

Why Niagara? How the Niagara River Corridor aligns with the Criteria of the Ramsar Convention.

Prepared by Jajeane Rose-Burney

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Niagara River Corridor Ramsar Site Steering Committee:

- Jajeane Rose-Burney (U.S. co-chair, Western New York Land Conservancy)
- Jocelyn Baker (Canada co-chair, unaffiliated)
- Corey Burant (Niagara Parks Commission)
- Joseph Gould (Buffalo Niagara Waterkeeper)
- Tim Heinmiller (Environmental Sustainability Research Unit, Brock University)
- Ryan McPherson (Chief Sustainability Officer, University at Buffalo)
- Kerry Mitchell (unaffiliated)
- Alicia Perez-Fentetaja (Biology Dept. and Great Lakes Center, SUNY Buffalo State College)
- Patrick Robson (Niagara College)
- Lynda Schneekloth (Regional Institute, University at Buffalo)
- Liette Vasseur (Environmental Sustainability Research Unit, Brock University)

Support provided by Kim Diana Connolly (University at Buffalo School of Law)

UB School of Law Student Attorneys and UB School of Architecture and Planning students who participated included: Brittany Andrews, Leah Bernhardt, Samantha Buell, Heather Burley, Andrea DiNatale, Ian Dineen, Devin Franklin, Megan Furrer, Jesse Hoelscher, Kristen Hook, Chris Kennedy, Amruta Kharote, Yeon Jin Kim, Colin Knoer, Anna Kumechko, John Land, Patrick Leavy, Francis J. Marrano, Jay Organek, Norma Polizzi, Lindsay Poole, Eamon Riley, Mathew Ronan, Jeffrey Shalke, Cory Shirley, Joseph Smith, Mengjie Song, Bridget Steele, Robert Townsley, and Jacob Umoke

Introduction

The Niagara River is one of the most remarkable natural places in North America, if not the world. The Niagara River Corridor (U.S.) Ramsar Site meets eight of nine criteria used for identifying wetlands of international importance under the Ramsar Convention. Only a small proportion of Ramsar sites around the world meet as many criteria.

The Site Boundary

The Niagara River Corridor (U.S.) Ramsar Site includes the U.S. side of the Niagara River, from Lake Ontario in the north to Lake Erie in the south. The site includes much of the riparian lands along the river's edge. The riparian lands included are located on protected green spaces adjacent to or near the river and include parks, nature preserves, undeveloped islands in the river, and other greenspaces around institutional land and public infrastructure. The site excludes privately-owned land along the shoreline, private properties that extend into the river, and private railroad bridges that cross the river.

Applicable Criteria

Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.

- The Niagara River is unique because it is home to Niagara Falls, three separate waterfalls which combine to form the highest volume waterfall in North America (including the Great Lakes/Eastern Forests Biogeographical Provinces) ([World Waterfall Database “Niagara Falls”](#)).
- The Niagara River is a strait connecting two larger fresh water lakes, Lake Erie and Lake Ontario. There are few other straits in North America (including the Great Lakes/Eastern Forests Biogeographical Provinces) that connect large bodies of freshwater, and none that carry as much water annually as the Niagara River, making the Niagara River unique.
- The New York State Department of State has identified numerous Significant Coastal Fish and Wildlife Habitats within the Niagara River Corridor, including a riverine littoral zone in the upper Niagara River that is a rare ecosystem type in the Great Lakes and extremely valuable fish and wildlife habitat ([NYS DOS “Significant Coastal Fish & Wildlife Habitats”](#)).
- The 30-hectare cattail marsh at the Tifft Nature Preserve is the largest section remaining of a much larger marsh once found at the mouth of the Buffalo River on Lake Erie and previously common on the Great Lakes (Spiering 2009), and is representative of the Tp: Permanent freshwater marshes/ pools wetland type. The marshes in Buckhorn Island State Park, the East River Marsh, and Strawberry Island are also representative of the Tp: Permanent freshwater marshes/ pools wetland type.
- Economic opportunities surround the Niagara River Corridor. The U.S. side of the Niagara region (Erie, Genesee, Niagara, Orleans, and Wyoming counties) attracts 22.5 million visitors annually. The tourism industry associated with the Niagara region has \$2.7 billion of sales annually, supports 53,168 jobs, and generates generated \$891 million in direct labor income and \$1.5 billion of income including indirect and induced impacts. Tourism generates 13.2% of Niagara County’s labor income and 4.4% of Erie County’s labor income.
(<https://www.wycochamber.org/files/mgQwaU/NYS%20Tourism%20Impact%20-%20Greater%20Niagara%202017.pdf>)

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

- The presence of rare species and threatened ecological communities provide unique conservation, birdwatching, and photographing opportunities in the Niagara River Corridor. The site supports at least 338 species of birds, 100 species of fish, 31 species of mammals, 11 species of reptiles, 13 species of amphibians, 12 species of mussels, and 231 species of plants. Of these species, 21 are listed in CITES, seven are listed on the IUCN Red List (CR, EN or VU only), and more are protected federally in the U.S. (one species), and at the state level in New York (45 species).
- The corridor also includes two ecological communities considered vulnerable in New York State, calcareous cliff community and calcareous talus slope woodland, as well as rare old growth forests.

Plant and animal species data sources include:

Mussels

- From a list compiled by Margaret Wooster at Buffalo Niagara Riverkeeper from NYS Natural Heritage Program data and NYS Species of Greatest Conservation Need data. (U.S. Records)
- U.S. Geological Survey website. "NAS - Nonindigenous Aquatic Species". Retrieved on August 12, 2014. (<http://nas.er.usgs.gov/taxgroup/mollusks/zebramussel/>) (U.S. records only)"

Reptiles

- NYS Department of Environmental Conservation website. "Herp Atlas Project". Retrieved on July 23, 2014. (<http://www.dec.ny.gov/animals/7140.html>) (U.S. records only)
- Environmental Design & Research, Landscape Architecture, Planning, Environmental Services, Engineering and Surveying, P.C. (EDR). 2010. Ecological Inventory of the Niagara River Gorge and Rim - Draft. (Species identified during on-site ecological surveys conducted by EDR in June 2010 only) (U.S. Records)

Amphibians

- Marsh Bird and Amphibian Communities in the Niagara River (Canada and USA) AOC, 1995 – 2002. Results of the Marsh Monitoring Program. (U.S records only)
- NYS Department of Environmental Conservation website. "Herp Atlas Project". Retrieved on July 23, 2014. (<http://www.dec.ny.gov/animals/7140.html>) (U.S. records only)
- Environmental Design & Research, Landscape Architecture, Planning, Environmental Services, Engineering and Surveying, P.C. (EDR). 2010. Ecological Inventory of the Niagara River Gorge and Rim - Draft. (Species identified during on-site ecological surveys conducted by EDR in June 2010 only) (U.S. Records)

Mammals

- Rising, Gerry, and Bob Andrie. Fauna of Times Beach Nature Preserve from 1994 to 2004. Unpublished. (U.S. Records)
- Environmental Design & Research, Landscape Architecture, Planning, Environmental Services, Engineering and Surveying, P.C. (EDR). 2010. Ecological Inventory of the Niagara River Gorge and Rim - Draft. (Species identified during on-site ecological surveys conducted by EDR in June 2010 only) (U.S. Records)
- DePriest, Tim. Recent NYS DEC Niagara River records. Unpublished. (U.S. Records)

Birds

- eBird data for the Niagara River Corridor IBA. Retrieved on February 1, 2014. (www.ebird.org) (U.S. and Canada Records)
- Niagara River Corridor IBA Working Group. 2002. Niagara River Corridor Important bird Area Conservation Plan. Bird Studies Canada, Birdlife International, and the Canadian Nature Federation. (U.S. and Canada Records)
- C - DiTommaso, Dean, and David Suggs. B.O.S. Noteworthy Records Database, 1964-2013. "The Prothonotary." vols. 30-79. Buffalo Ornithological Society. (U.S. and Canada Records)
- Moore, Dave, Francie Cuthbert, Chip Weseloh, and Linda Wires. Colonial Waterbirds Nesting on the Niagara River, 1976-2011. (PowerPoint Presentation at the Niagara River RAP Implementation Committee Session, 10 April 2013). Environment Canada. (U.S. and Canada Records).
- NYS Department of Environmental Conservation website. "NYS Breeding Bird Atlas (2000-2005)." Confirmed, probable and possible records. Retrieved on July 23, 2014. (<http://www.dec.ny.gov/animals/51030.html>) (U.S. Records)
- NYS Department of Environmental Conservation website. "NYS Breeding Bird Atlas (1980-1985)." Confirmed, probable and possible records. Retrieved on July 23, 2014. (<http://www.dec.ny.gov/animals/51030.html>) (U.S. Records)

Fish

- Yagi A.R and C. Blott. 2012. Niagara River Watershed Fish Community Assessment (1997 to 2011). Ontario Ministry of Natural Resources unpublished report. (<http://www.npca.ca/wp-content/uploads/NIAGARA-RIVER-WATERSHED-FISH-COMMUNITY-FINAL-Aug-2013.pdf>) (Canada records only)
- NYS Department of Environmental Conservation website. "Fish Atlas Maps of New York". Retrieved on July 29, 2014. (<http://www.dec.ny.gov/animals/84622.html>) (U.S. records only)
- Trometer, Betsy. 2011. Larval and young-of-the-year fishes found in the Upper and Lower Niagara River - Draft. USFWS – Lower Great Lakes Fish and Wildlife Conservation Office. (U.S. records only)
- Kapuscinski, Kevin. 2014. Unpublished fish sampling data from the lower & upper Niagara. SUNY, College of Environmental Science and Forestry. (U.S. records only)

Plants

- Environmental Design & Research, Landscape Architecture, Planning, Environmental Services, Engineering and Surveying, P.C. (EDR). (2010). Ecological Inventory of the Niagara River Gorge and Rim - Draft. Report for Wild Ones: Native Plants, Natural Landscapes. (U.S. Records)
- Western New York Land Conservancy. (2017-2018). Rare Plant Observations in the Niagara Gorge. (U.S. Records)

Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region.

Of the high biological diversity supported at the Niagara River Corridor, at least one species is considered a “keystone” species: the Emerald Shiner (*Notropis atherinoides*). Although much of the Emerald Shiner’s life cycle is unknown, they are considered the base of the food web for many fish-eating birds and sports fish. They are particularly important to the Common Tern (*Sterna hirundo*), a NYS threatened species (“New projects: Researching a keystone species in the Niagara River”).

Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

The Niagara River Corridor supports numerous species during critical stages in their lifecycles. These stages include nesting, migration, and overwintering for birds, and spawning for fish.

- At least 137 species of birds nest in the Niagara River Corridor, including 42 waterbirds and seven species of colonial nesting waterbirds. These species provide an opportunity for birdwatchers to come to the Niagara River Corridor and provide an economic boost to the area. The birdwatchers who visit the Niagara River Corridor contribute to the massive \$41 billion spent by birdwatchers annually on trips and equipment. (<https://www.census.gov/quickfacts/fact/table/buffalocitynewyork,niagarafallscitynewyork/PST045217>)
- The Niagara River Corridor forms part of the Atlantic Flyway, one of four major bird migration corridors in North America (USFWS “Migratory Bird Program”). The corridor has large amounts of high quality landbird and waterfowl stopover habitats (USFWS “Great Lakes Migratory Bird Stopover Portal”). Because of these factors, the corridor supports at least 232 migratory birds, 106 of which are waterbirds.
- The Niagara River Corridor is incredibly important as an overwintering site for waterbirds because it stays mostly unfrozen throughout the coldest winter months when most other freshwater bodies are

frozen (Niagara River Corridor IBA Working Group 2002). During this period of extreme hardship, 92 species of birds overwinter in the site, including large congregations of at least 40 species of waterbirds (including gulls and waterfowl).

- The New York State Department of State has identified numerous Significant Coastal Fish and Wildlife Habitats within the Niagara River Corridor, mostly because of their importance as freshwater fish spawning ground (NYS DOS “Significant Coastal Fish and Wildlife Habitats”). At least 41 species of fish have been recorded spawning in the Niagara River.

Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

Greater than 120,000 (single day observations have exceeded 100,000 gulls and 20,000 waterfowl). Source of data: Important Bird Areas in Canada website. “IBA Database – Niagara River Corridor”. Retrieved on 11/15/2014.

Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

At least six waterbirds congregate in the Niagara River Corridor in globally significant numbers based on single day observations (Important Bird Areas in Canada “IBA Database – Niagara River Corridor.”):

- Canvasback (*Aythya valisineria*): 6,000 or >1% (1997) to 14,000 or >2% (1997)
- Greater Scaup (*Aythya marila*): 15,000 or >1% (1979)
- Red-breasted Merganser (*Mergus serrator*): 9,000 or >1% (2011)
- Bonaparte's Gull (*Chroicocephalus philadelphia*): 4,000 or >1% (2006, 2007, 2010, 2013) to 100,000 or >25% (1995)
- Herring Gull (*Larus argentatus*): 40,000 or >1% (2010) to 50,000 or >1% (1979)
- Ring-billed Gull (*Larus delawarensis*): 27,000 or >1% (1995) to 32,000 or >1% (1998)

Criterion 7: A wetland should be considered internationally important if it supports a significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.

The Niagara River Corridor sustains at least 89 species of indigenous, freshwater fish.

Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

The New York State Department of State has identified numerous Significant Coastal Fish and Wildlife Habitats within the Niagara River Corridor (NYS DOS “Significant Coastal Fish and Wildlife Habitats”). Most of these are important spawning grounds for native freshwater fish. From recent studies, at least 41 species of fish are known to spawn in the Niagara River, although it is likely that more species spawn there.

