NEAFWA April 2014

Assessing priority amphibian and reptile conservation areas (PARCAs) in the North Atlantic Landscape Conservation Cooperative

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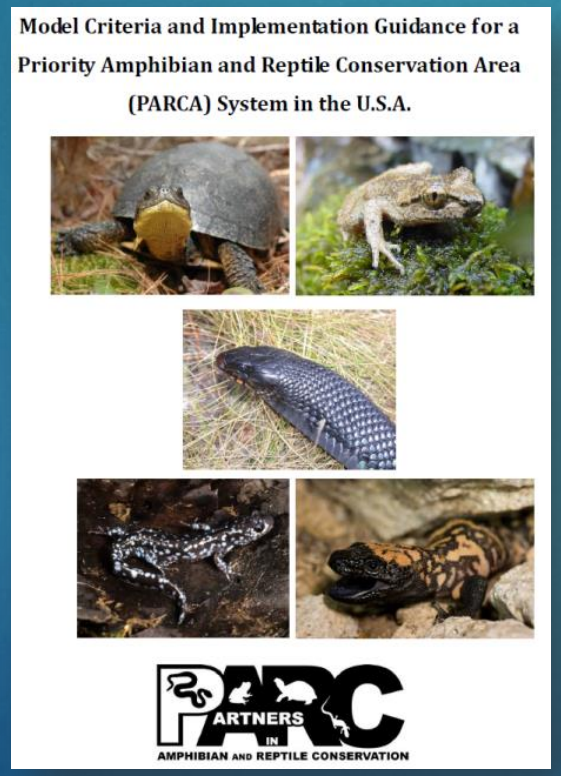
Reptile & amphibian conservation

- habitat loss and fragmentation
- US has
  - great diversity of salamanders and turtles
  - high abundance of conservation biologists
  - high abundance of $$$
- herps may not be covered by generalist taxa

Objectives

- best areas for herp conservation
- which species?
- where?

WORKSHOP
3:20-5:00
Somerset Room



state occurrence records

NE herp database

- 12 states
- over 35,000 occurrence records since 1990

THANK YOU!!!

Priority species

- globally/nationally vulnerable
  - US ESA – CR or EN
  - IUCN – CR or EN
  - NatureServe – G1, G2, or G3
- state imperiled
  - E or T
  - NatureServe S1 or S2
- state rare or of high regional responsibility
  - SC or VU
  - SGCN

state occurrence records

NE herp database

Program Maxent

modeled distributions

expert knowledge

biotic & abiotic variables

Expert survey

- Does this variable affect species' distribution?
- 3 herpetologists
- 39 variables
- 83 species

Wood turtle

- n = 163
- AUC = 0.730

- variables included:
  - streams
  - rivers
  - wetlands
  - stream gradient
  - flow accumulation
  - landcover
  - canopy cover

state occurrence records

NE herp database

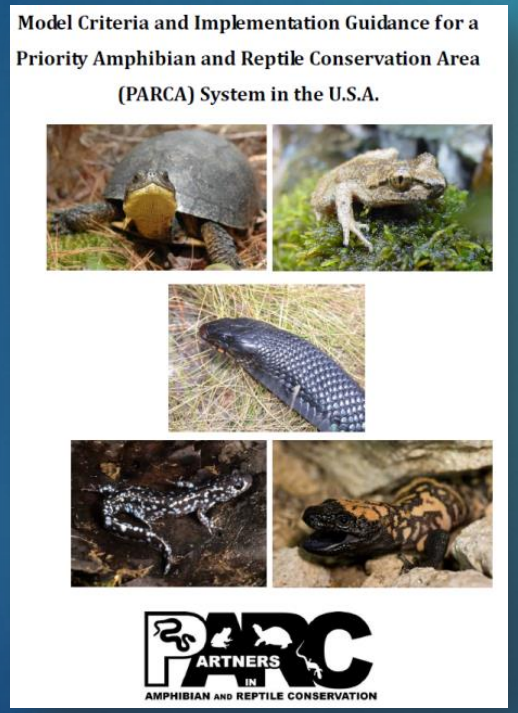
Program Maxent modeled distributions

expert knowledge

biotic & abiotic variables

suitable habitat

PARCAs



Pilot conservation areas

- based on distribution models
- surfaces (S) normalized to between 0 and 1
- where S > 0.75

$$S_{st} + S_{wt} + S_{bt} + (\Sigma S_p / n_p) = S_{PARCA}$$

Currently conserved

- How well do currently conserved areas correspond to pilot areas?
- only 18% of proposed areas are currently conserved

state occurrence records

NE herp database

Program Maxent modeled distributions

expert knowledge

biotic & abiotic variables

species richness

suitable habitat

PARCAs

landscape integrity

expert review

patch size

landcover

fragmentation

Future directions

- expand study region
- integrate species richness
- finalize model selection criteria
- expert review of draft PARCAs
- climate change resiliency with Barrett and Sutton

Photos: J. Mays, P. deMaynadier, L. Kenney, C. Bevier

North Atlantic Landscape Conservation Cooperative

ASSOCIATION of FISH & WILDLIFE AGENCIES

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