEPA's Lake Michigan Management Plan (2008); c) SEWRPC's Regional Natural Areas and Critical Species Habitat Management Plan (1997); d) SEWRPC's Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds (2007); e) WDNR's Integrated Water Resources Management Plan for the Milwaukee River Basin (1997); f) WDNR's Final Report of the Milwaukee River Basin Environmental Indicators Work Group (March 1999); g) WDNR's The State of the Milwaukee River Basin Report (August 2001); h) WDNR's Lake Michigan Integrated Fisheries Management Plan (draft) 2015-2024 (2015); i) WDNR's Wisconsin Great Lakes Restoration and Protection Strategy (2007); j) A Multi-Jurisdictional Comprehensive Plan for Ozaukee County: 2035 and amendments (2008, 2009, 2013); k) Ozaukee County Land and Water Management Plan Update (2011); l) A Park and Open Space Plan for Ozaukee County (2011); and m) Milwaukee Estuary Area of Concern Remedial Action Plan (2014).

Goals of the Effort: The key project goal is to restore sustainable populations of native migratory fish species along the nearshore areas of Lake Michigan, the Milwaukee River Watershed, and the Milwaukee Estuary AOC by restoring historical, high quality spawning and rearing habitats.

Results: Approximately 1,769 feet of stream channel has been restored at Phase III. The project has restored and/or enhanced available wetland habitat, including the reconnection of approximately 14.3 acres of wetlands, 10.6 acres of 2-year floodplain, 12.7 acres of 5-year floodplain, and 140.1 acres of 100-

year floodplain. 49 units of large woody debris for fish and wildlife habitat, four bluebird houses, and one wood duck box was installed in the Phase III project area. The project included the reestablishment of native vegetation as recommended by Hewitt's 2002 study of the Ulao Swamp, while also controlling invasive species through constructed topographic features (e.g., nature-like hummocks) and targeted native plantings. To date, 499 full-size trees, 190 live tree stakes, 252 potted shrubs, and 500 live shrub stakes have been planted at Phase III. GLFT funding provided for the proposed project outputs (e.g., 92 full size trees, 50 live tree stakes, 50 potted shrubs, and 140 live shrub stakes) and match funding provided for the balance of plantings. Pre-construction and ongoing fish and wildlife monitoring at all phases/areas of the Ulao Creek Habitat Restoration site are being completed. Monitoring events have documented: 16 fish species: (backpack electrofishing, minnow trapping), 14 reptile and amphibian species (cover object surveys, visual surveys, minnow trapping, egg mass surveys, turtle hoop trapping), three species of crayfish (minnow trapping), 71 bird species (visual/audio point and count surveys), and 16 mammal species (visual surveys). During the GLFT grant award period, the Ozaukee County Planning and Parks Department staff provided Fish Passage Program and project information to over 7,513 people at 45 professional meetings, presentations, conferences, volunteer work days, and other education and outreach events.

Products and Resources: Additional project information can be found on the Planning and Parks Department's Ecological Divisions Fish Passage Program (Program) webpage at: <http://www.co.ozaukee.wi.us/1879/Ulao-Creek>. This website also includes a link to multiple partner newsletters and press articles. The project was also featured on the Program's education and outreach video which can be viewed at: <http://www.co.ozaukee.wi.us/619/Fish-Passage> or at https://youtu.be/Tuh_lbsgBsU.