Wildlife and Habitat Indicators

Bruce Szczechowski

Southgate Anderson High School and Downriver Stream Teams

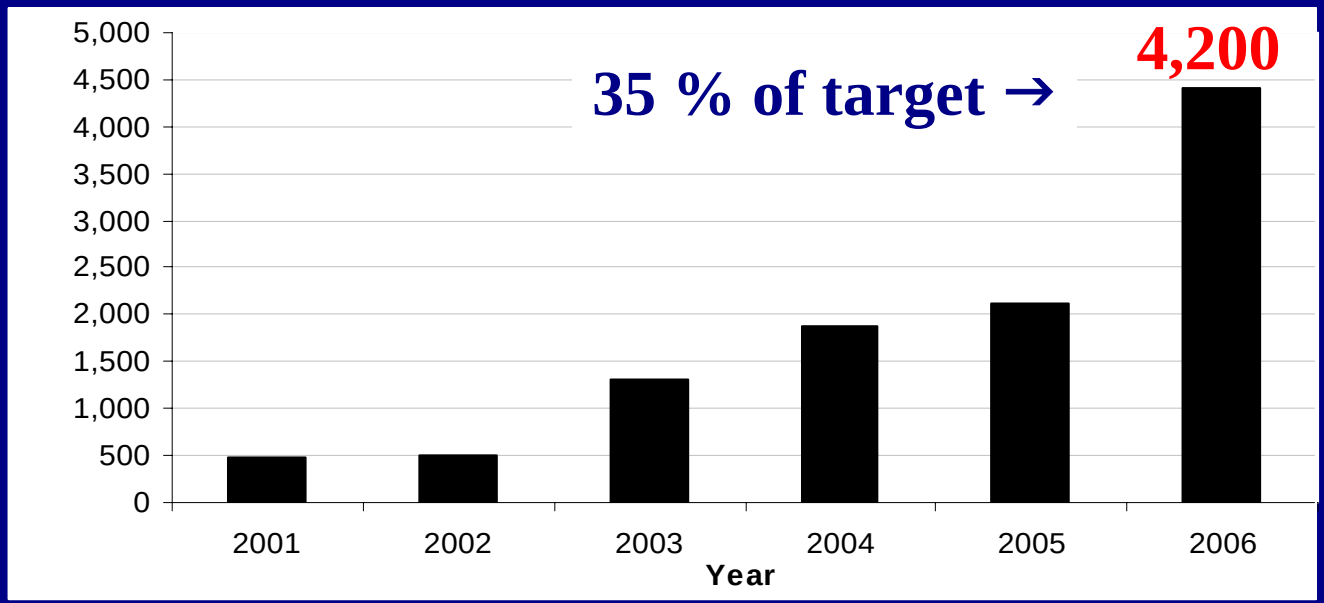
Wildlife and Habitat Indicators

INDICATOR	CONTACTS
IWR Conservation	John Hartig & Steve Dushane, Detroit River IWR
Coastal Wetlands	Bruce Manny, USGS
Aquatic Macrophytes	David Moore, Utica College
Wild Celery	Don Schloesser & Bruce Manny, USGS
Canvasback	Joseph Robison, Michigan DNR
Christmas Bird Count	Julie Craves, RRBO
Double-crested Cormorant	Chip Weseloh, CWS
Common Tern	Bruce Szczechowski, Stream Team & Jim Bull, Detroit Audubon
Bald Eagle	Debbie Badzinski, BSC & Dave Best, USFWS
Peregrine Falcon	Judith M. Yerkey, Southeastern Michigan Peregrine Consultant & Tim Payne, Michigan DNR

International Wildlife Refuge Land Conservation

John Hartig & Steve Dushane, Detroit River IWR

- Established in 2001
- Only International Refuge in NA & in a major urban area
- Rouge & Detroit R. to Western L. Erie
- 304 acres (2001) - 4,200 acres (2006)



International Wildlife Refuge (IWR) Land Conservation

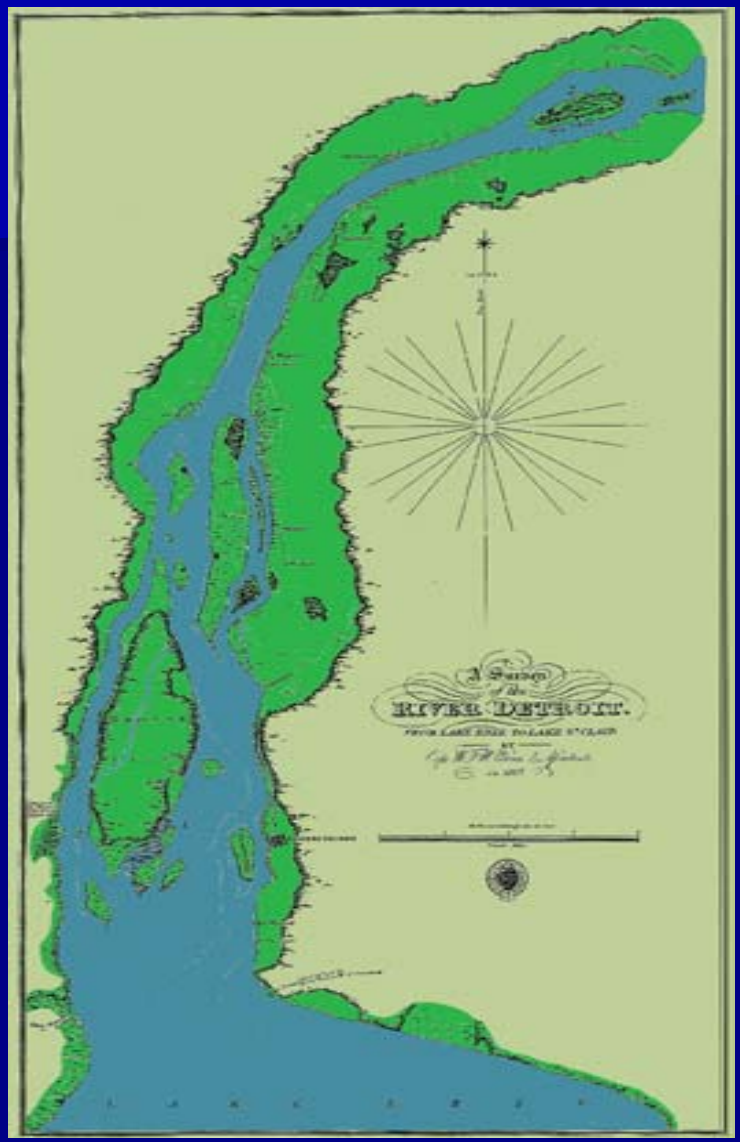
- Target: 12,000 acres
- Needs:
  - ➢Conservation
  - ➢Public-private partnership
  - ➢↑ Canadian property
  - ➢Vegetation survey & waterfowl nesting counts

Detroit River Coastal Wetlands (area)

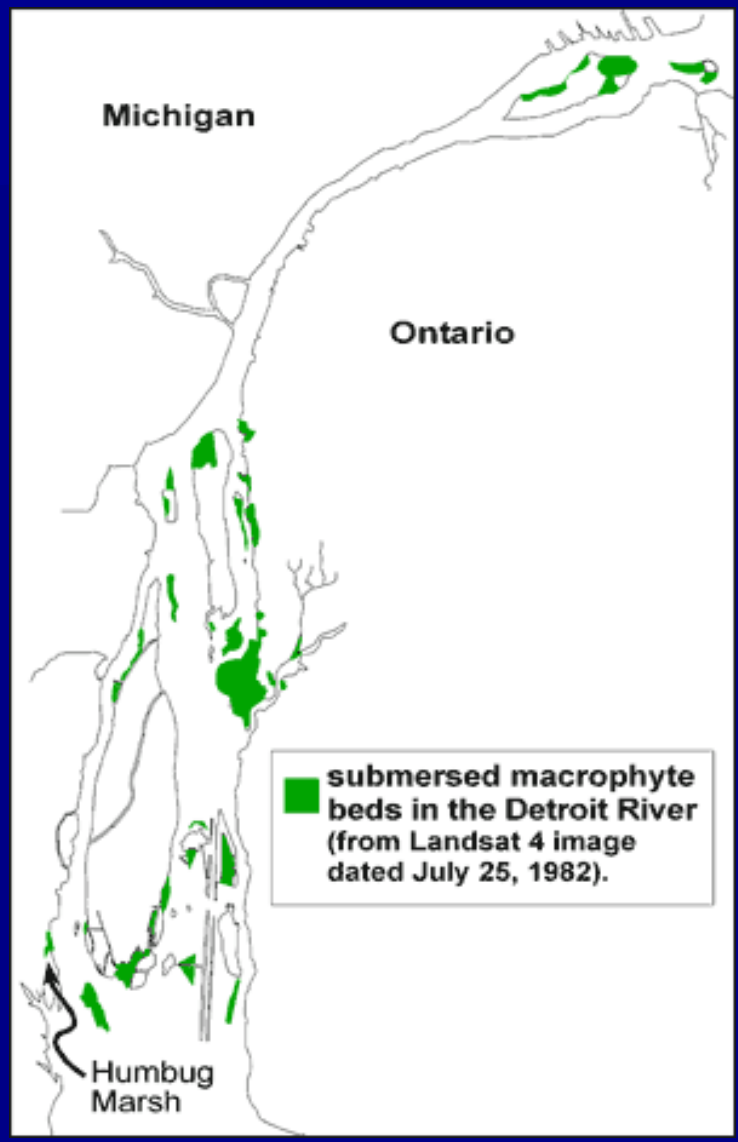
Bruce Manny, USGS

- Significance:
  - "Nurseries of life"
  - Stabilize water table
  - Minimize erosion
  - Filters
  - Recharge groundwater & aquifers
  - Recreational opportunities
  - Aesthetically pleasing

Detroit River Coastal Wetland Distribution



1815 (2,768 hectares)



1982 (25.5 hectares)

Detroit River Coastal Wetlands

- Needs:
  - Community encouragement
  - Volunteer programs
  - Wetland Inventory
  - Soft engineering projects
  - Enforce protection laws
  - Biodiversity & habitat assessment
  - Evaluate economic, social, & ecological benefits

Re-establishment of Suspended/Submersed Aquatic Macrophytes

David Moore, Utica College

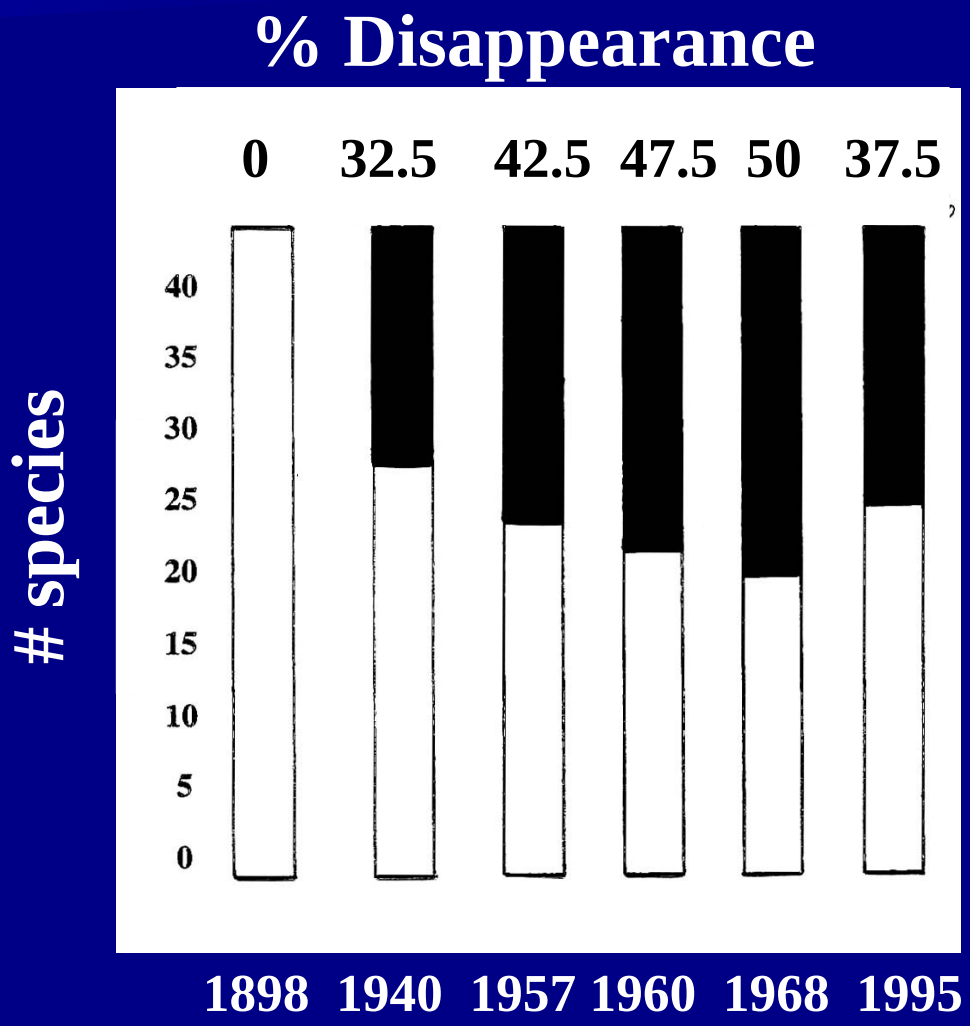
- 1898 - 40 species
- 1967 - 13 species

- 1985 - 6 dominant taxa, 2 occasional
- New tolerant species

Water quality in 1972

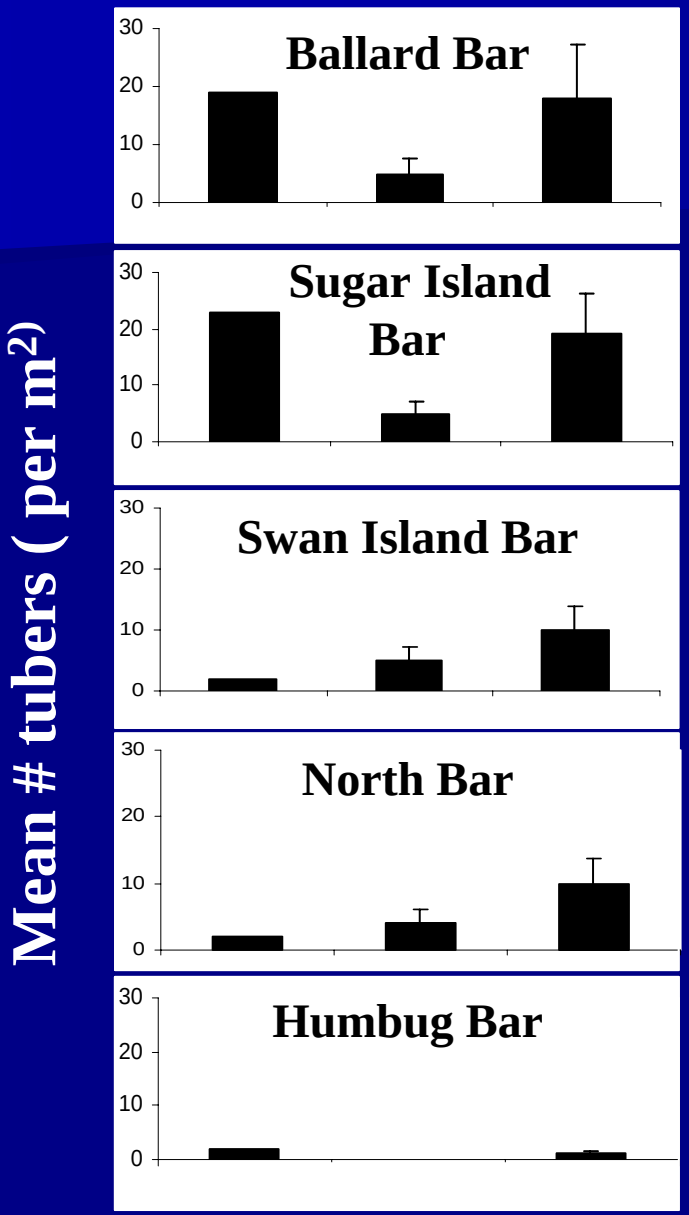
Re-establishment of Suspended/Submersed Aquatic Macrophytes

- Dependent on light availability
- 3 species returned since 1995 - *Potamogeton zosteriformis, Potamogeton illinoiensis, Potamogeton nodosus*
- Recolonization of other taxa expected
- Needs:
  - Study effects of *Cladophora*
  - Monitor invasive species



Recovery of Wild Celery

Don Schloesser & Bruce Manny, USGS



- Food for diving ducks
- Sensitive to pollutants
- Pre-1900s: DR up to a mile wide
- 1950-1985: ↓ (oil pollution)
- 1986: ↑ (zebra mussels)

Recovery of Wild Celery

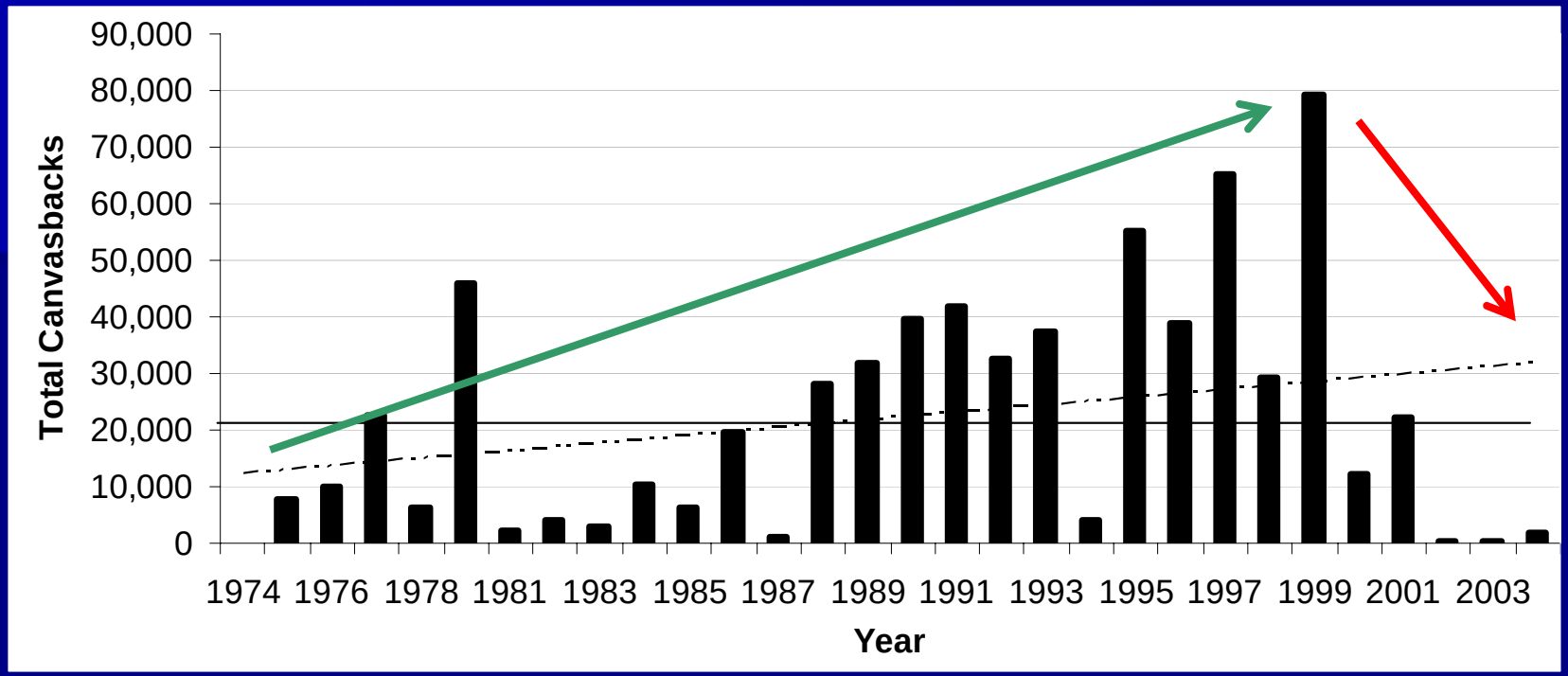
- 1950s – 1980s: net loss of 11,540 Litres = loss of 147,000 waterfowl feeding days
- Needs:
  - Improve, preserve & rehabilitate habitat
  - Monitor and survey

Canvasback Population

Joseph Robison, Michigan DNR

- Need large amounts of food for migration
- Game & table bird
- Pre1970s ↓ due to:
  - droughts,
  - market hunting
  - industrial and sewage discharges
  - development
- 1974: 125 – 1999: 79,300
- ↓ since 1999

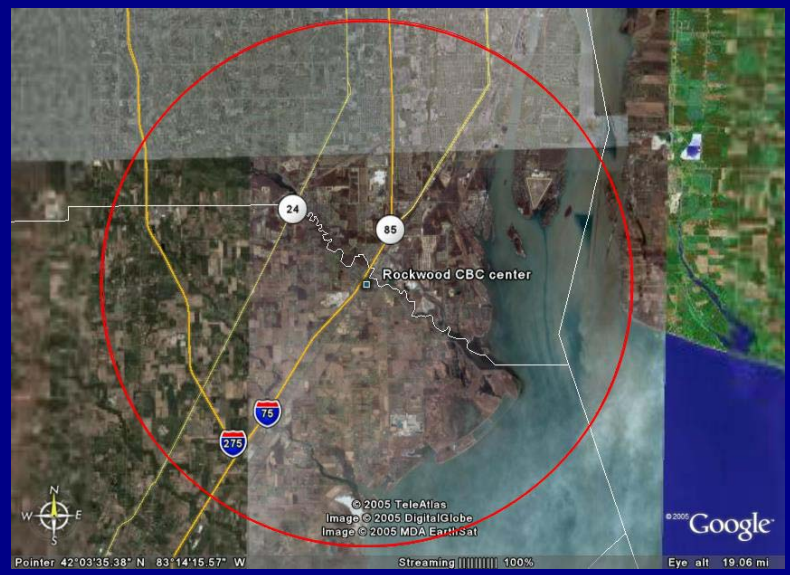
Canvasback Population



- Variable but declining trend since mid 1990s
- Over-wintering delay or population shift?
- Needs:
  - Habitat protection
  - Annual November and May surveys

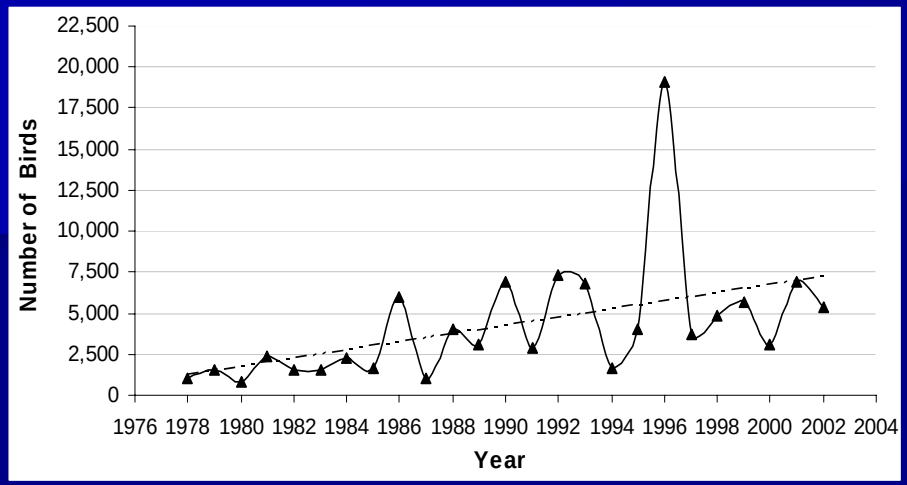
Christmas Bird Count: Detroit River & Rockwood, MI

Julie Craves, RRBO

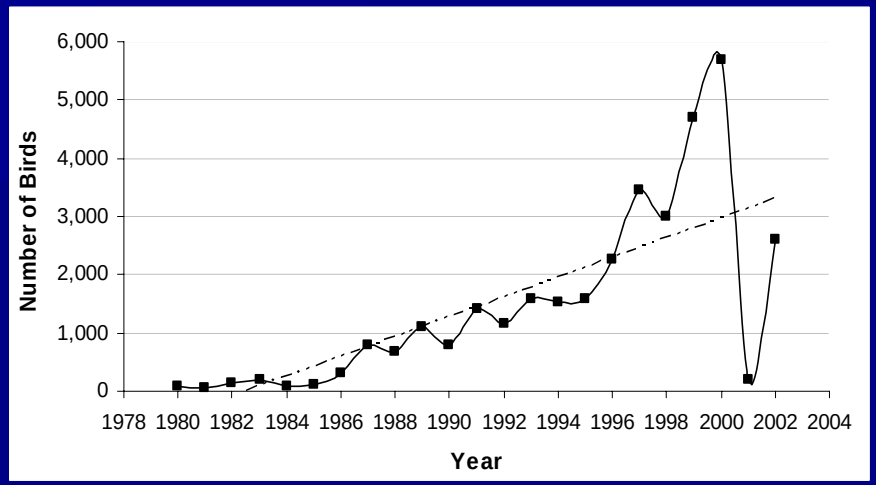


- Started in 1978 (DR CBC), 1974 (Rockwood CBC)
- All birds in 24.1 km diameter circle on a day around Christmas
- “One-day snapshot”

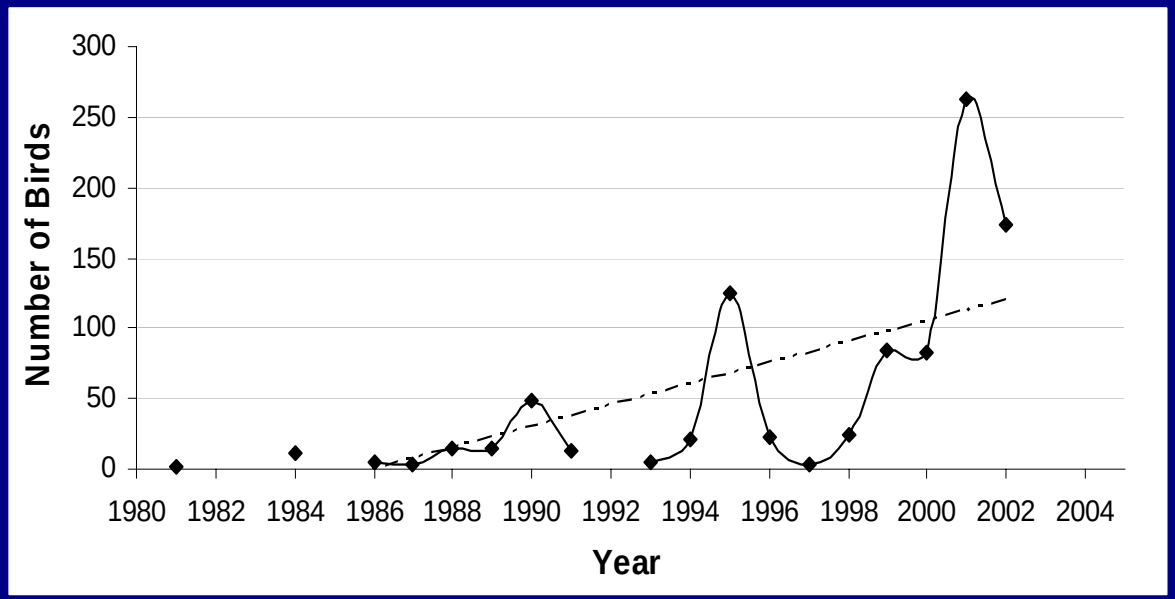
Christmas Bird Count: Detroit River



Canada Goose

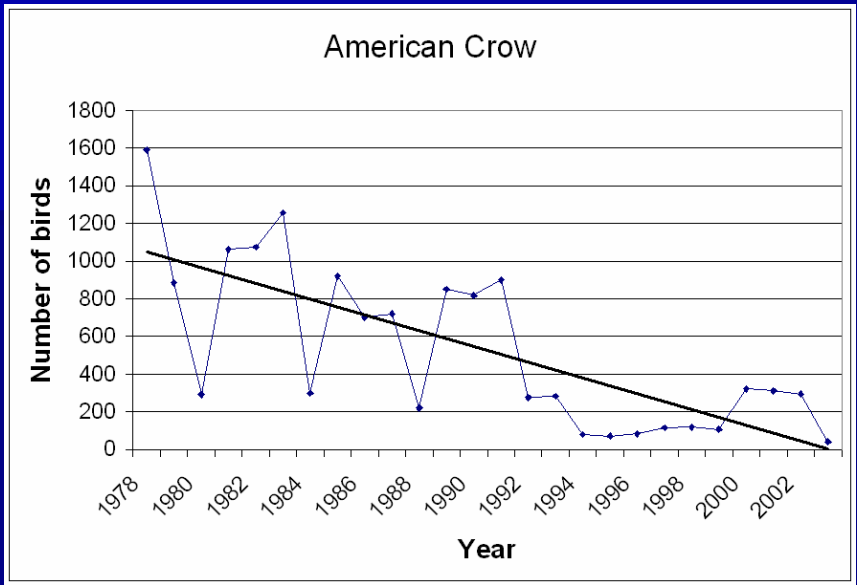


Mute Swan

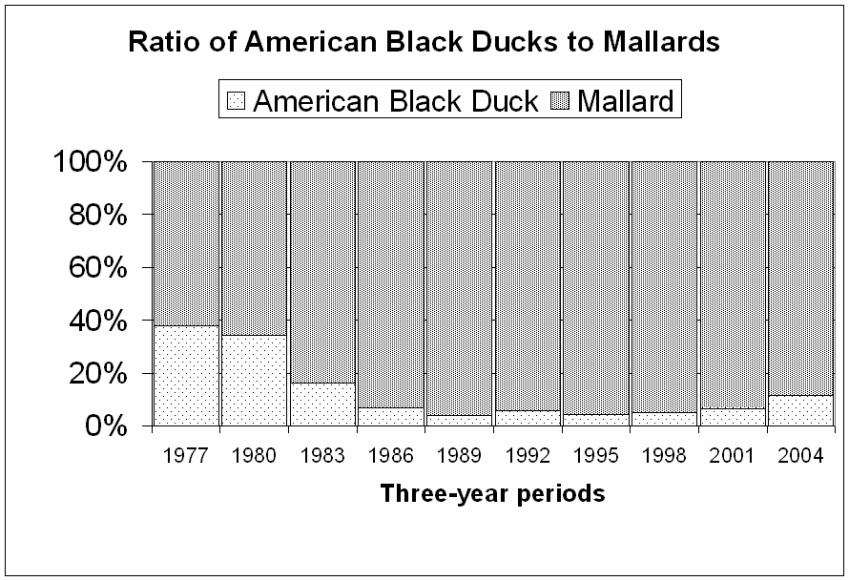


All waterfowl

Christmas Bird Count: Rockwood, MI



- Pop. Size reflects effects of West Nile Virus
- 1975-2001: avg 636
- 2002-2004: avg 35



- ↓ Black ducks, ↑ Mallards
- Mallards - more adaptable
- Ratio ≈ 1:17
- Distinguish hybrids?

Christmas Bird Count: Detroit River and Rockwood, MI

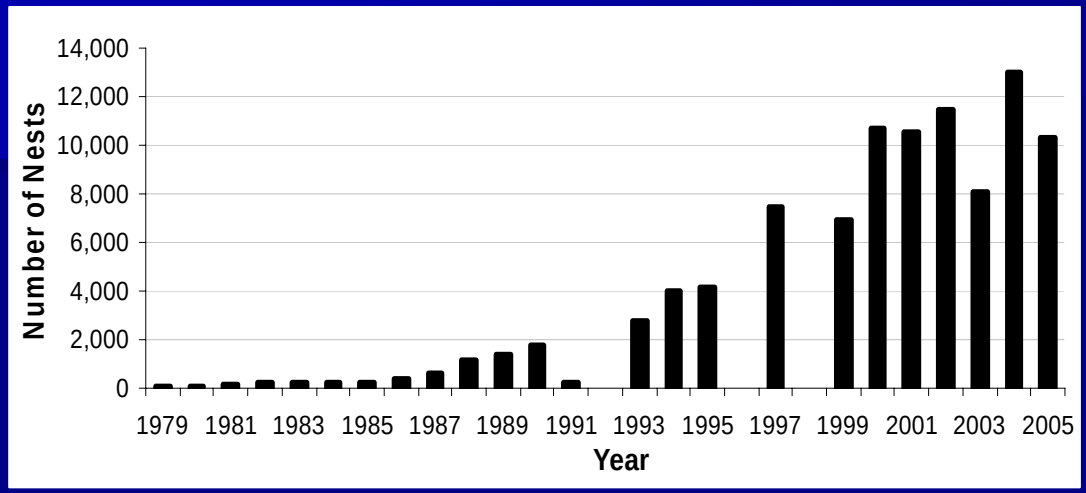
- Needs:
  - Mute Swan monitoring
  - Volunteers
  - Consistency
  - GPS & weather recordings

Double-crested Cormorant

Chip Weseloh, Canadian Wildlife Service

- Sociable; feeds on small fish
- Population ↓ 1955-1970s (DDT)
- ↑ in 80s (DDT ban and reduced human persecution)
- Overabundance now a nuisance:
  - Overconsumption
  - Dominating habitats
  - Degrading fisheries

Double-crested Cormorant



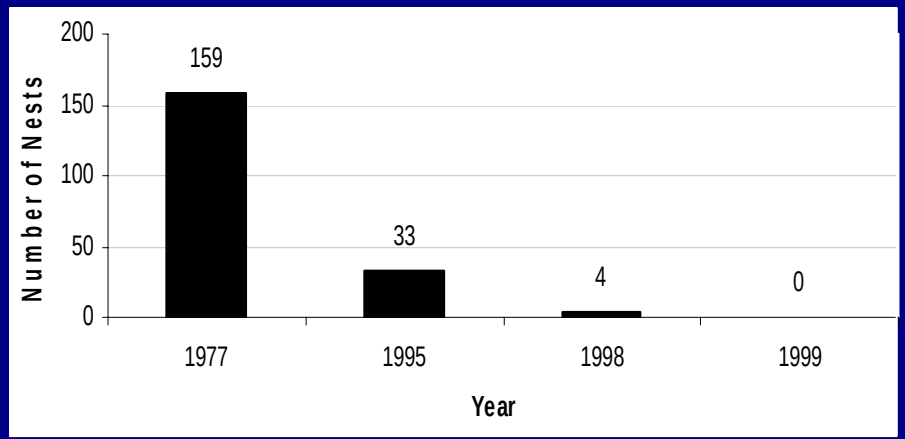
- Nests: 87 (1979) to 12,973 (2004)
- 81% of pop. reside on East Sister & Middle Sister islands

- Predictions:
  - ↓ due to declining food stocks/lethal management
  - ↑ due to abundant round goby supply
- USFWS: goal of 3,800 - 4,800 by 2009
- Needs: additional research!

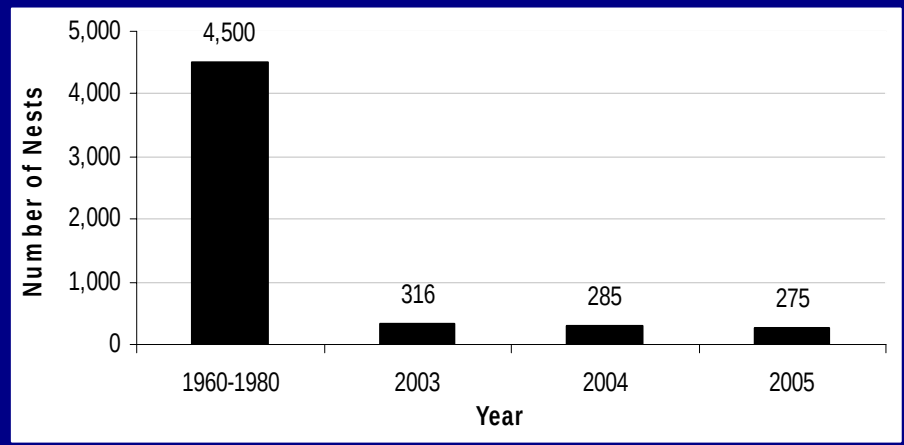
Common Tern Reproduction

Bruce Szczechowski, Stream Team & Jim Bull, Detroit Audubon

- Paradoxically uncommon
- Decline due to:
  - Human development
  - Predation & contaminants
  - Invasive vegetation
  - Ring-billed Gull

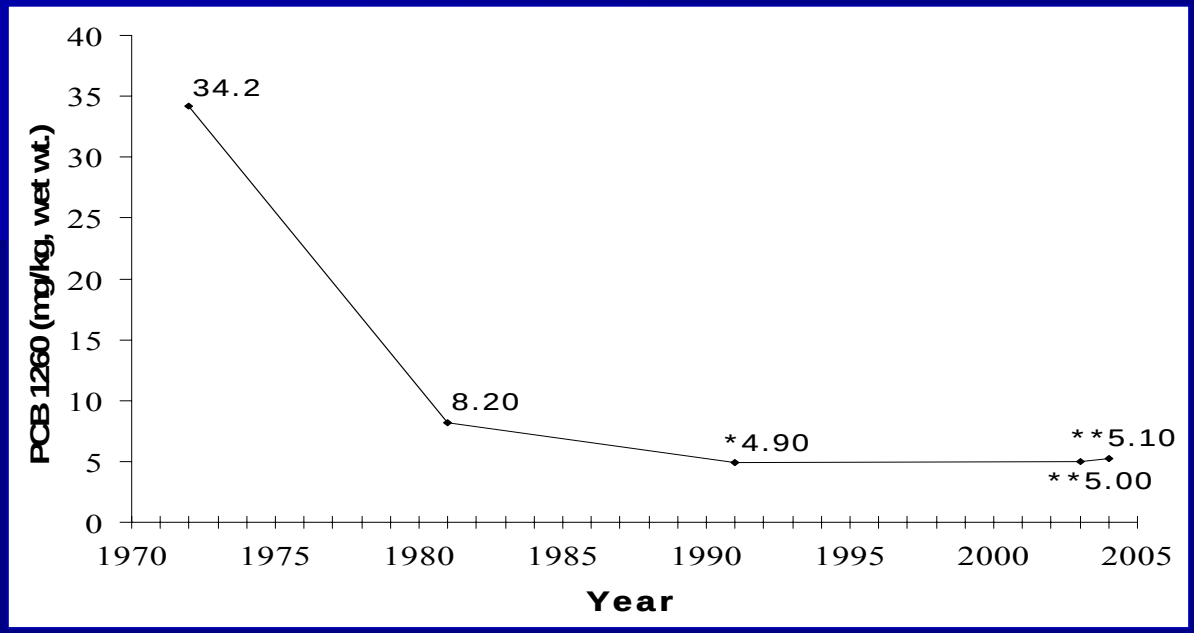


Fighting Island



Detroit River

Common Tern Reproduction



- Needs:
  - Additional breeding sites
  - Re-establishment on Fighting Is., Mud Is. and Belle Isle
  - Research to deter nest predation

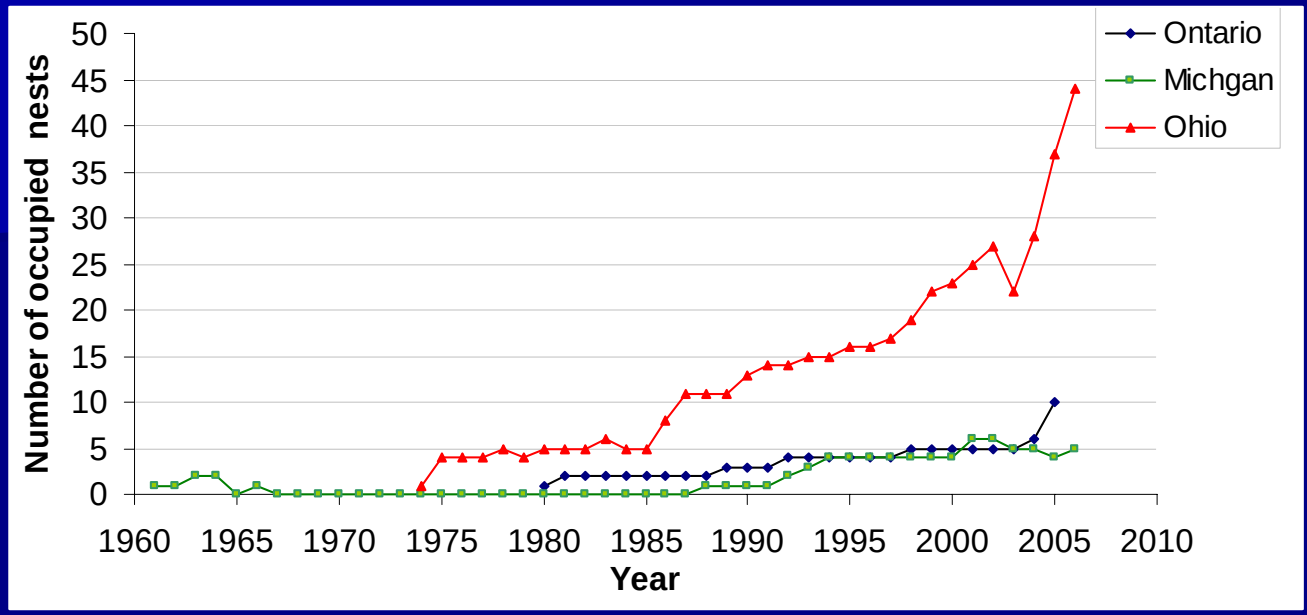
Common Tern Reproduction

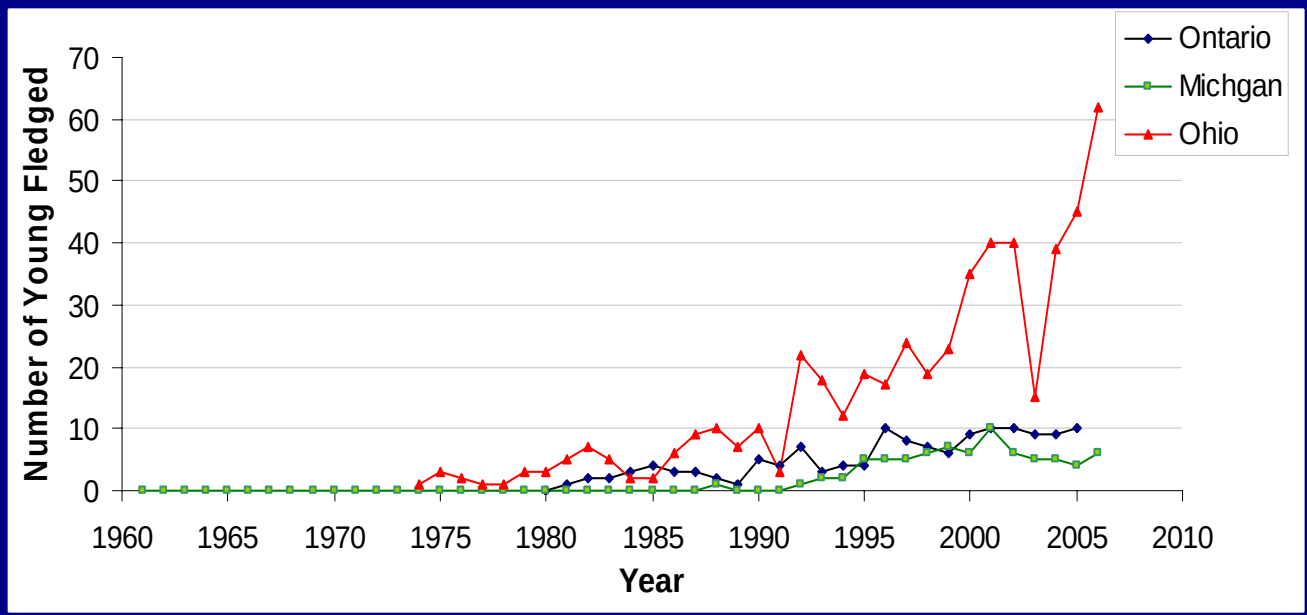
Bald Eagle Reproductive Success

Dave Best, U.S. Fish and Wildlife Service & Debbie Badzinski, BSC

- ↓ in 1950s – 70s (habitat destruction, DDT, PCBs)
- Decimated in 1980s
- ↑ 1981-2005
- Still endangered/ threatened

Bald Eagle Reproductive Success





Bald Eagle Reproductive Success

- Re-colonizing but still vulnerable

- Needs:
  - Banding
  - Blood/feather samples
  - Telemetry
  - Monitor pollution "hot spots"

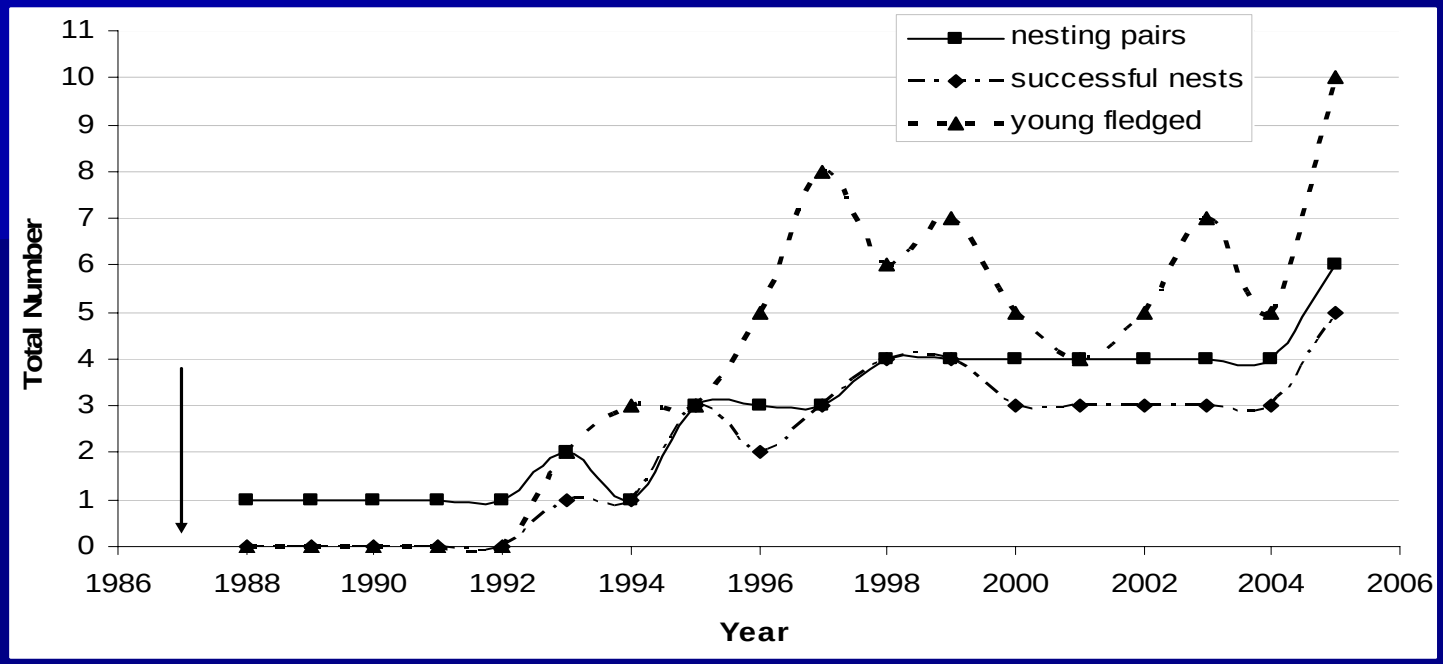
Peregrine Falcon Reproduction

Judith M. Yerkey, Southeastern Michigan Peregrine Consultant & Tim Payne, Michigan DNR

- Globally rare
- Population decimated in 1950s (DDT)
- Listed as endangered in 1970

- 1991: 139 re-introduced in Michigan, over 20 in 2005
- De-listed in 1999

Peregrine Falcon Reproduction



- Number of nesting pairs & sites are increasing
- Goal: at least 10 nesting pairs in DR corridor
- Needs:
  - Habitat protection and contaminant monitoring
  - ↓ disturbance
  - Understand causes of mortality

INDICATOR	GOAL	TREND
IWR Conservation	↑ acreage in conservation	↑ % in conservation
Coastal Wetlands	↑ No. & area	97% loss since 1815
Aquatic Macrophytes	↑ diversity	↑ but colonization is slow
Wild Celery	↑ amount of habitat	↑ overall abundance
Canvasback	↑ population	↓ #s since mid1990s
Xmas Bird Count	↑ waterfowl populations ↓ Mute Swan population	↑ #s of most waterfowl ↑ Mute Swan, ↓ Black Duck
Double-crested Cormorant	↓ population	↑ numbers
Common Tern	↑ nesting population	↓ fledge and hatch success
Bald Eagle	↑ population; remove from endangered/threatened list	↑ population; still endangered/threatened
Peregrine Falcon	↑ nesting pairs	↑ (50% goal reached)

INDICATOR	Protection	Restoration	Monitoring	Research	HIGH PRIORITIES
IWR Conservation	✓	✓	✓	✓	↑ Canadian land
Coastal Wetlands	✓	✓	✓	✓	Conservation/More involvement
Aquatic Macrophytes	✓	✓	✓	✓	*Cladophora* and invasive species
Wild Celery	✓	✓	✓	✓	Survey w/ waterfowl
Canvasback	✓		✓	✓	Improving habitat
Xmas Bird Count	✓		✓	✓	Volunteers, GPS, consistency
Cormorant			✓	✓	Population control
Common Tern	✓		✓	✓	Island re-establishment
Bald Eagle	✓		✓	✓	Banding, sampling, telemetry
Peregrine Falcon	✓			✓	Causes of mortality