Niagara Greenway Habitat Conservation Strategy

Phase I Project Overview

February 26, 2013
Project Goal

Within the Niagara River Greenway, develop a regional conservation strategy aimed at restoring a functional Niagara River ecosystem.

How?
Use the Conservation Action Planning (CAP) process to create a strategic blueprint that connects, supports and advances previous, ongoing and new conservation opportunities using all the tools in the toolbox: Restoration, Regulation, Acquisition, Protection, Education.
Why is the project needed?

- Provides stakeholders (GESC included) the tools to implement “restoration of the Niagara River ecosystem” as prioritized in the Niagara River Greenway Plan;

- Assists in organizing, assessing and prioritizing conservation opportunities to leverage Federal, State and private funding for implementation;

- Supports delisting of the Niagara River Remedial Action Plan:
  - Develop measurable targets for delisting criteria
  - Create and manage long-term implementation plans for priority habitats
  - Identify additional Habitat Improvement Project (HIP) opportunities
Objectives

1. Compile and Review Existing Datasets and Literature
2. Establish and Consult with a Technical Advisory Committee
3. Define Project Scope, Vision, Participants, Outreach Strategies
4. Identify and Address GIS Spatial Gaps for the Niagara River Greenway
5. Develop a Set of Biodiversity Features Which Define the Project Area Including Specific Species, Natural Communities and Ecosystem Function
6. Evaluate GIS Datasets for Effectiveness Relative to Biodiversity Features and Begin to Develop Maps and Datasets Needed to Complete Assessments in Phase 2
7. Assess Status and Progress with GESC; Secure funding to Proceed to Phase 2
CAP MODEL (TNC): AN ECOSYSTEM-BASED PLANNING APPROACH

- Scientifically driven
- Adaptive and flexible
- Stakeholder influenced
- Focuses actions where they are likely to have the most impact
- Regionally relevant: other Great Lakes CAPs
ACTIVE RIVER AREA, TNC

- **HEADWATERS**
  - CPOM, LWD, SEDIMENT INPUTS
  - 30-60 METERS FROM CHANNEL
  - <1 YEAR RECURRENT INTERVAL

- **MID-WATERSHED**
  - MEANDER BELT ADJUSTMENTS DUE TO
    - SEDIMENT EROSION, STORAGE, DEPOSITION, AND TRANSPORT IN THE CHANNEL AND FLOODPLAIN
  - MEANDER BELT (4-5 CHANNEL WIDTHS)
  - ADJACENT LOW ACTIVE FLOODPLAIN
  - 1 TO 10 YEAR RECURRENT INTERVAL

- **LOW-WATERSHED**
  - FLOODPLAIN INUNDATION AND LONG-TERM SEDIMENT STORAGE
  - ENTIRE VALLEY BOTTOM
  - 1-10 YEARS RECURRENCE INTERVAL
Greenway Active River Area

- 70,553 acres (42% of Greenway)

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<th>Municipality Name</th>
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Phase I LIDAR Land Cover Analysis
*Compared to NOAA land cover data, BNRK effort found 728 acres of additional wetland, 575 acres of woodland, 1,041 acres of grass/shrubland
LIDAR Land Cover Utility

- Fills critical information gaps about existing land cover and biodiversity features in the Greenway relative to project scope;
- Provides baseline metrics to develop RAP delisting targets;
- Provides a riparian desktop tool useful at a 1-foot resolution and with 95% confidence levels;
- Developed a geodatabase that will be continuously queried in Phase 2 to identify conservation priorities on the ground and to support planning work.
Niagara River Greenway Biodiversity Features

- **Aquatic Habitat:** Niagara River and lower tributary open water including Benthic: >6 feet deep, and Nearshore: 6 feet to mean high water mark

- **Large or connected Natural Areas:** Land covers supporting terrestrial habitat connectivity and/or stream function within

- **Wetlands:** Emergent and woody wetlands including springs, seeps and headwater wetland areas.

- **Woodlands:** Deciduous, evergreen and mixed forest

- **Grasslands/Shrublands:** Meadows, and early successional lands including farmland and selected capped landfills

- **Islands:** Natural and manmade, including breakwalls and surrounding shallow water habitat

- **Unique Area: Niagara Gorge:** Including 6 miles of rim, talus slope and shoreline between Niagara Falls and the escarpment edge at Lewiston.
Where We Are Now: Viability Analysis

Why Assess?
- To define and assess current health of Biodiversity Features
- To set clear goals for desired condition
- To assist in developing focused strategies to meet goals

For each Biodiversity Feature:
- Determine viability based on:

Connectivity  Amount/Size  Quality  Species
Aquatic Habitat: Quality

- The macro invertebrate community should be non- or slightly impacted (i.e. at least “Good”)
Aquatic Habitat: Connectivity

- RAP goal: There should be healthy reproducing populations of native mollusks, amphibians, fish and fish-eating birds.

- CAP Indicator for native migratory fish: > 50% of tributary is accessible
Existing Accessibility

-On average, 36.28% of perennial stream miles within the Greenway are accessible to fish (barrier-free)

Two-Mile Creek

- 14.43% accessible
- Low-flow conditions and small jump, limiting warm season fishes
- Recommended Mitigation Option: Step-pool

Spicer Creek (Forest Creek Road)

- 21.13% accessible
- Dense Vegetation functions as seasonal barrier
- Vegetation removal recommended
Beginning Analysis of Threats

Goals:

(1) Identify which threats are affecting selected biodiversity features
(2) Identify which threats are more of a problem

Result is a set of critical threats for each biodiversity feature

Project Outcome:

Strategic conservation efforts focused on abating the critical threats to biodiversity features.