

Species vs. Ecosystem Recovery



Bird's-foot Violet



Eastern Hognose Snake

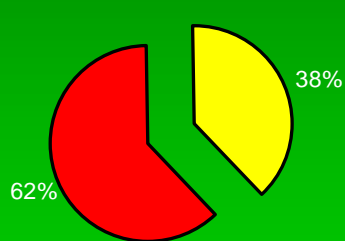


Tallgrass Ontario Forum
September 21, 2005

Donald Kirk
Natural Heritage Ecologist
OMNR, Guelph Dist.

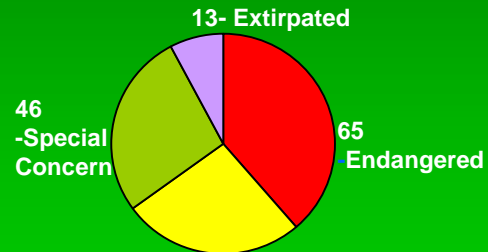
What are we dealing with in Ontario

Number of Species at Risk



■ Ontario ■ Canada

Canada



44-Threatened

Ontario

Species Recovery Efforts in Ontario: An Overview

Progress to date

- 59 recovery teams addressing 88 species
- 46 single species strategies
- 13 multi-species/ecosystem strategies
- 50 SAR species without teams or strategies

Roles and Responsibilities

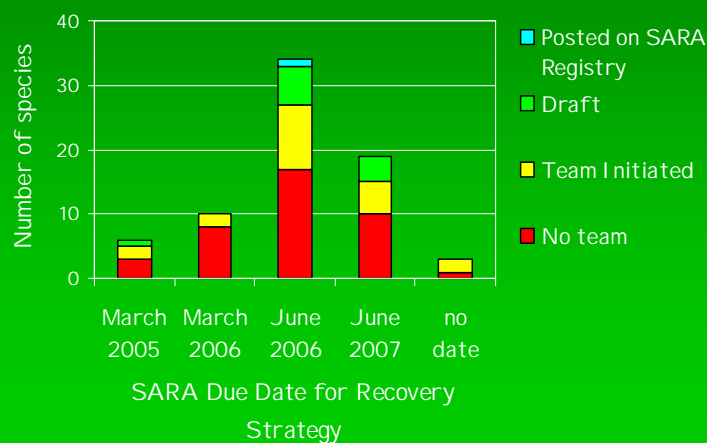
Coordination

- Species at Risk Section (OMNR)
- RENEW Secretariat
- Other federal agencies
- National Recovery Working Group

Recovery Timelines for newly listed species: Legislated

- Federal Species at Risk Act (SARA)-2003
- Time from date of listing in Schedule 1
- (On June 5, 2003) – original list
 - 3 years for endangered
 - 4 years for threatened/extirpated
- (After Act was passed -June 5, 2003) – newly added species
 - 1 year for endangered
 - 2 years for threatened/extirpated

Upcoming SARA Due Dates for Ontario's species



Operational Considerations

- Cost - funding availability
- Availability of appropriate Recovery Team members - species experts
- Status of existing recovery efforts: is there an active team in place?
- Partnership potential - other funding
- Opportunities for ecosystem-based or multi-species recovery planning
- Potential economic or social impacts
- Provincial status/COSSARO Recommendation

Single Species Recovery Strategies

- The most prevalent type of recovery efforts are still focused on single species
- Current RENEW template is design for single species
- Most single species strategies have yet to be reviewed for SARA compliancy
- Each species represented by a Recovery Team however a number of teams are inactive
- In some cases no Recovery Team formed to write a strategy due to low complexity (few sites, on protected lands etc.)
- Few Recovery Strategies have yet to develop a Recovery Action Plan

Cucumber Tree (*Magnolia acuminata*)



- 12 naturally occurring extant populations consisting of 22 subpopulations
- A total of 249 trees and saplings located in two meta-regions (Town of Pelham, Niagara and Norfolk County)
- Only 5 sites with a population of more than 20 trees
- Active management on only one population

Red Mulberry (*Morus rubra*)



- One of first Recovery Strategies developed for a vascular plant species (first draft in 1998)
- Strategy has continuously evolved with new scientific research
- 4 populations with 20 or more trees
- Most populations small and scattered between two meta-regions
- Two distinct and widely divergent habitats – Lake Erie sandspit and Niagara Escarpment talus slope

Spotted Wintergreen (*Chimaphila maculata*)



Monitoring of population at St. Williams

- Only 4 extant populations consisting of 8 sub-populations
- All populations found in similar habitats (oak - pine woodland and savanna) however limited populations in large areas of suitable habitat cannot be explained. Critical habitat difficult to determine

Hoary Mountain Mint (*Pycnanthemum incanum*)



- Two populations consisting of 4 sub-populations
- Prairie bluff habitats being lost to succession despite periodic removal of brush
- Populations extremely localized despite suitable habitat elsewhere

White Wood Aster (*Eurybia divaricata*)



- 15 confirmed extant populations within Niagara Region
- Extensive monitoring work being undertaken by MNR Vineland Area office to determine habitat requirements within Carolinian Woodlands

Fowler's Toad



- Focus of the plan: Conservation, Research, Amelioration and Recovery
- Intensive monitoring along Lake Erie shoreline has lead to better knowledge of critical shoreline habitat and juvenile survivorship and dispersal
- Outreach and education to protect existing beach habitat and increase public awareness

Queen Snake



- Improve biological and ecological knowledge
- Define and determine critical habitat
- Co-ordinate recovery efforts with appropriate multi-species and ecosystem recovery teams
- I.D. and protect remaining Queen Snake populations
- ID. sympatric crayfish habitats

Jefferson's Salamander



- Habitat of species strongly overlaps with areas that are experiencing development pressures (aggregate, housing, roads)
- Monitoring and stewardship implementation

Wood Turtle



Pit-tagging

- Recovery objectives to maintain present range and distribution of Wood Turtles in Ontario and achieve minimum viable population levels through current Ontario range
- Educate all segments of public to improve awareness and understanding
- Strengthen awareness and enforcement to reduce collecting pressure on wild populations

Advantages of single species Recovery Strategies

- Single species strategies afford a greater understanding of species-specific biological requirements
- Single species Recovery Teams can be of a manageable size with key experts
- Intensive population assessment and monitoring can be undertaken for all known sites where it is still extant
- Recovery efforts can be more easily identified and implemented and can focus on key populations for species survival.

Problems experienced with single species recovery efforts

- Extremely lengthy process in developing a Recovery Strategy from draft to final SARA approval (averaging 3 or more years)
- Species seen in isolation of the bigger ecosystem picture and may not address longer term ecological changes
- Extremely time and labour intensive to identify critical habitat for a single species especially if there are many sites with small populations that are widely dispersed.
- Funding opportunities for a single species is often more difficult to secure compared to Ecosystem Recovery Strategies

Problems experienced with single species recovery efforts

- Recovery Teams for a single species are typically small consisting of a limited pool of experts many of whom serve on other teams
- Less opportunity to develop a number of partnerships required for implementation
- Single species recovery teams have a tendency to go dormant after an initial period of activity

Ecosystem Recovery Strategies

- In Ontario there are currently 13 multi-species and ecosystem recovery strategies in progress. Only one has been completed and received final approval by RENEW (Sydenham River)
- A distinction has been made between multi-species and ecosystem recovery efforts however a number of similarities remain:
 - Both deal with multiple species (an ecosystem strategy may nest individual species strategies within the larger strategy)
 - In most cases both types of strategies involves the protection of a rare or unique vegetation community type or ecosystem
 - Both strategies focus on the big picture of identifying ecologically connected systems on a landscape scale

Tallgrass Prairie



- Complete re-write of the 1998 Recovery Plan – “Tallgrass communities of Southern Ontario” prepared by WWF
- New strategy follows the ROMAN template guidelines using example of other ecosystem strategies (e.g. Sydenham River)
- Tallgrass prairie and oak savanna ecosystem strategy covers 137 S1-S3 vascular plant species including 10 Endangered, 3 Threatened and 3 Special Concern (COSEWIC)
- High degree of threat similarity with all prairie and savanna remnants: habitat destruction, natural succession and loss of fire regime and grazing
- Umbrella to many local and regional recovery and stewardship initiative

Carolinian Woodland Plant



Marcy's Woods



Spottiswood Lakes



Skunk's Misery

- Build upon and enhance Carolinian Canada Big Picture
- Identify core areas supporting representative woodland vegetative community types on a eco-district basis within Carolinian region
- I.D. and validate existing hop spots for SAR and S1-S3 species
- I.D. important connections between core areas
- Determine critical habitat for Schedule 1 species
- Prioritize threat and management action
- Co-ordinate recovery activities
- Promote landowner stewardship

Pitcher's Thistle – Lake Huron Dune Grassland



Carter Bay – Manitoulin Island

- Focus on upper Great Lakes sand dune communities
- Inventory of all sites on Georgian Bay and Lake Huron
- Monitoring system for Pitcher's Thistle established
- Communications RIG established – outreach to municipalities and interest groups and landowners
- Recovery Action on three fronts: Communications, Research and Monitoring, Management

Manitoulin Island/Bruce Peninsula Alvars



Lakeside Daisy

- One of three Alvar Recovery initiatives – the others being the Carden Plain and the Napanee Plain
- Signature species includes a number of SAR species with similar habitat requirements in a globally rare community type
- Focus of Recovery Strategy is Houghton's Goldenrod, Gattinger's Agalinis and Lakeside Daisy (Hill's Thistle and Dwarf Lake Iris are dealt with as appendices)
- Team has proposed to form three RIGs to implement strategy
- Monitoring underway on three target species

Sydenham River



Wavy-rayed Lampmussel

- Greatest diversity of freshwater mussels in Canada
- 14 COSEWIC species of fish, mussels and turtles
- Sediment and nutrient loading and exotic species are common threats
- Several watershed stewardship initiatives underway

Ausable River



Black Redhorse Photo: R.O.M.

- Covers 14 COSEWIC listed species which includes four freshwater mussels, seven fishes, three reptiles (e.g. Wavy-rayed Lampmussel, Eastern Sand Darter, Black Redhorse, Queen Snake, Eastern Spiny Softshell Turtle)
- Primary threats to all SAR are sediment loadings and nutrient enrichment plus channel alterations, toxic contaminants and exotic species

Multi-species Recovery Efforts

Multi-species Turtle Recovery



- Wood Turtle RS would still stand on its own
- First meeting – Sept. 2005 Recovery Strategy in progress. Final edits anticipated by Mar. 2006 in anticipation of SARA deadline of Jan 2007
- 6 SAR species (Map, Spotted, Stinkpot, Blanding's, Eastern Spiny Softshell, Wood)
- Addressing common threats (22 identified) – e.g. habitat loss, fragmentation and degradation, nest predation, traffic mortality, legal harvest (through collecting for the pet trade)

Allegheny Mountain Dusky Salamander/ Northern Dusky Salamander



- Early stages
- A multi-species approach however it will not be an ecosystem strategy
- Both species have similar habitats and threats and occur in same geographic area (Niagara Gorge)
- Could developed into a larger Niagara Gorge Recovery initiative

Advantages of ecosystem Recovery Strategies

- Suites of species with similar habitat requirements can be covered under one strategy which in turn is more cost effective
- Identification of common threats to all species addressed in a recovery strategy
- Ecosystem strategies can help address tight SARA timelines mandating the completion of recovery plans for a large number of Schedule 1 species
- Greater funding opportunities are possible with a larger number of partners than can be obtained by single species recovery

Advantages of ecosystem Recovery Strategies

- Efficiencies in getting more experts around the table as opposed to have each expert to serve on multiple teams
- Stronger voice to advocate the protection of a particular ecosystem to planning agencies (e.g. municipalities, Conservation Authorities)
- Potential to work with other species and ecosystem recovery strategies in the U.S. especially as it pertains to Great Lakes ecosystems

Arguments against ecosystem approach to Recovery Strategies

- Clark and Harvey (2002) argue against multi-species recovery plans (which they liken to ecosystem)
- Ecosystem approach increases complexity of recovery strategies and may be more difficult and expensive to implement
- Less attention to paid individual species making them “poorer blueprints for recovery”
- Authors found that multi-species plans in their study sample showed a low level of threat similarity between target species
- The use of ecosystem and multi-species plans may more often be driven by time and fiscal pressures, i.e. expedite recovery plans for many species to meet SARA deadlines
- Problem: Currently the ROMAN recovery strategy template is primarily focused on single species and does not have an ecosystem recovery component

Points to Consider

- Grouping species by threat similarity may be one of the most important ways of achieving success of a implementing an ecosystem or multi-species recovery strategy
- Communications is important especially on ecosystem strategies as you need participation of numerous interest groups including landowners
- Ecosystem recovery strategies require long term sustained funding leading to recovery implementation
- Implementation of ecosystem strategies may be most feasible at an individual agency or a local geographic level
- Single species recovery still effective for species of limited distribution and small populations

Conclusions



Karner Blue Butterfly



American Ginseng

Photo by: Kara Vlasman

We do not have enough experience nor a sufficient track record of implementation to adequately assess whether ecosystem recovery strategies achieve their objectives

SARA timelines and large backlog of Schedule 1 species requiring recovery strategies may continue to force the adoption of ecosystem recovery strategies over the single species approach

Questions ?

