

NJ Statewide Habitat Connectivity Initiative



Spotted Salamander Crossing Road in Northern NJ



Wildlife Habitat Connectivity Initiative

A strategic plan to reconnect New Jersey's landscape by prioritizing and guiding:

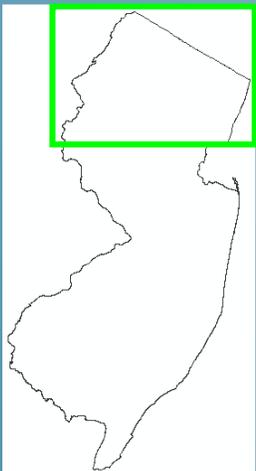
- *Land protection*
- *Habitat restoration and management*
- *Mitigation of road impacts*



Animals Need to Move to Survive

Bobcat Movements

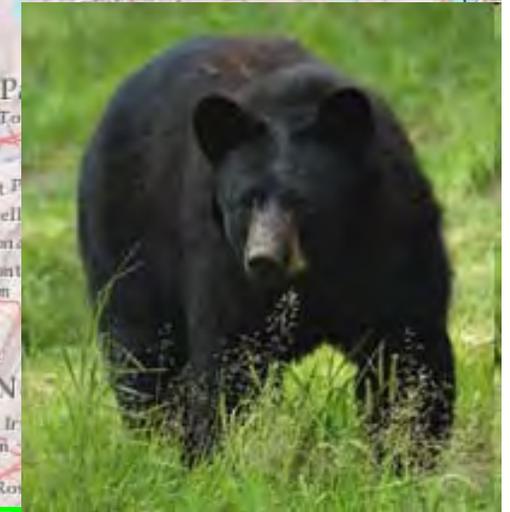
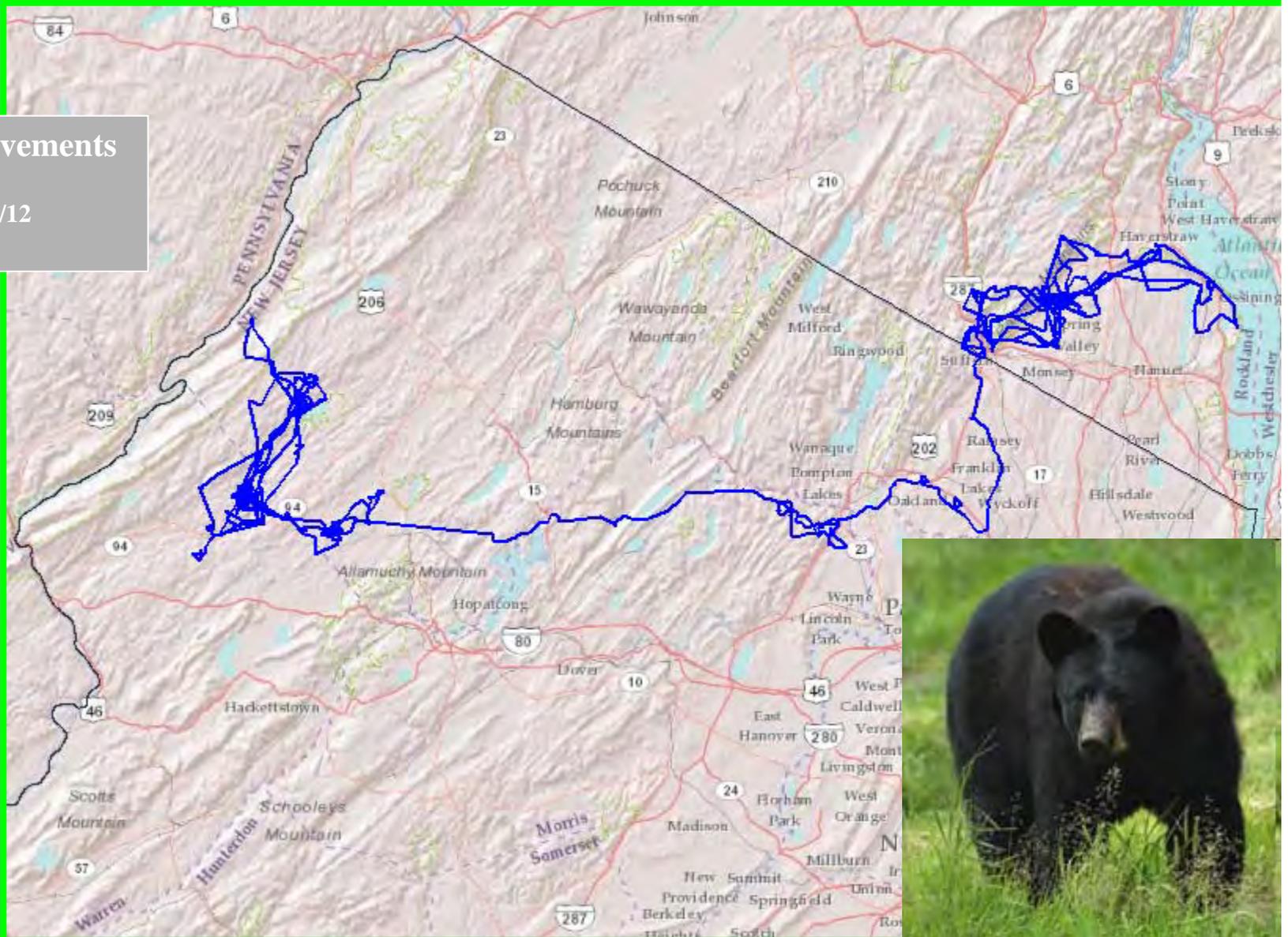
- Male 3/04 – 7/05
- Female 2/09 – 1/10
- Male 3/05 – 10/05



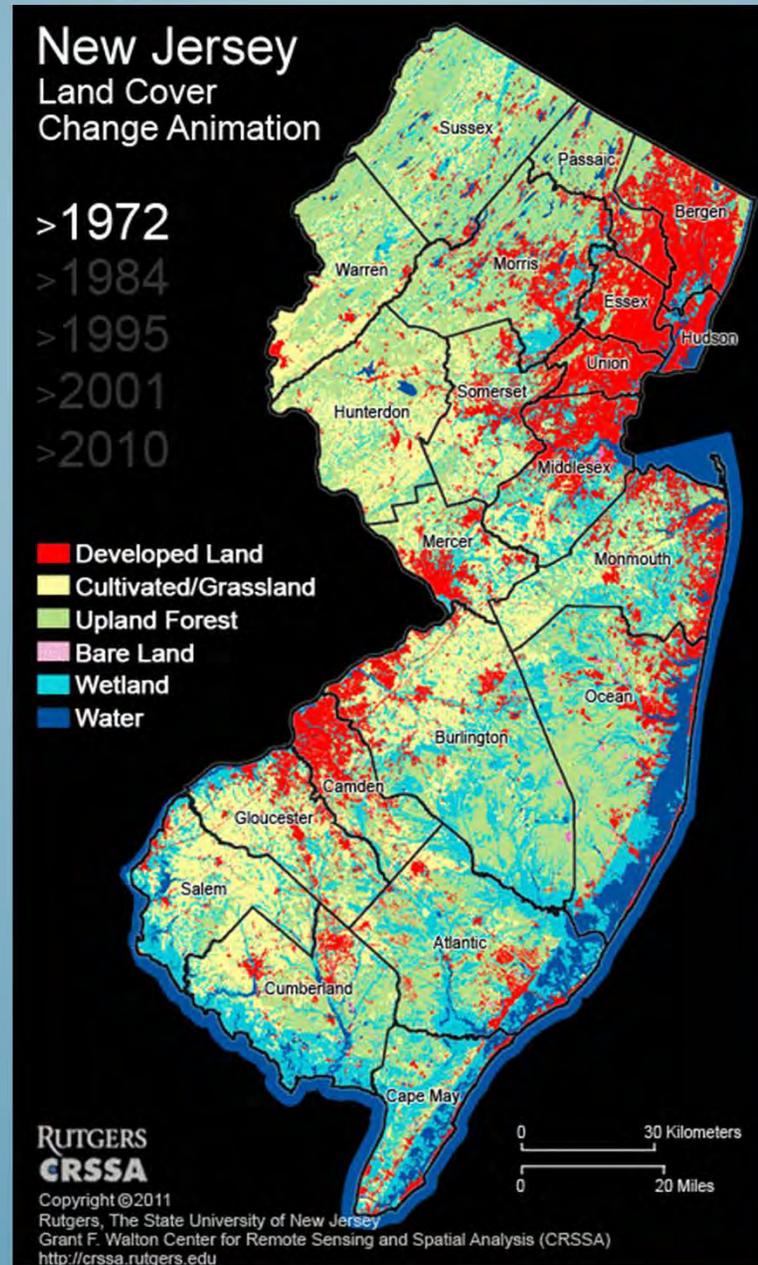
Animals Need to Move to Survive

Black Bear Movements

Male 7/11 – 2/12



A Fragmented Landscape

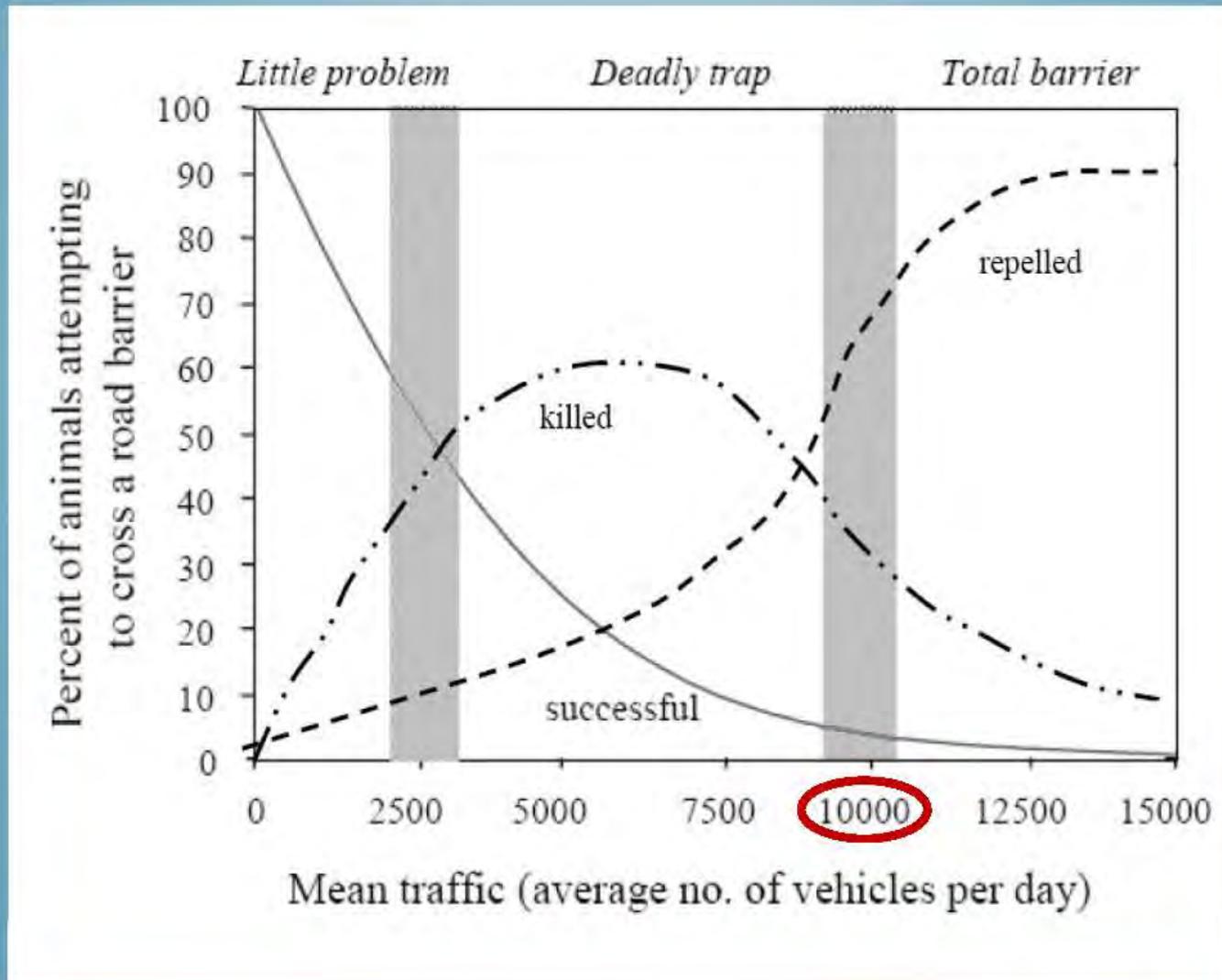


NJ Roads



 >10,000 vehicles/day

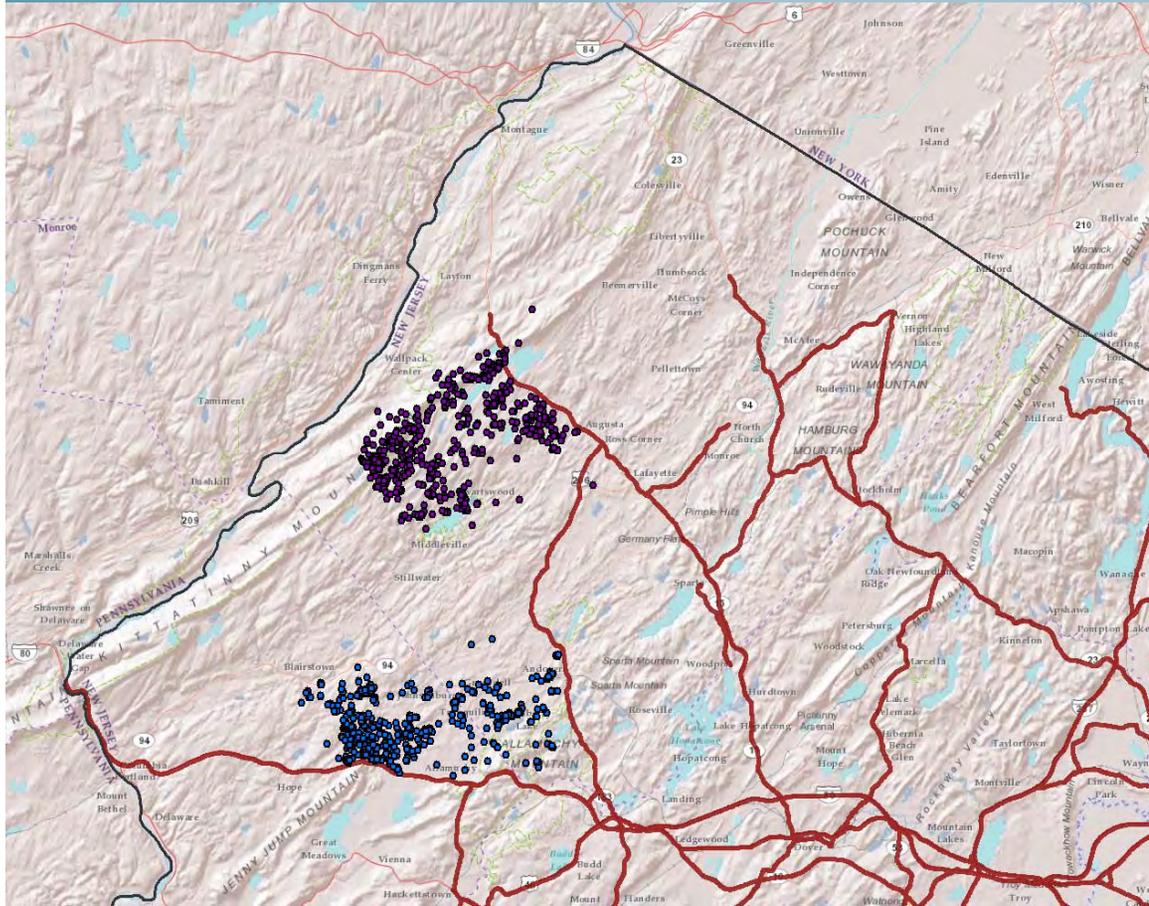
Impacts of Roads



(from Seiler 2003)

Impacts of Roads

Movement Barrier



© Keith R. Frerichs

-  >10,000 vehicles/day
-  Female 2/09 – 2/10
-  Male 3/10 – 3/11

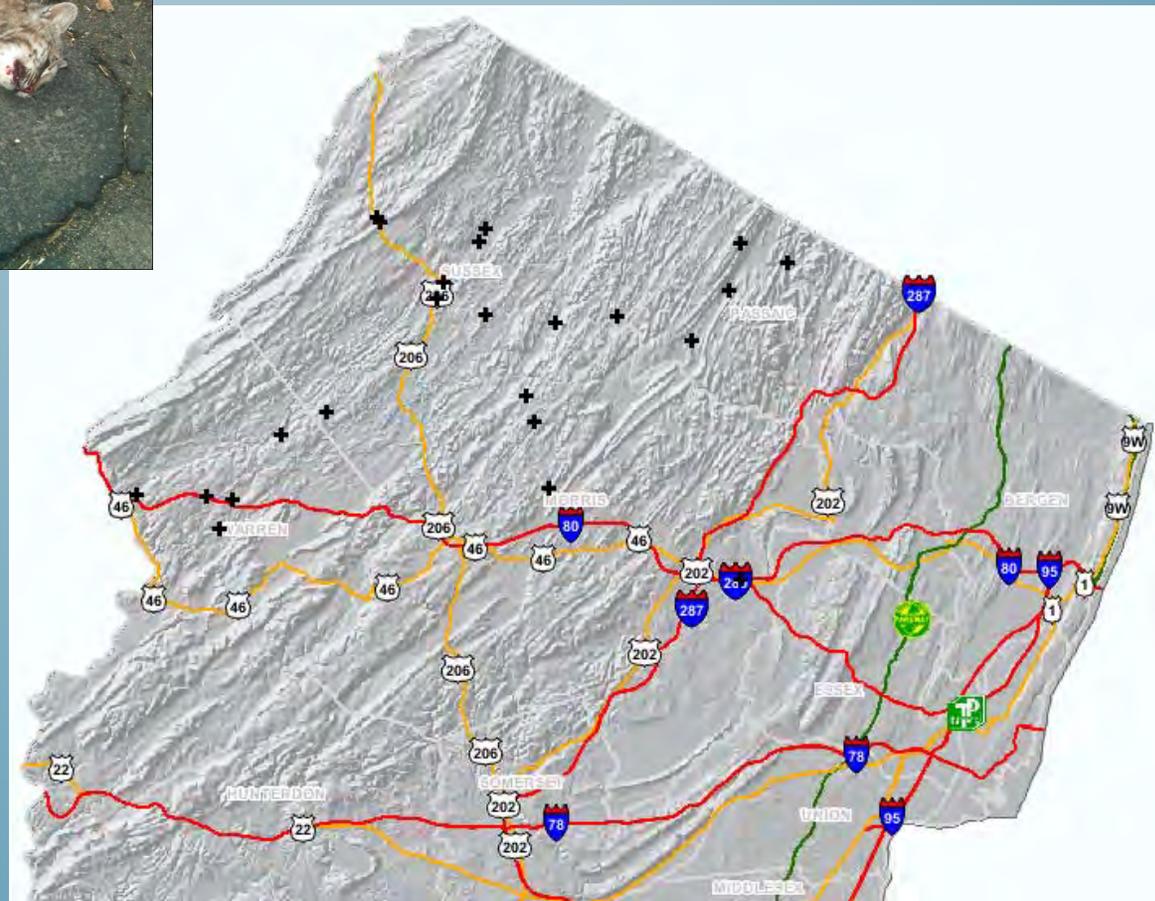
Impacts of Roads

Direct Mortality



Bobcat (E)

- N = 24
- 2008-2011



Impacts of Roads

Driver Safety / Property Damage



Express-Times File Photo



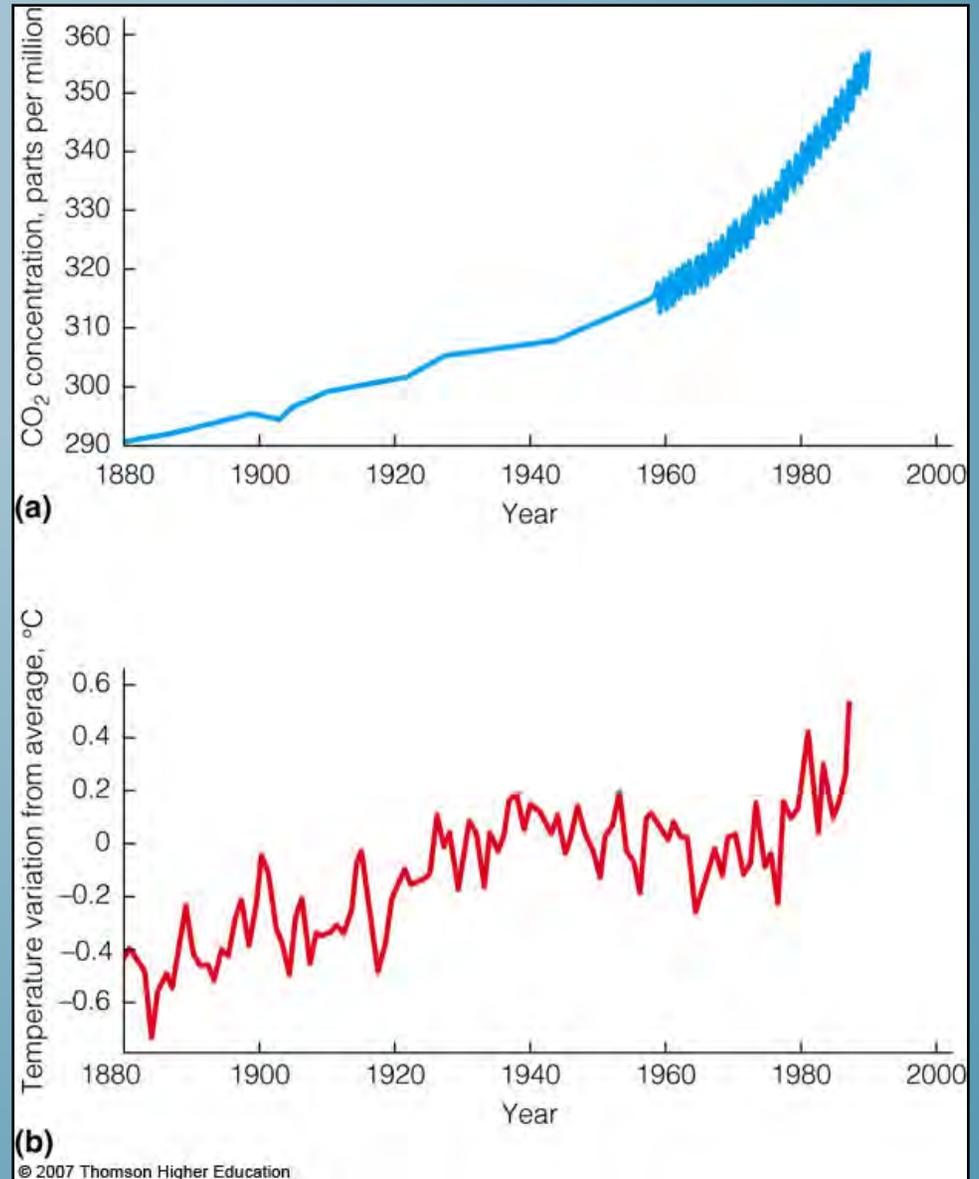
Bobcat kittens on the road in northern NJ – August 2011



http://www.youtube.com/watch?feature=player_embedded&v=k-Fp7fIAWMA#!

Habitat Loss and Fragmentation

- Steady urbanization
- Dense road network
- Climate change



Habitat Connectivity Planning – Other States



Western Governor’s Association: call for Western states to “identify key wildlife migration corridors and crucial wildlife habitats in the West and make recommendations on needed policy options and tools for preserving those landscapes”

Statewide Habitat Connectivity Plan

Goal: A strategic plan promoting the long-term viability of terrestrial wildlife populations in New Jersey through a science-based, collaborative approach. The plan consists of two tools that identify and recommend opportunities and priorities to conserve and restore habitat connectivity.

Products:

1. Connectivity Map
2. Connectivity Guidelines

Implementation Actions:

1. Preserve Corridors
2. Restore & Maintain Habitat
3. Mitigate Road Impacts



 Intact Protected Areas
 Movement Corridors

Our Approach

Full Working Group

>100 members

Mapping

39 members

Guidance Doc

36 members

Communication

19 members

**Federal, State, Other government, Regional planning agencies,
Non-profit organizations, Universities, Companies**

Statewide Habitat Connectivity Plan Implementation

Preserve Corridors:



 Intact Protected Areas
 Movement Corridors

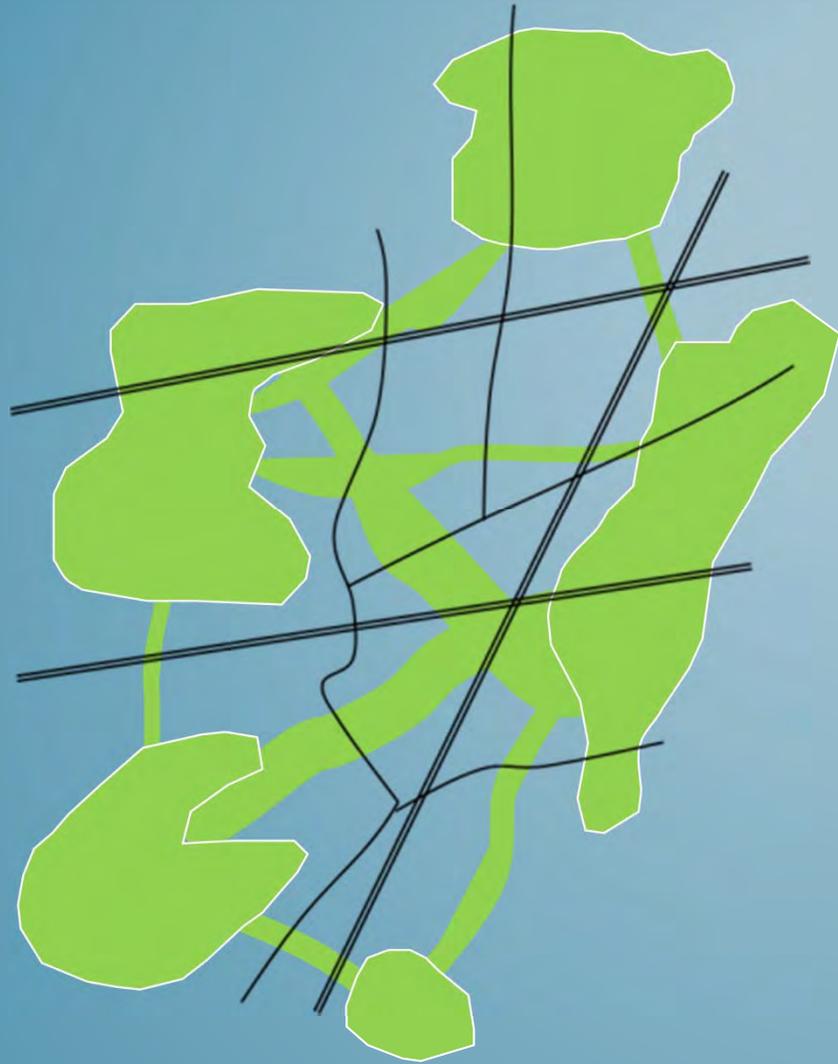
Statewide Habitat Connectivity Plan Implementation

Restore & Maintain:



 Intact Protected Areas
 Movement Corridors

Statewide Habitat Connectivity Plan Implementation



-  Intact Protected Areas
-  Movement Corridors
-  Roads

Mitigate Road Impacts:



Road Crossing



Road Crossing



Road Crossing



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M 1/5

69°F

PC90HO COVERT PRO

RECONYA

Product Benefits

- Wildlife population recovery and sustainability
- Maximizing the return on our open space and overall conservation investment
- Increasing permit efficiency and cost savings
- Increasing driver safety



Crossing Structure Guidelines/BMPs

Permeability of Existing Structures for Terrestrial Wildlife: A Passage Assessment System

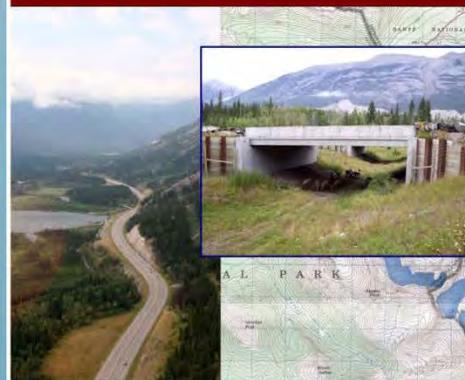
WA-RD 777.1 Julia Kintsch July 2011
 Patricia C. Cramer



Washington State Department of Transportation
 Office of Research & Library Services

SAFE PASSAGE
 A USER'S GUIDE TO DEVELOPING EFFECTIVE HIGHWAY CROSSINGS FOR CARNIVORES AND OTHER WILDLIFE

Handbook for Design and Evaluation of Wildlife Crossing Structures in North America



By
 Tony Clevenger and Marcel P. Huijser
 Western Transportation Institute
 Montana State University - Bozeman

Prepared for the Federal Highway Administration
 400 7th Street, S.W.
 HEPM-30
 Washington, DC

massDOT
 Massachusetts Department of Transportation
 Highway Division

Design of Bridges and Culverts for Wildlife Passages at Freshwater Streams

December 2010



Best Practices Manual

Wildlife Vehicle Collision Reduction Study

Report to Congress
 October 2008

U.S. Department of Transportation
 Federal Highway Administration
Making America's Highways Safer for Drivers and Wildlife

MaineDOT

WATERWAY and WILDLIFE CROSSING POLICY and DESIGN GUIDE
 For Aquatic Organism, Wildlife Habitat, and Hydrologic Connectivity
 3rd Edition, July 2008



In Cooperation With:

Maine Atlantic Salmon Commission
 Maine Department of Environmental Protection
 Maine Department of Inland Fisheries and Wildlife
 Maine Department of Marine Resources
 Maine Land Use Regulation Commission
 National Marine Fisheries Service
 National Resources Conservation Service
 U.S. Army Corps of Engineers
 U.S. Fish and Wildlife Service
 U.S. Environmental Protection Agency

Crossing Structure Database



Engineering Work



Department of Civil and Environmental Engineering

- Land survey and design
- Conceptual drawings for Road/Wildlife BMPs

Culvert Inventory

NJ Pilot Road/Stream Crossing Assessment

Ellen Creveling, TNC

1. Characterize existing culverts
2. Identify ways to improve connectivity for aquatic wildlife passage and stream health

The Nature
Conservancy 
Protecting nature. Preserving life.™

UMassAmherst

UMassExtension

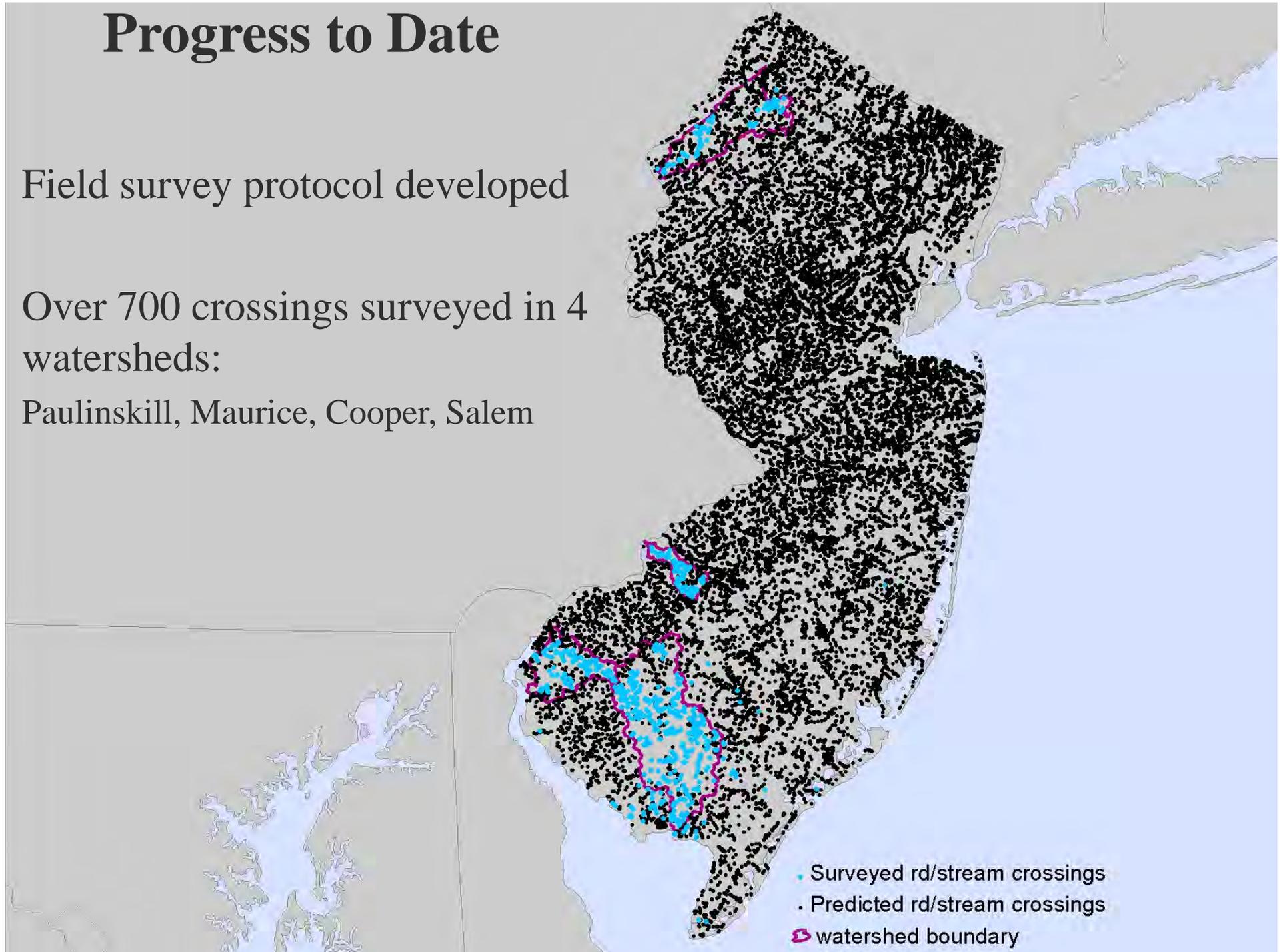
River and Stream Continuity Project

Progress to Date

Field survey protocol developed

Over 700 crossings surveyed in 4 watersheds:

Paulinskill, Maurice, Cooper, Salem



Wildlife Crossing Survey

Wildlife Guardian Project

MONTCLAIR STATE UNIVERSITY

PASSAIC RIVER
INSTITUTE

The College of Science and Mathematics

Goals/objectives:

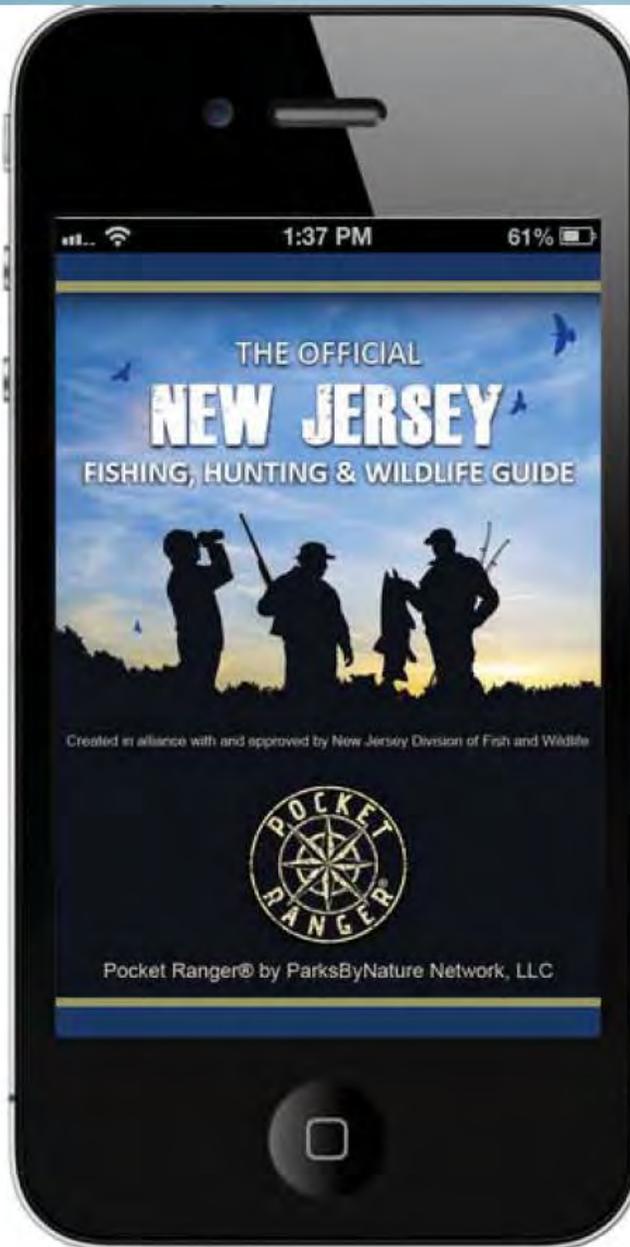
1. Identify wildlife crossing hot spots in NJ
2. Gain insight into landscape characteristics associated with hotspots

Volunteers Will:

- Adopt road transect
- Survey for road kill and wildlife crossing
- 3x per week
- March through May



Roadkill Data



Pre and Post Construction Monitoring

- **Pre-Monitoring**

- Mortality hotspot
- Movement corridor
- Planned roadwork

Rte. 78 overpasses

2012-08-27 10:10:41 PM



HC500 HYPERFIRE

Bobcat using existing structure under Rte. 23



- **Post Monitoring**

- Retrofits
- New construction



Getting Projects in the Ground



Transportation Enhancement Program

- One of 12 eligible activities: **reduce vehicle-caused wildlife mortality while maintaining habitat connectivity**
- Applied for funding for **3** wildlife mitigation projects in northern NJ



Habitat Connectivity Initiative

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