

# Next Steps

## Future Research, Monitoring, and Conservation Actions for Cerulean Warblers (*Dendroica cerulea*)



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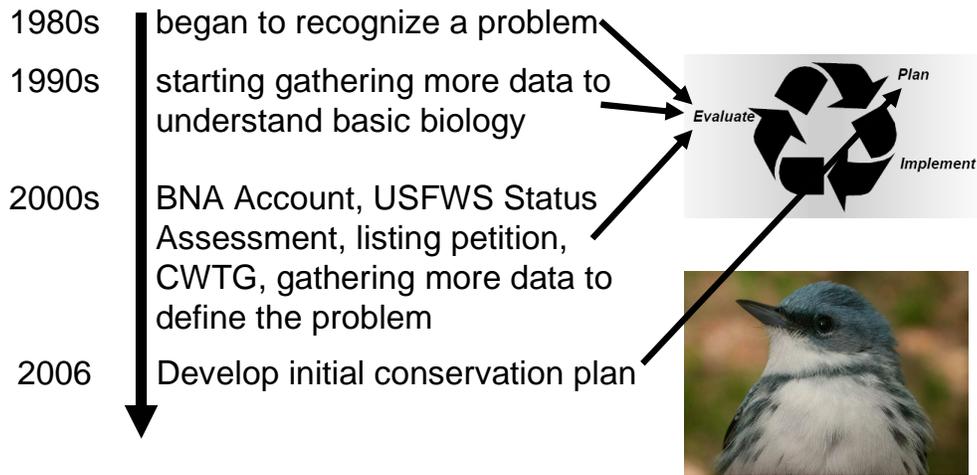
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# Cerulean Warblers and Adaptive Management

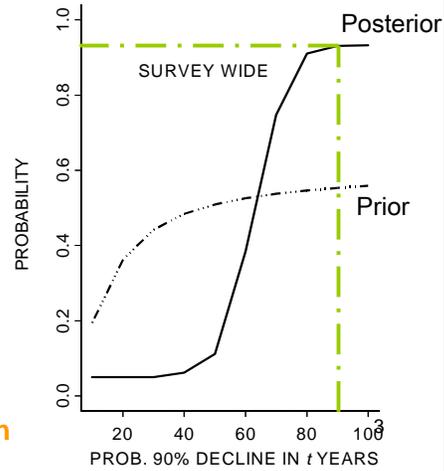
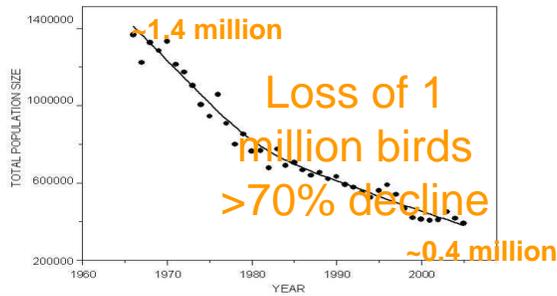
## *Where are we now?*



# Developing an Action Plan for Cerulean Warbler Conservation

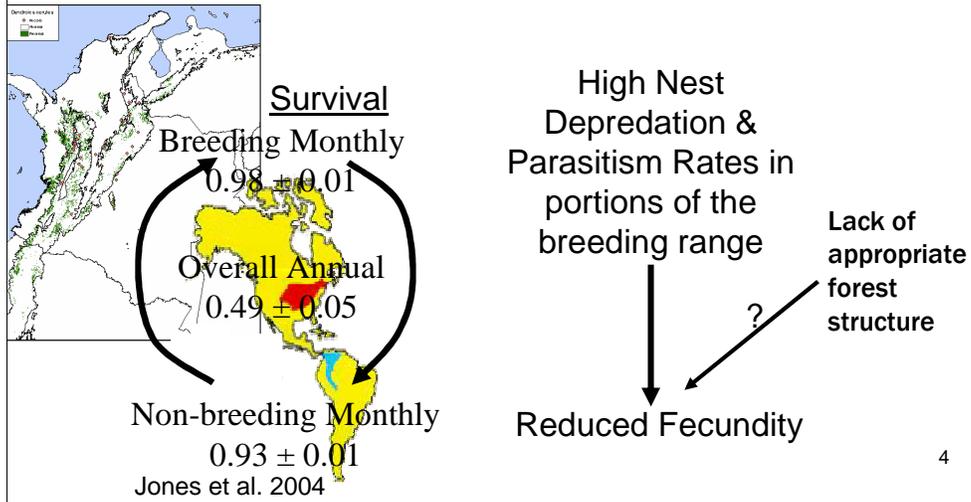
## *Evaluate the Situation*

Cerulean Warblers  
have experienced a  
long, steady decline;  
outlook is not good if  
trends don't change



# Developing an Action Plan for Cerulean Warbler Conservation

## *Identify Threats/Limiting Factors*



## Developing an Action Plan for Cerulean Warbler Conservation

### *Identify Actions to Address Threats/Limiting Factors*

- 1. Protect and Improve Non-breeding Habitat in South America**
- 2. Improve and Protect Breeding Habitat**
- 3. Identify and Protect Migration Habitat in Central American and southern U.S.**
- 4. Reduce Critical Information Gaps**
- 5. Assess Potential Impacts of Non-habitat Threats**

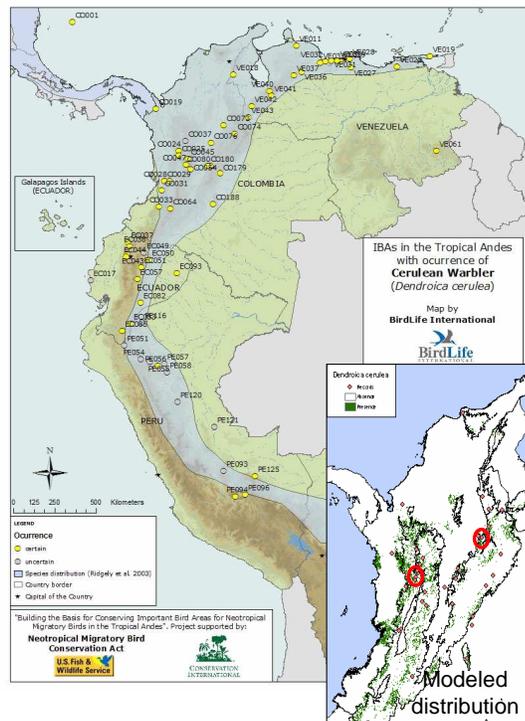
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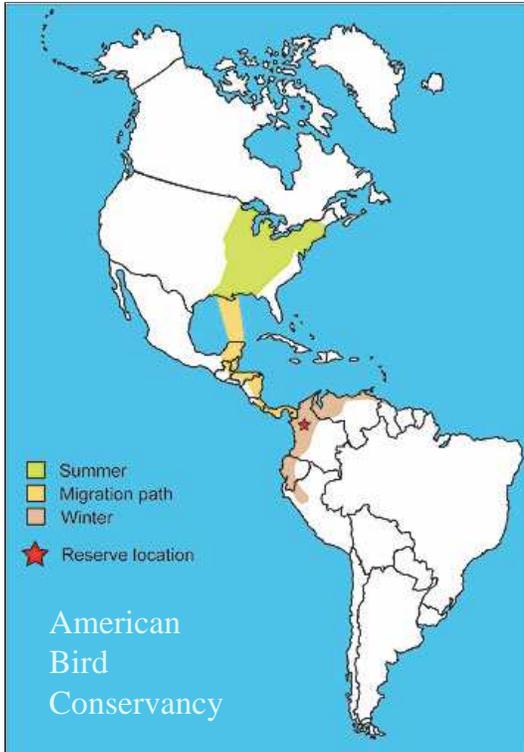
**Protect and improve  
habitat in South America**

**Define current  
range and identify  
important areas  
for Cerulean  
Warblers**

Partners: *El Grupo Cerúleo*,  
NGOs, govt, universities, &  
others

Outcome: Improved  
knowledge for better habitat  
conservation





***Protect and improve  
habitat in South America***

**Protect forests  
where Cerulean  
Warblers are  
abundant.**

Partners: NGOs and govt

Outcome: Improved  
condition and survival in  
non-breeding season.

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*Protect and improve  
habitat in South America*

## Study Cerulean Warbler ecology in South America

Partners: *El Grupo Cerúleo*

Outcome: Improved  
knowledge for better  
conservation

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*Improve and protect  
habitat in North America*

## **Develop and Implement Forest Management Prescriptions**

Partners: CWTG – Research  
Group & Conservation Group  
(including industry and  
private landowners)

Outcome: increased breeding  
productivity

*Develop and implement forest management for Cerulean Warblers*



**Understand  
demographic  
responses to  
silvicultural treatments**



*Example: Cooperative  
Cerulean Warbler Forestry  
Experiment*

*Develop and implement forest management for Cerulean Warblers*

- Collaborate with diverse stakeholders to identify best management practices
- Promote management cooperatives among multiple stakeholder groups



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*Develop and implement forest management for Cerulean Warblers*

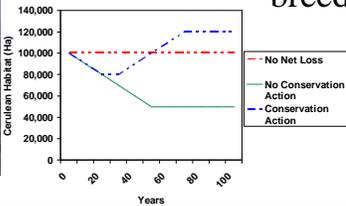
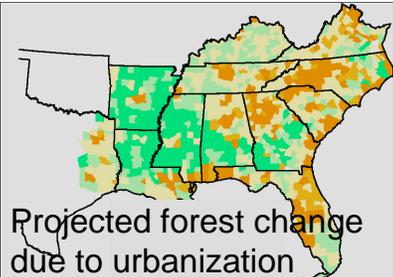
## Develop private-land management initiatives

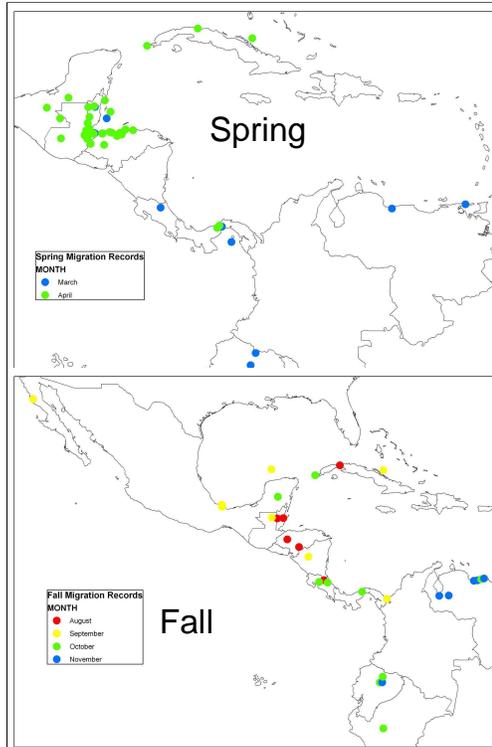


*Improve and protect habitat in North America*

**Reduce forest fragmentation and prevent permanent forest loss**

Outcome: increased breeding productivity





**Identify and protect migration habitat**

- Map migratory path way
- Model migration habitat
- Develop programs to conserve migratory habitat

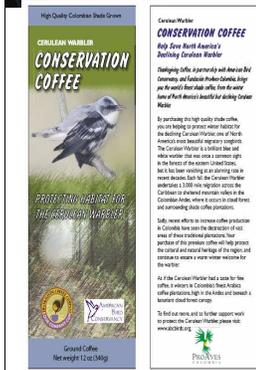
Partners: NGOs, Govt

Outcome: increased survival during migration



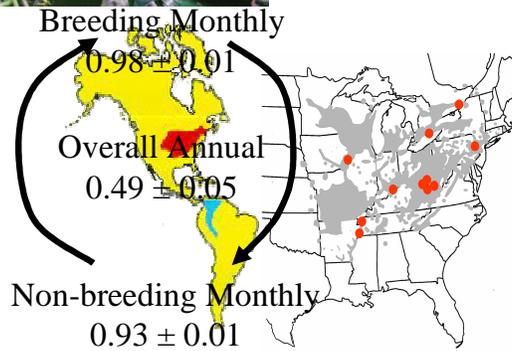
**Protecting habitat – the human connection**

**Build awareness of migratory bird issues through education programs**



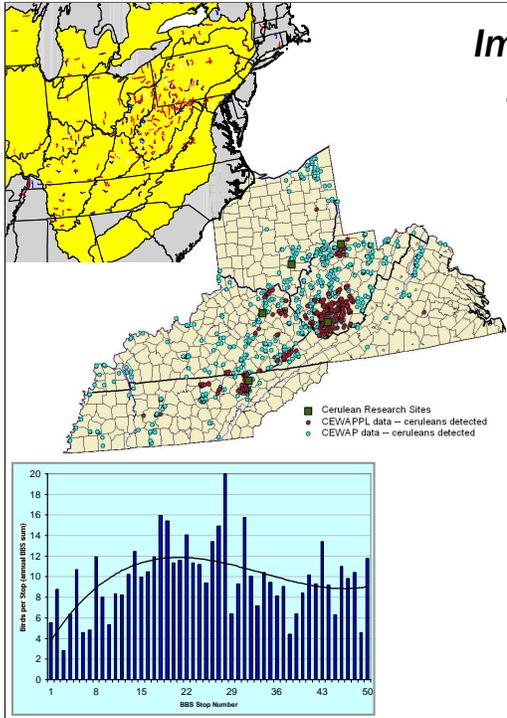
Partners: NGOs, others

Outcome: increased public support for bird conservation



**Reduce knowledge gaps**

- Knowledge about females & juveniles
- Intrinsic limits to fecundity
- Greatest limiting factors
- How demographics vary across range and seasons



**Improve monitoring for trends and population estimation**

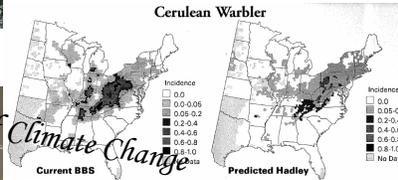
- Run BBS routes regularly
- Build monitoring capacity on private lands and off-road
- Evaluate parameters for PIF pop. estimates
- Establish population goal through CWTG

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Time of day correction = 1.38



## Assess impacts of non-habitat threats



Partners: CWTG –  
Research Group

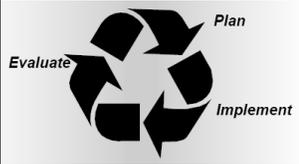
Outcome: increased  
knowledge for better  
conservation <sup>18</sup>

## 6. Collaboration and Communication

- Success will need collaboration and coordination among a large international multi-stakeholder partnership
- Communication among partners is critical for effective and efficient implementation
  - Draft conservation action plan available for review
  - Website established for *El Grupo Cerúleo*:  
<http://www.srs.fs.usda.gov/egc>
  - Developing a Cerulean Warbler Action Plan website
  - [Cerulean Summit 2: 13-15 February 2007, Morgantown, WV](#)

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# Cerulean Warblers and Adaptive Management



## Where do we need to go?

- 1980s began to recognize a problem
- 1990s starting gathering more data to understand basic biology
- 2000s BNA Account, FWS Status Assessment, CWTG
- 2006 Develop initial conservation plan
- Future** Implement plan – protect and manage habitat, continue research – monitor response to actions

- CWTG has shown the promise of multi-stakeholder initiative
- Needs partnership to continue and grow for further success

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# Acknowledgements

Cerulean Warbler Technical Group

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You are invited!

**CERULEAN SUMMIT 2**  
**13-15 February 2007**  
**Morgantown, West Virginia**



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