Session 4: From Conservation Design to Delivery
Session Hosts: Steve Fuller, Wildlife Management Institute and Dan Brauning, Pennsylvania Game Commission

Objectives:

1. Understanding of conservation design projects, how the results/data/tools produced by each of them can be used, and how they fit into the framework; and

2. Identification of priority conservation design, science translation, conservation adoption, and delivery needs.

Northeast Conservation Framework

GOAL-SETTING
Which species/habitats to conserve, at what levels, and who decides?

BIOLOGICAL ASSESSMENT
What do we know about the status of priority wildlife?

PRIORITIES
Which issues demand immediate attention?

INFORMATION MANAGEMENT
How will we manage the demand for and creation of data?

MONITORING, EVALUATION AND RESEARCH
What new information will we gather to support conservation?

CONSERVATION DESIGN
Where are the best places to conserve the most species and habitats?

- **Regional Focus Areas and Corridors (RCN 4)**
- **Design & Implement Conservation Strategies for SGCN (RCN 5)**

SCIENCE TRANSLATION
How do we make science solutions useful?

- **Guidelines for Local Planning Boards (formerly RCN 4)**

CONSERVATION ADOPTION
How do we engage the right communities and landowners?

- **Guidelines for Local Planning Boards (formerly RCN 4)**
- **Standards for Wind Turbine Sites (RCN 9)**

CONSERAVTION DELIVERY
How will we most efficiently put conservation on the ground?

- **Design & Implement Conservation Strategies for SGCN (RCN 5)**
- **Landscape Scale Habitat Initiatives (formerly RCN 7)**

- ***Conservation Design: Where are the best places to conserve the most species and habitats?***

  Consider the needs of society, alternate scenarios, metrics describing landscape conditions, priorities within and among jurisdictions, feasibility of conservation

- ***Science Translation: How do we make science solutions useful?***

  Create tools designed to answer specific management questions, use accessible media, apply information at meaningful spatial scales

- ***Conservation Adoption:*** *How will we get communities and landowners engaged in conservation?*

  Discourage "random acts of conservation", engage opinion leaders, organize local partnerships to help implement plans, deliver targeted outreach to key landowners and communities

- ***Conservation Delivery:*** *How will we most efficiently put conservation on the ground?*

  Provide technical assistance to landowners/managers, Create efficiencies of scale to deliver actions, develop Best Management Practices

Conservation Framework

Species, Habitats, Landscapes, Systems

SCIENCE

Past Condition   Current Condition   Future Conditions (Threats)

Desired Condition (goals)

Conservation Design and Tools

CONSERVATION

Protection

Translation

Policies/ Regs

Conservation Adoption

Restoration

Management

Communication

RCN, LCC & CSWG Projects covered in the session:

Conservation Design

Regional Focus Areas and Corridors (RCN TOPIC 4)

- Regional Focus Areas for SGCN, Network Resilience and Connectivity (RCN 2008-3)
- Geospatial Condition Analysis (RCN
- Identification of Tidal Marsh Bird Focal Areas BCR 30 (RCN 2010-3)
- Secured Lands (TNC)
- Designing Sustainable Landscapes (NA LCC)-*partial*
- Northern Appalachian Connectivity (Comp. SWG)
- Rangewide New England Cottontail Initiative (Comp. SWG 2009 and 2011)

Science Translation

Decision Support Tools

- Sea Level Rise and Tidal Wetland Restoration Guidance (NOAA)
- Habitat Priority Planner (NOAA)
- Forecasting Stream Flow (NA LCC)
- Piping plover beaches and sea level rise (NA LCC)

Conservation Adoption

Guidelines for Local Planning Boards (formerly RCN TOPIC 4)

- Model Guidelines for Assisting Local Planning Boards with Conservation of SGCN and their Key Habitats through Local Land Use Planning (RCN 2008-2)

Action Delivery

Landscape Scale Habitat Initiatives (formerly RCN TOPIC 7)

- Northeast Regional Connectivity Assessment Project (RCN 2007-2)
- Proposal to Establish a Regional Initiative for Biomass Energy Development for Early-Succession SGCN in the Northeast (RCN 2007-7)
- Implementing Bird Action Plans for Shrubland Dependents in the Northeast (RCN 2007-8)

Design & Implement Conservation Strategies for SGCN (RCN TOPIC 5)

- Rangewide New England Cottontail Initiative (Comp. SWG 2009 and 2011)

Focus on Conservation Design:

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Regional Focus Areas for SGCN, Network Resilience and Connectivity:
Species Resilience
Regionally Significant Species of Greatest Conservation Need

Responsibility and Concern

	Low Responsibility	High Responsibility		
	Found in 4+ states	Found in 2-3 states	Found in 4+ states	Total
Low Concern			Low concern, High responsibility (39:7:0)	
Moderate Concern		Limited distribution, High responsibility (53:26:26)	Moderate concern, High responsibility (22:10:2)	
High Concern	High concern, Low responsibility (78:54:36)		High concern, High responsibility (15:9:5)	
Widespread Concern	Widespread concern, Low responsibility (117:98:80)		Widespread concern, High responsibility (36:31:28)	
Total Species	195:152:116	53:26:26	112:57:35	360: 235: 177

360 Species > 1 state

Level of Regional Concern: SWAPS

Low concern = listed in < 25% of states that contained it.
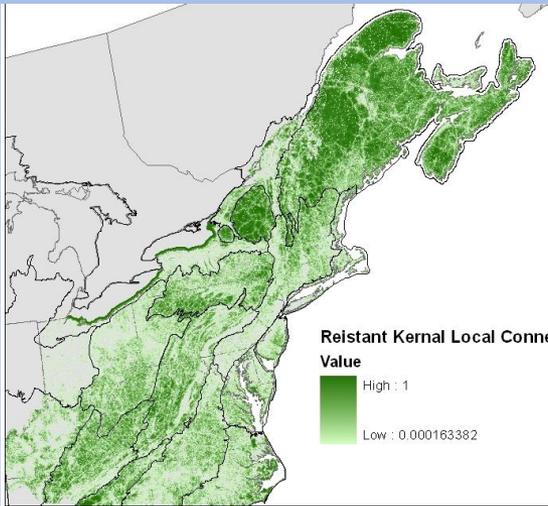
Moderate = 25-50%,

High = 50-75%,

Widespread >75%

Level of Regional Responsibility:

High responsibility = >= 50 percent of the U.S. distribution in the 13 states

Low responsibility = <= 50 percent of the U.S. distribution in the 13 states
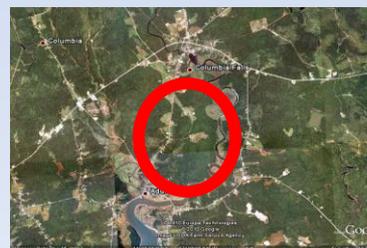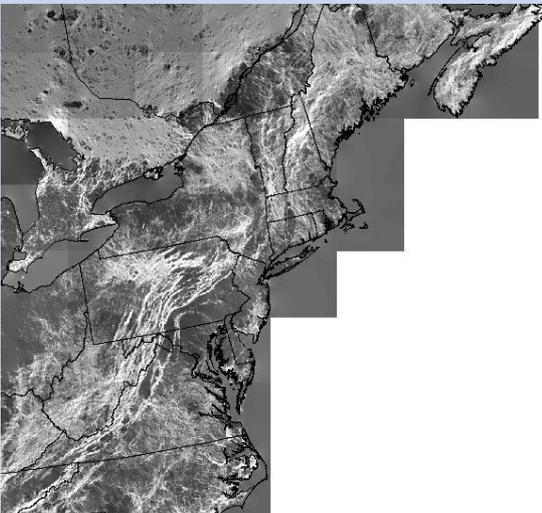
Situational Resilience: 1

Local Connectedness

Reistant Kernal Local Conne
Value
High : 1
Low : 0.000163382

Flow Concentrations
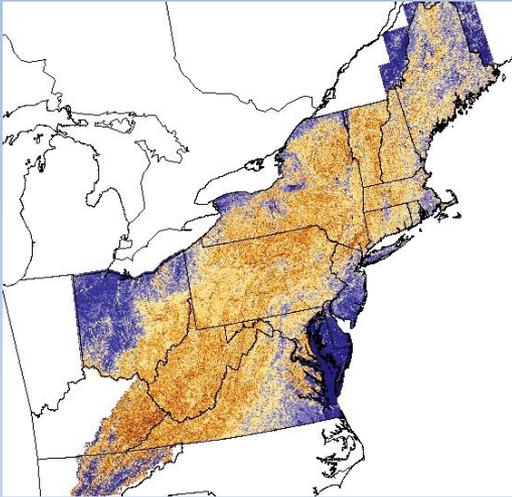

Landscape Permeability

Measures of the resistance of the direct neighborhood surrounding the location (1) or of the potential concentration of flows through the location point (2).

Situational Resilience: 2
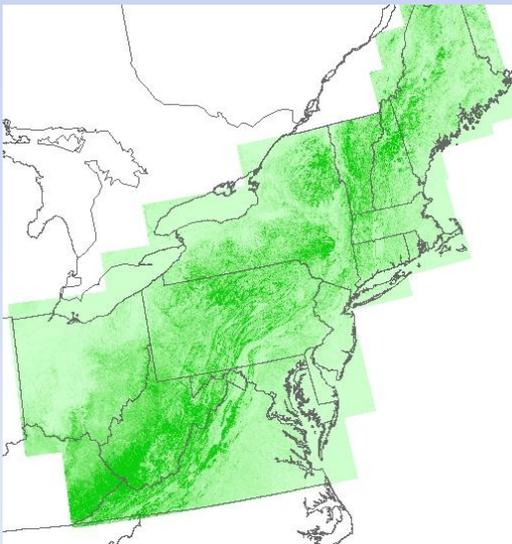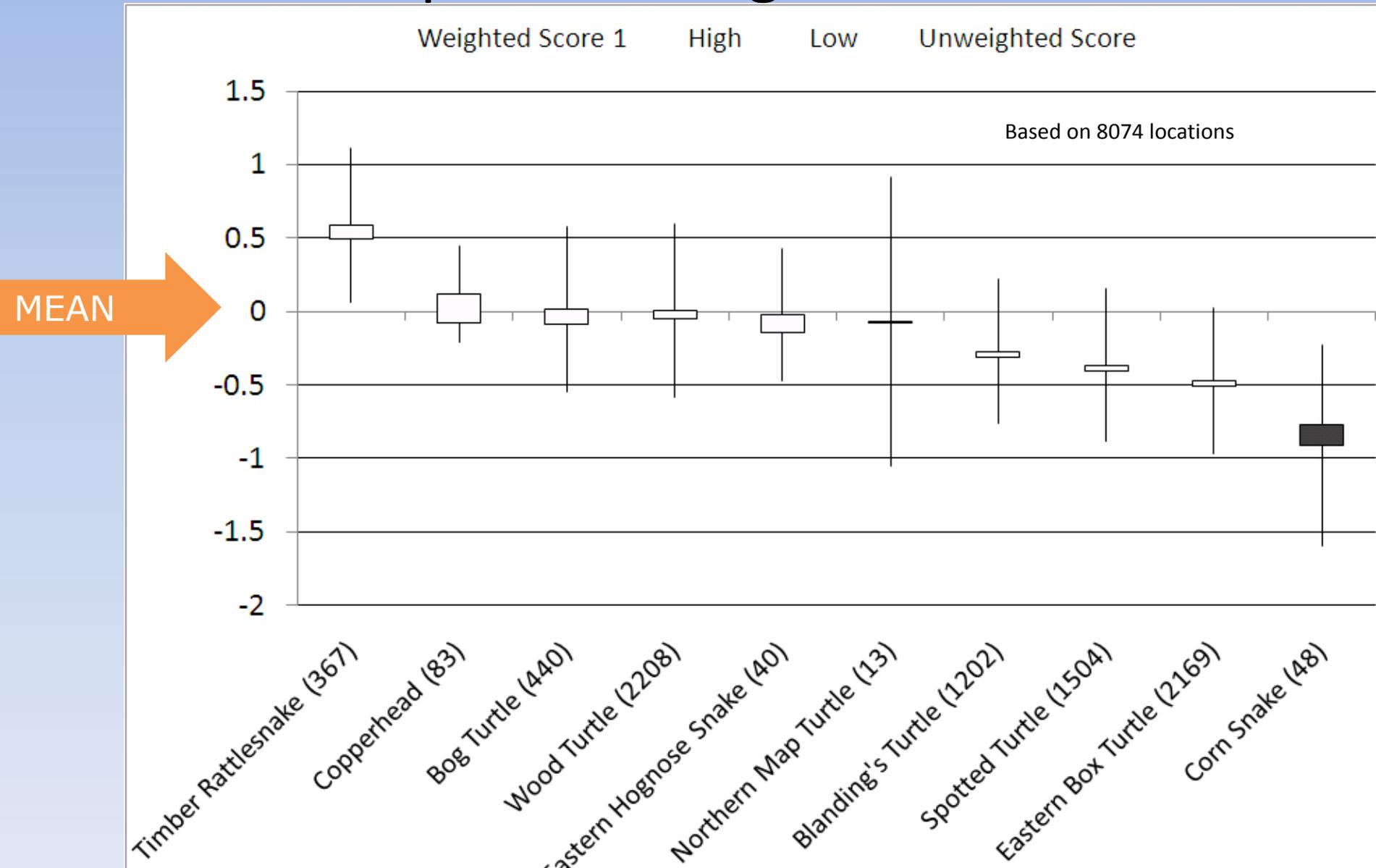
Landform Diversity

Elevation range

Landscape Diversity

Measures of the topographic , elevation diversity, and wetland density in the direct neighborhood surrounding the location

What are the options for species to rearrange at the site level

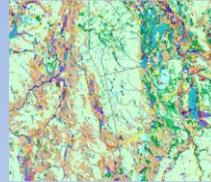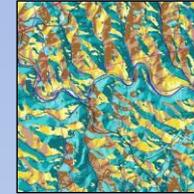# Example Results: Resilience Scores compared to Regional Mean

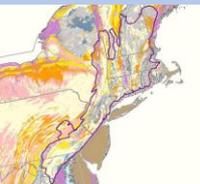# Data Driven:

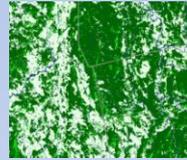## Wall to wall grids and confirming points
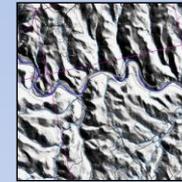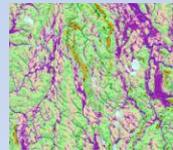
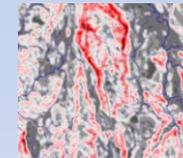 Elevation

 NWI Wetland

 Categorical Aspect

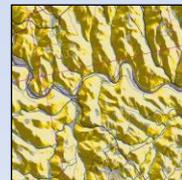 Geology

 Canopy closure

 Shaded Relief

 Landcover

 Landforms

 Rugosity

 Solar radiation

 Aspect

Over 10,000 FIA and NHP data points

 Precipitation

Next Step: A Geospatial Condition Analysis of each Habitat

Terrestrial Systems
- Land cover and Canopy closure (MRLC 2001)
- Large unfragmented landscapes and forest blocks (TNC 2007)
- Conservation land parcels (TNC 2008)
- Housing density projections through 2050 by census block (Theobold 2006)
- Roads and fragmenting features (Various sources) ,
- Existing and proposed infra-structure features (TBD)
- Changed in canopy cover (CCAP)(
- Patch size and distribution (FRAGSTATS McGarigal 200)

Patch diversity metrics
- Number and type of rare species locations (NHP 2009)
- Bedrock and Surficial Geology types (TNC 2007)
- Landform diversity base on a topographic model (TNC 2007)
- Climate and elevation zones (WORLDCLIM)
- Regional Habitat maps, Streams networks, Lakes, Ponds (Various sources)
- Regionally compiled Wetlands (NWI)

Landscape context and natural land units
Connectivity between patches of habitat (Resistant kernel analysis –Compton 2007)
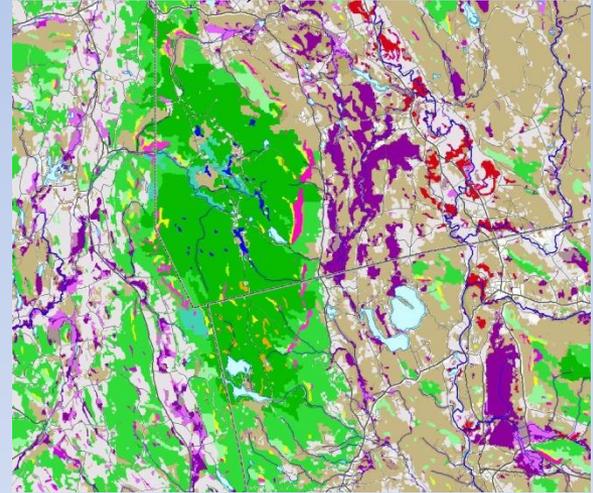
Assessment of Landscape Change in the North Atlantic Landscape Conservation Cooperative: Decision-Support Tools for Conservation

Kevin McGarigal, Brad Compton, Ethan Plunkett, Liz Willey, Bill Delucca, Joanna Grand, Scott Schwenk

Approach

1. Develop and compile spatial data

2. Build landscape change model – climate change, urban growth, succession

3. Assess landscape ecological integrity (*coarse filter*: **intactness, resiliency, buffering, diversity, and connectivity**) and **habitat capability** for representative species (*fine filter*) under **alternative future scenarios**

4. **Identify and map priorities for conservation (land protection, management and restoration)**
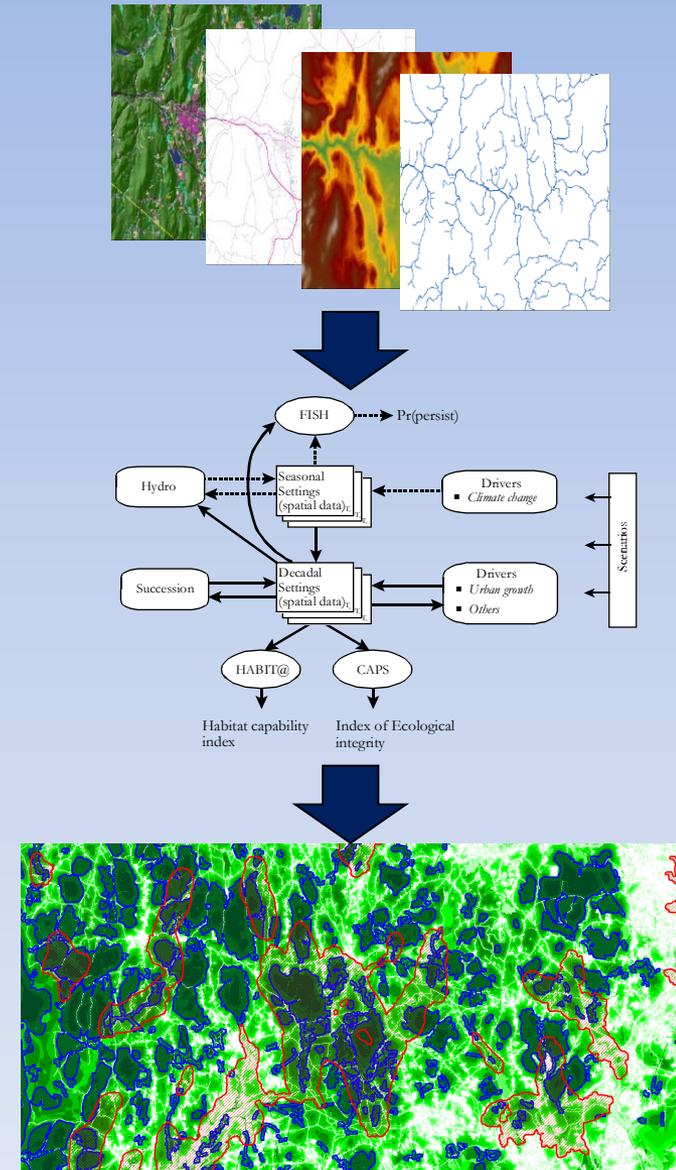
Developing Focus Areas:

Top 20%
ecological integrity

Top 20% (plus buffer)
wood turtle habitat
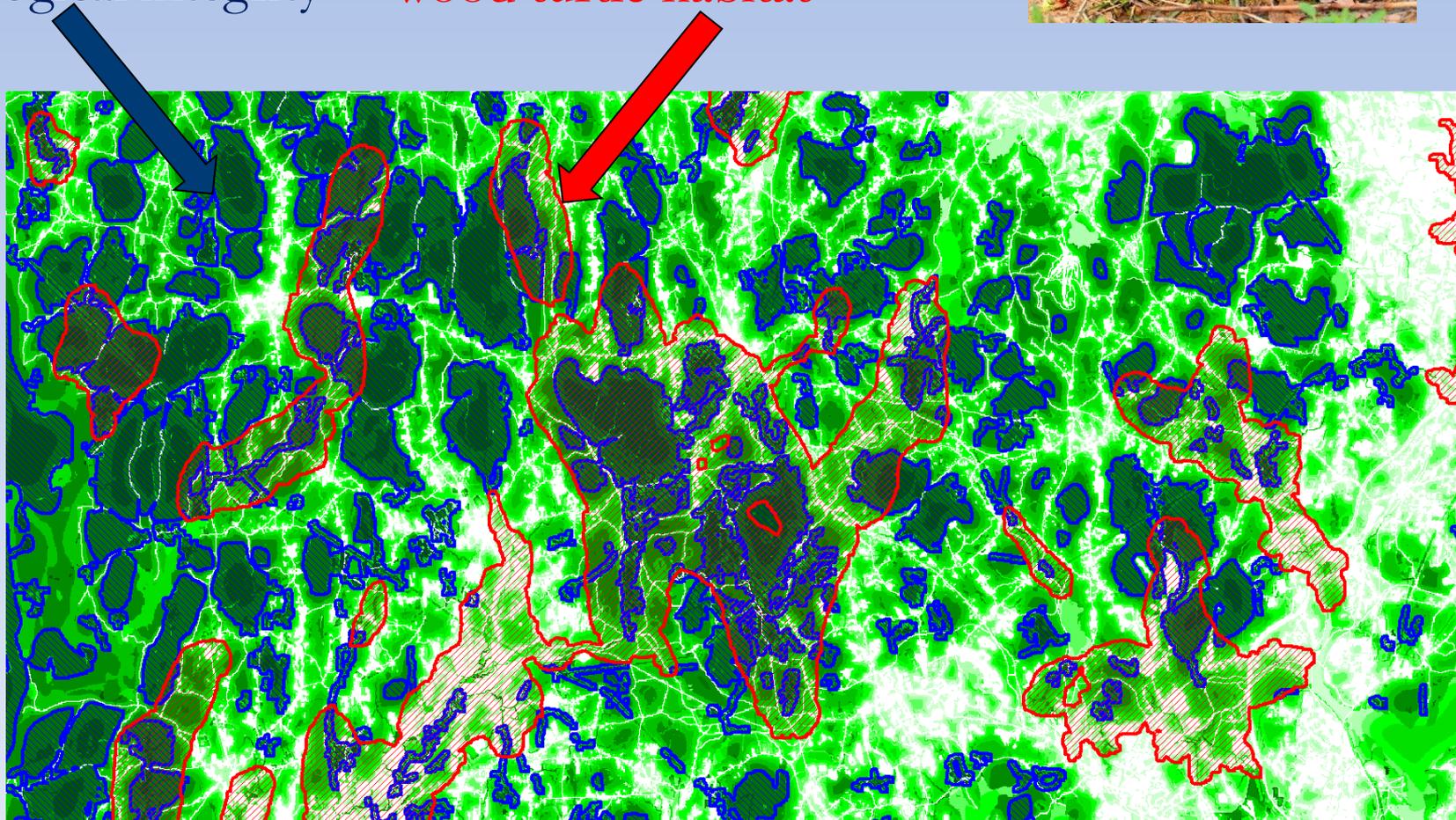
THE CONSERVATION OF TIDAL MARSH BIRDS:
Guiding action at the intersection of our changing land and seascapes

Greg Shriver

1) Fill gaps in current surveys

2) Produce population estimates and identify regional population centers

3) Repeat historic surveys

4) Model geographic variation in productivity and survival

5) Provide a detailed description of states regional responsibility

6) **Identify the most critical areas** for the long-term preservation of the tidal marsh bird community within each state

Saltmarsh Habitat & Avian Research Program

MAINE · UCONN · UNIVERSITY OF DELAWARE · 1865 THE UNIVERSITY OF MAINE · Audubon

www.tidalmarshbirds.org

Staying Connected in the Northern Appalachians

Geography: 7 linkage areas across the Northern Appalachians where regional connectivity is at risk.

Partners: 21 State agency and NGO partners across NY, VT, NH, and ME

Key Strategies

1. *Conservation science*
2. *Targeted land protection*
3. *Technical assistance to local communities*
4. *Increase the permeability of key roads*
5. *Model conservation easement language*
6. *Measures framework*

Key Funders: (1) USFWS Competitive State Wildlife Grant; (2) WCS/Duke Wildlife Action Opportunities Fund

STAYING CONNECTED IN THE NORTHERN APPALACHIANS
HIGH PRIORITY LINKAGE AREAS
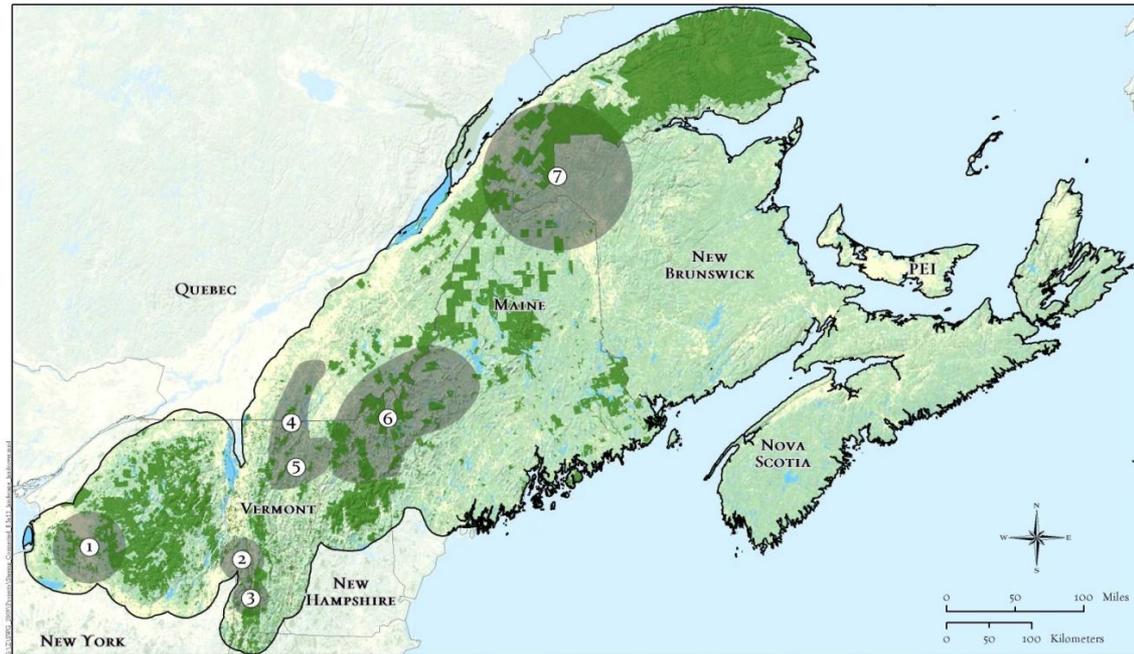
LEGEND

High Priority Linkage
State/Province Boundary

Land Cover
Forest
Non-Forest
Water

HIGH PRIORITY LINKAGES

① TUG HILL PLATEAU ↔ ADIRONDACK MOUNTAINS (NY)
② ADIRONDACK MOUNTAINS ↔ GREEN MOUNTAINS (NY/VT)
③ TACONIC MOUNTAINS ↔ SOUTHERN GREEN MOUNTAINS (NY/VT)
④ NORTHERN GREEN MOUNTAINS (VT/CANADA)
⑤ WORCESTER RANGE ↔ NORTHEAST KINGDOM (VT)
⑥ NORTHEAST KINGDOM ↔ NORTHERN NH ↔ WESTERN ME MOUNTAINS (VT/NH/ME)
⑦ MAINE'S NORTH WOODS ↔ QUEBEC'S GASPE PENINSULA (ME/CANADA)

Created: March 26, 2010 by
The Nature Conservancy
Protecting nature. Preserving life.
Data Source: TNC & ESRI

Using Circuitscape to model areas of concentrated and diffuse flow patterns in northeastern VT – northern NH – western ME
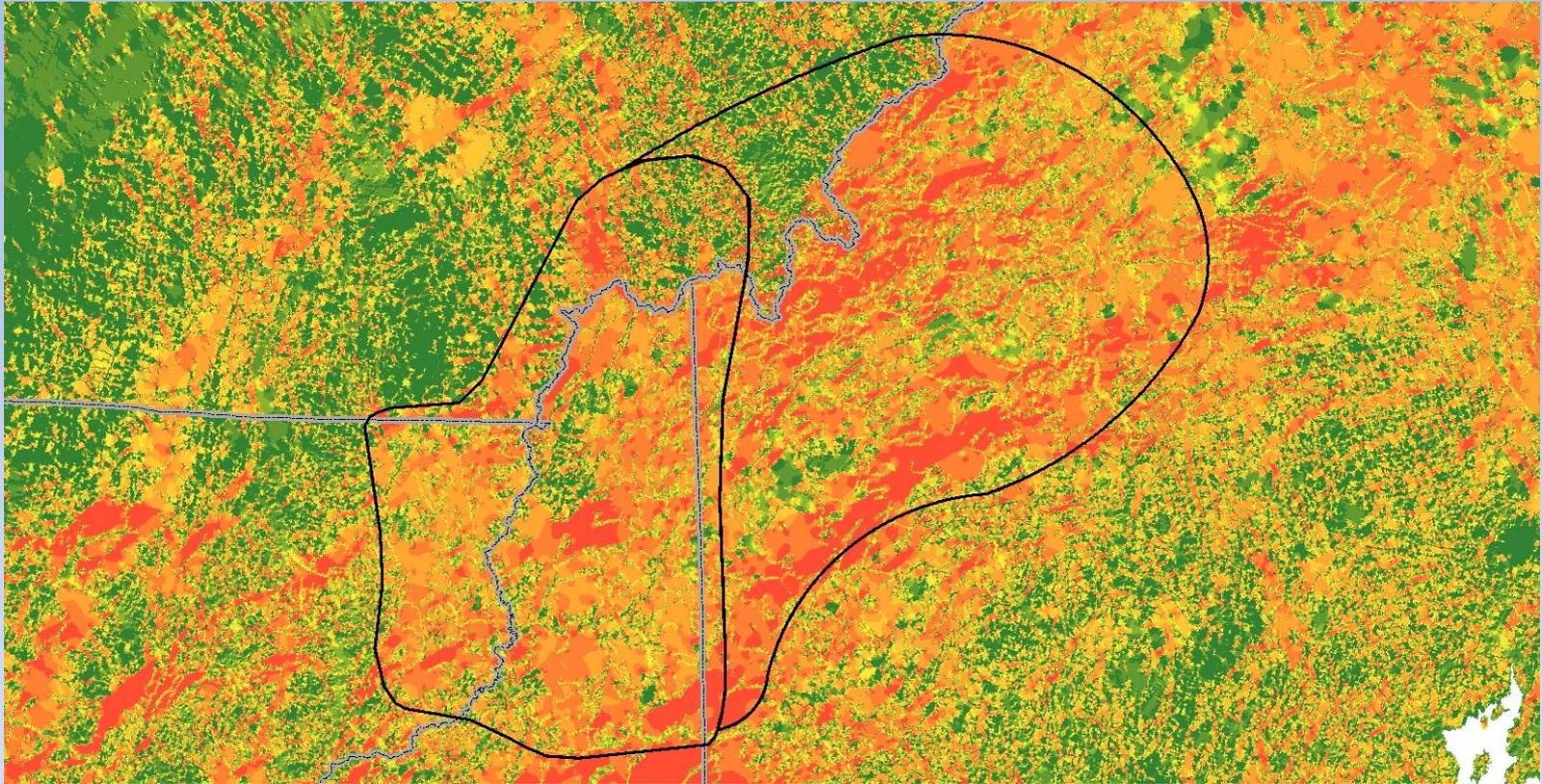
Red: concentrated flow pattern (= energy funneling here)

Orange: diffuse flow pattern (= highly permeable landscape pattern)

Green: area of low flow (=impermeable landscape pattern)

The Rangewide New England Cottontail Initiative (C-SWG 2009)
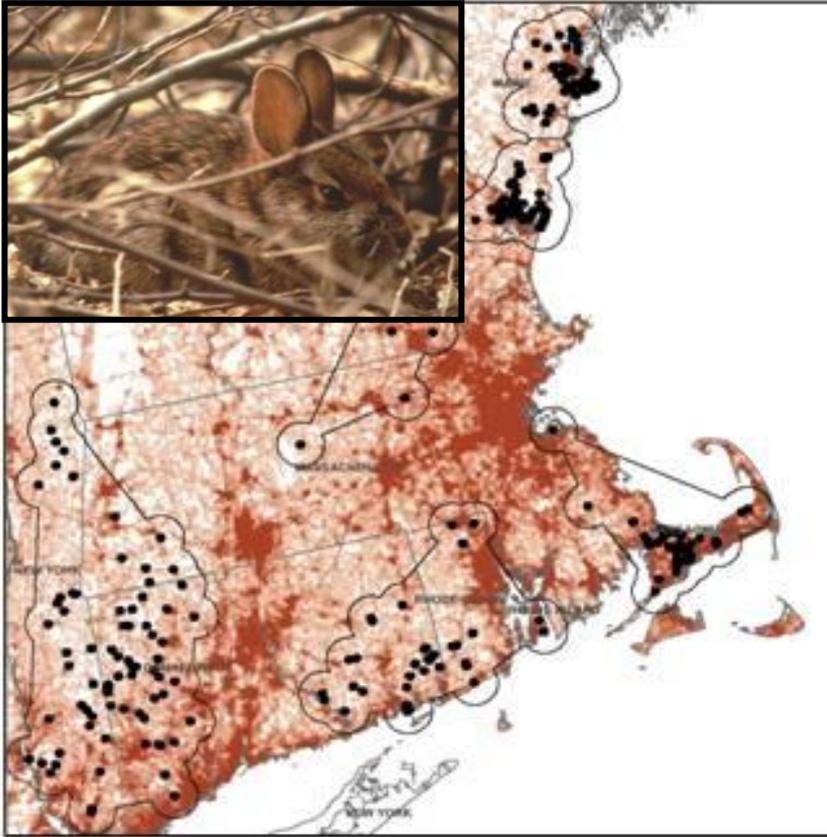
Figure 1. Minimum convex polygons (MCP) were calculated drawn around clustered New England cottontail presence-only data. MCP (black lines) provided a sample frame for bootstrapping absence data (black dots) and a grid of null points. Red map background shows impervious surface (NLCD 2001).
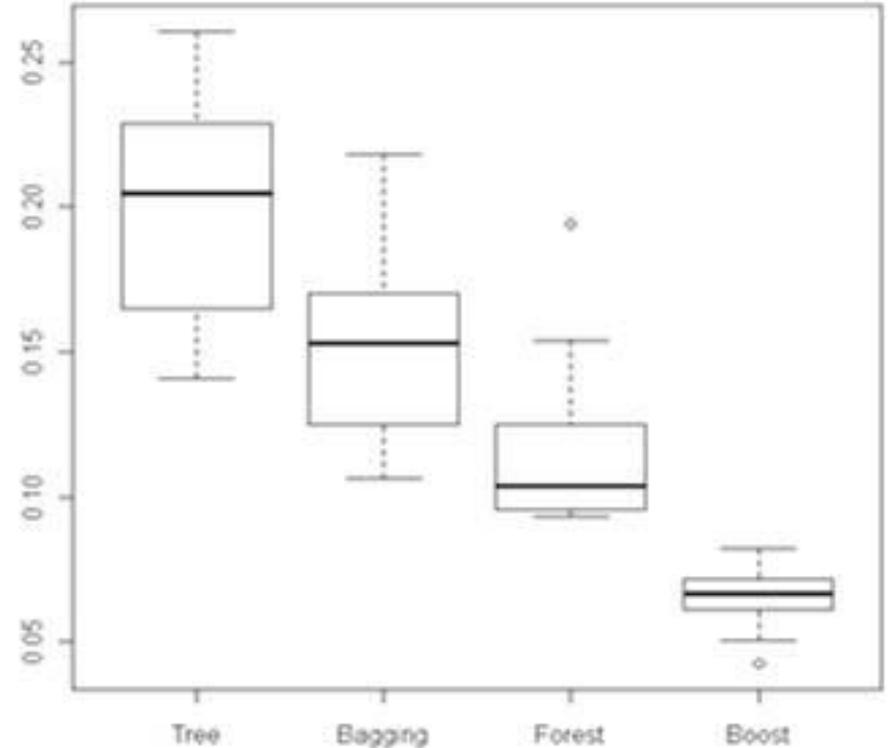
Figure 2. Plots of the test set misclassification errors from cross-validation 20 runs with 500 iterations for each model. Boosting outperforms the other methods.

STEP 1: Biological Assessment: Compile species presence data, select a model, and map habitat.

Londonderry, NH

- Town boundary
- ● Known NEC locations
- ● NEC Predicted

Londonderry parcels
NEC PREDICTED

- N
- Y

Grid is 100 meter regular spacing
within parcels > 5 acres

0 2 4
Kilometers

New England Cottontail

Conservation Design
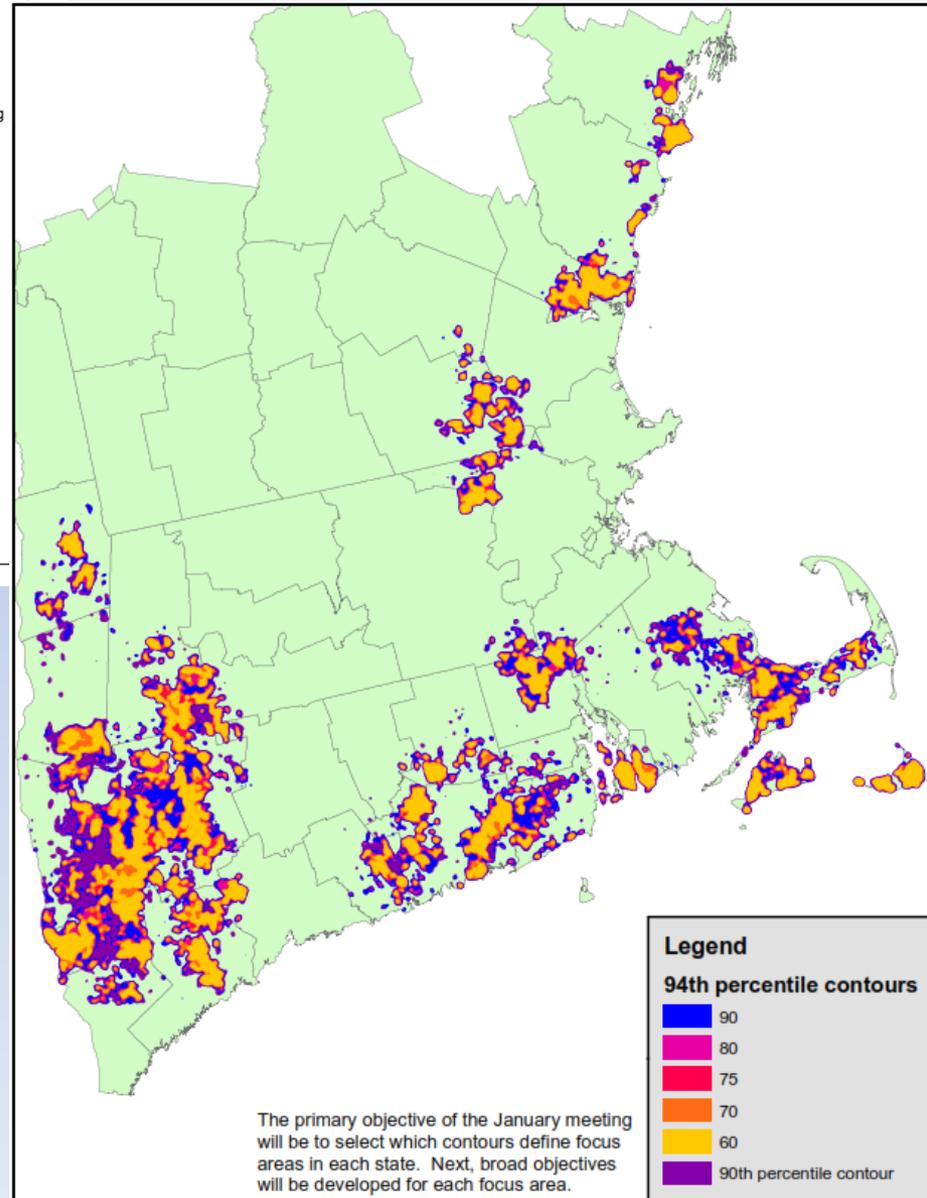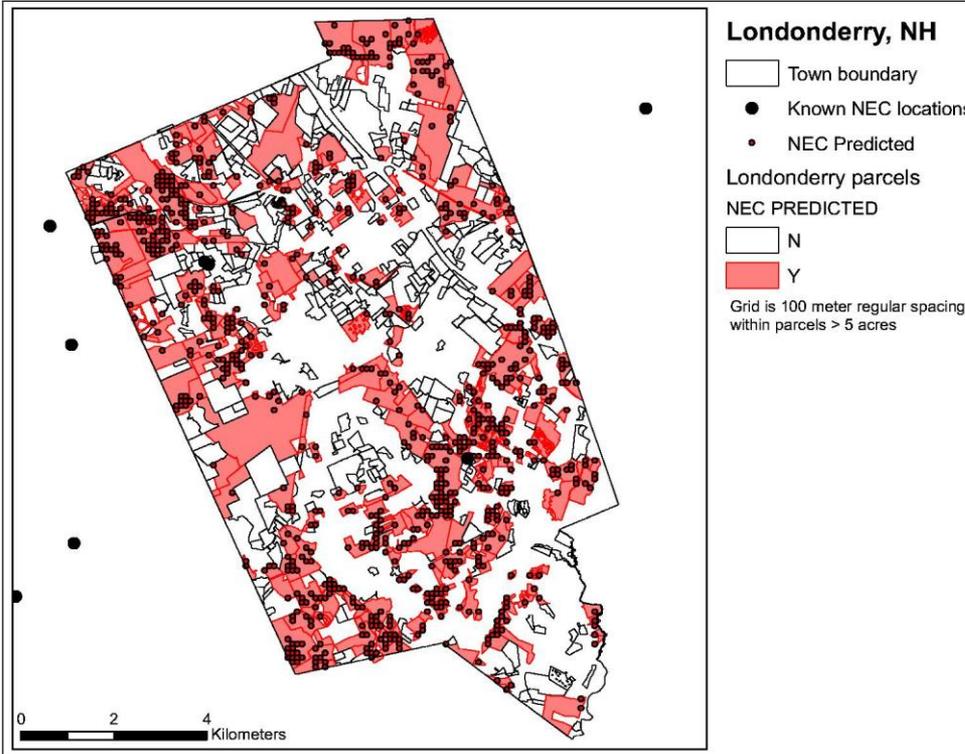
STEP 2: Rank parcels based on <u>FEASIBILITY:</u> size, proximity to conserved land, and <u>CONDITION:</u> habitat suitability, occurrence probability, and known locations.

STEP 3: Use a parcel rank-weighted analysis to delineate possible contours for focus areas.

Legend

94th percentile contours

- 90
- 80
- 75
- 70
- 60
- 90th percentile contour

The primary objective of the January meeting will be to select which contours define focus areas in each state. Next, broad objectives will be developed for each focus area.

New England Cottontail: Iterative Conservation Design and Goal-Setting

The Range-wide New England Cottontail Initiative
Wildlife Management Institute

For review at NEAFWA Workshop Only

DRAFT Focus Areas

Northern
Portland
Cape Elizabeth/Scarb.
N-S Corridor
Wells East
Elliot/The Berwicks
Seacoast
Kittery
Merrimack Valley
Rensselaer Co.
Northern Columbia Co.
Northern Worcester Co.
Southern Columbia Co.
Northern Border
Upper Housatonic
Central Dutchess Middle Housatonic
Goshen uplands
Harlem-Housatonic Lower Housatonic
West Putnam
Westchester Co.
Northeast RI
Plymouth Co.
Sandwich
Upper Cape-MMR Harwich-Brewster
Hyannis/Yarmouth
Mashpee
Scotland-Canterbury
Pachaug North
Eastern Connecticut Southwest RI
Little Compton/Tiverton
Aquidneck
Pachaug South
Lower CT River
Ledyard-coast South Shore
Martha's Vineyard
Nantucket

50 Miles

N

STEP 4: Hold a workshop for decision-makers and biologists to refine focus area boundaries and set population and habitat goals.

Focus on Science Translation:
How do we maximize the utility of science?

Decision Support Tools
- Sea Level Rise and Tidal Wetland Restoration Guidance (NOAA)
- Habitat Priority Planner (NOAA)
- Forecasting Stream Flow (NA LCC)
- Piping plover beaches and sea level rise (NA LCC)

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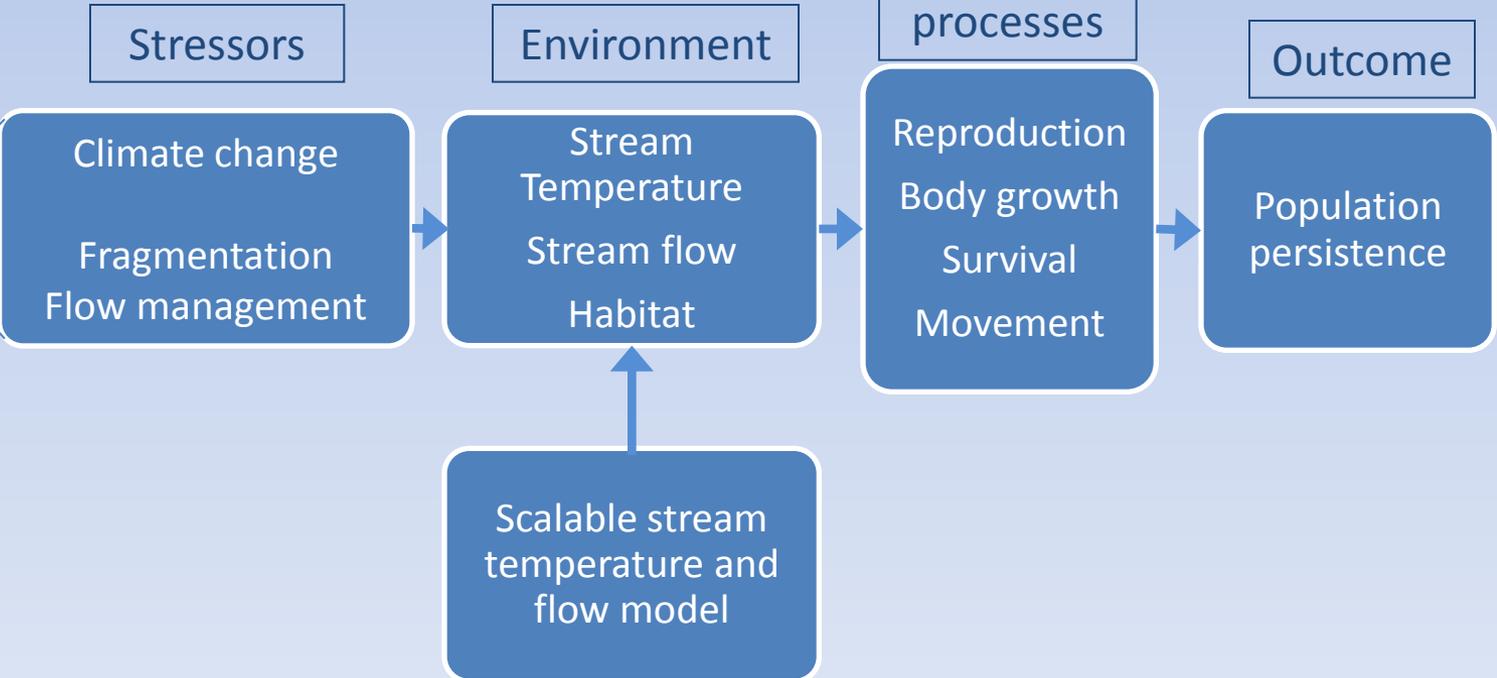**CONSERVATION ADOPTION**
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Forecasting Stream Flow (NALCC)
Ben Letcher

Data

- Since 1997, over 35,000 individually-tagged fish
- 4 streams with 2 new streams in 2011

Analysis

Model

Simulation

Management tool

Stressors

Climate change

Fragmentation
Flow management

Environment

Stream Temperature
Stream flow
Habitat

Population processes

Reproduction
Body growth
Survival
Movement

Outcome

Population persistence

Scalable stream temperature and flow model

Management Tool:

```
Data
  ↓
Analysis
  ↓
Model
  ↓
Simulation
  ↓
Management
tool
```

- Decision support system for evaluating effects of management alternatives on local population persistence

- Map-based
- Input local conditions
  - Temp, flow, global climate change
- Input existing fish data
  - Abundance, body sizes, fish community
  - Model based on individual-based data will be 'fine-tuned' to local conditions

- Output
  - **Effects of management alternatives**
    - Probability of persistence after x years
    - Body size distributions

Forecast effects of accelerating sea-level rise (SLR) on the habitat of Atlantic Coast piping plovers and identify responsive conservation strategies

Sarah Karpanty

Robert Thieler
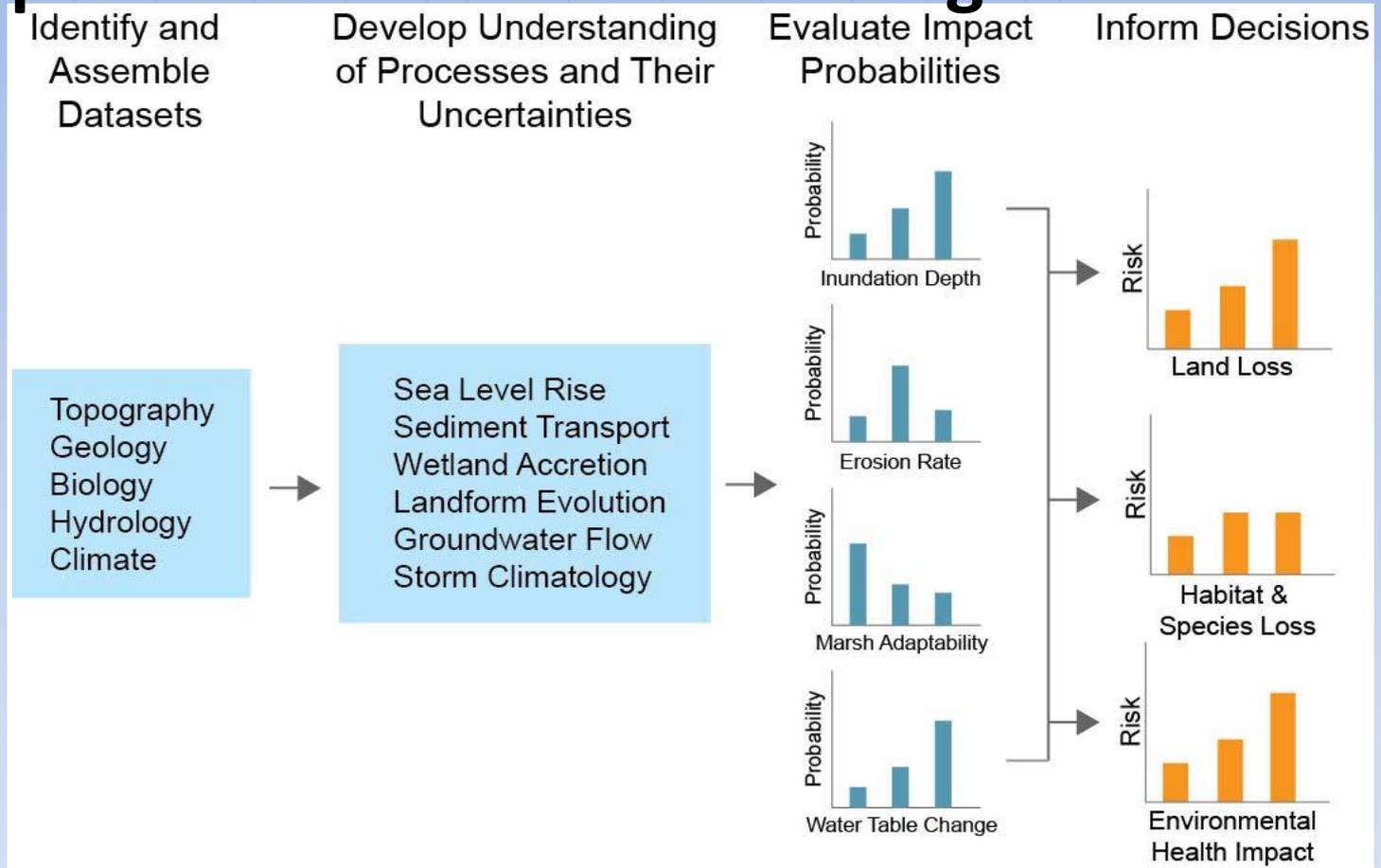
Comparing risks to assess coastal change for plovers

Explicitly include uncertainties, as well as **management application**

Application of a Bayesian network to an uncertain future: Probability of shoreline erosion >1 m/yr at Assateague Island National Seashore

Current conditions
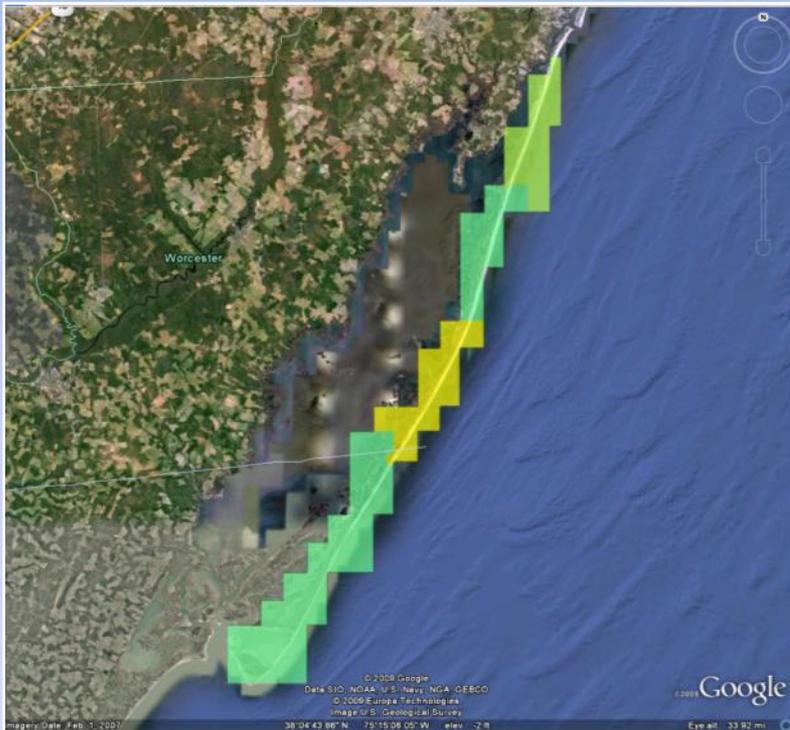
SLR +1 mm/yr, Wave ht. +10%
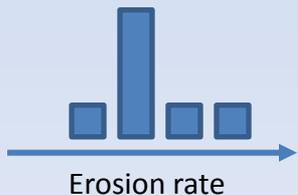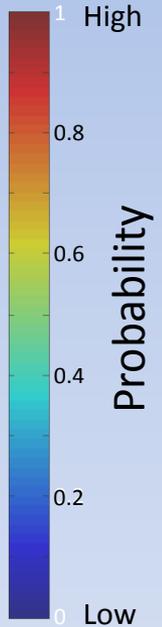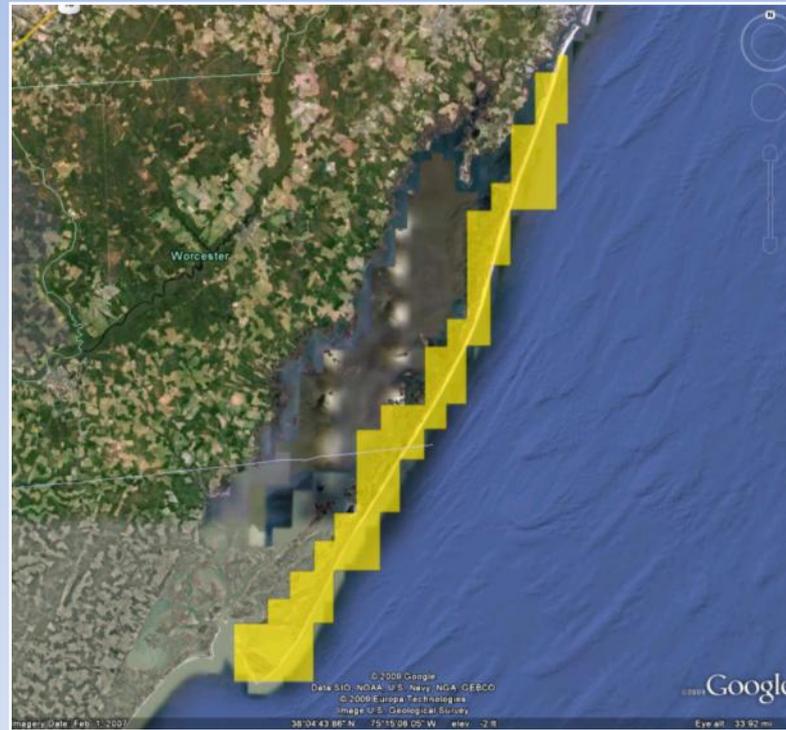
Narrow probability distributions

Relatively low uncertainty
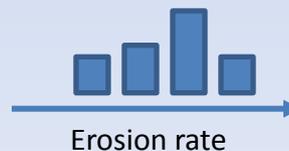
Erosion rate

Higher likelihood of erosion

Broader distributions

Increased uncertainty

Erosion rate

In the end…

- **We will test multiple possible scenarios of the future of our coasts**

- **We will incorporate practical application guidelines and case studies to <u>inform current and near-term decisions regarding coastal stabilization</u>**

- **Please come see our poster**

Road crossing and habitat linkage priorities in the Adirondacks-Greens Linkage

Outputs to Guide Action

1. *Structural connectivity priorities* for land protection and community planning strategies

2. *Priority road segments* for road crossing strategies

DRAFTGreens to Adirondacks - 1st and 2nd tier priorities for NRCS

5   2.5   0   5 Kilometers

Greens - Adrirondacks wildlife corridor
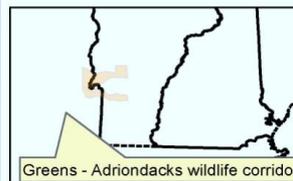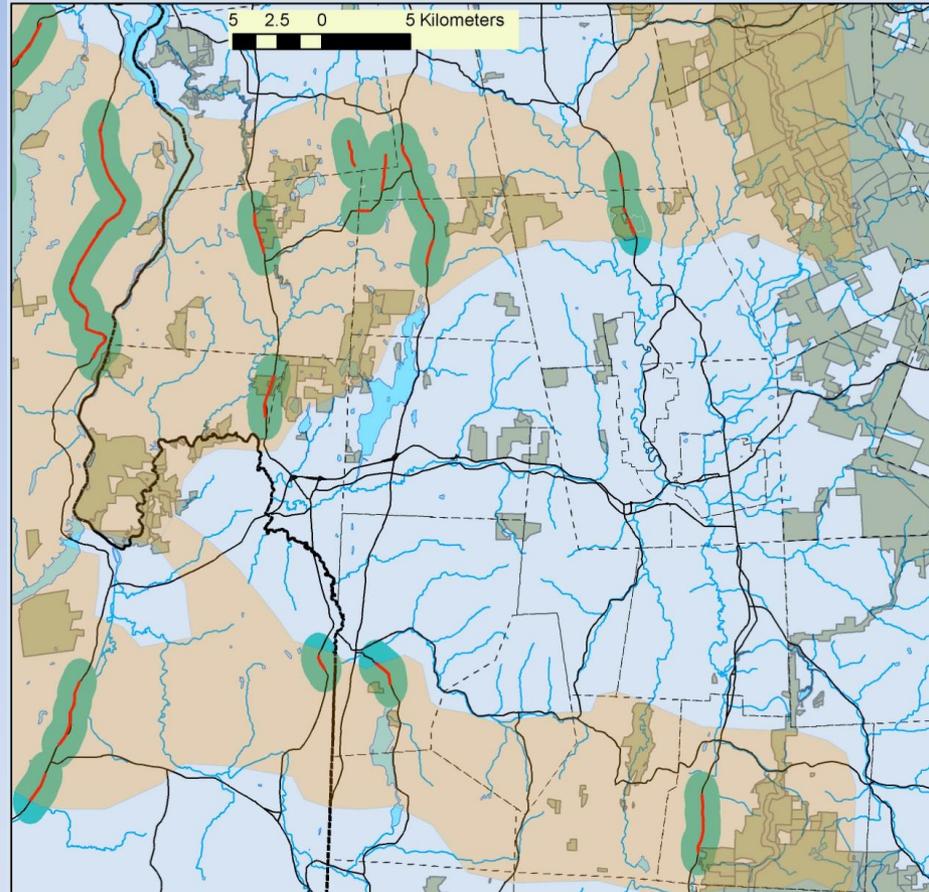
Legend
— Wildlife Road Crossing
■ TNC/State/Federal conservation lands
■ Priority 1: Road crossings
■ Priority 2 - Habitat linkage area

N

New England Cottontail: Translating the Science to Priority Parcels
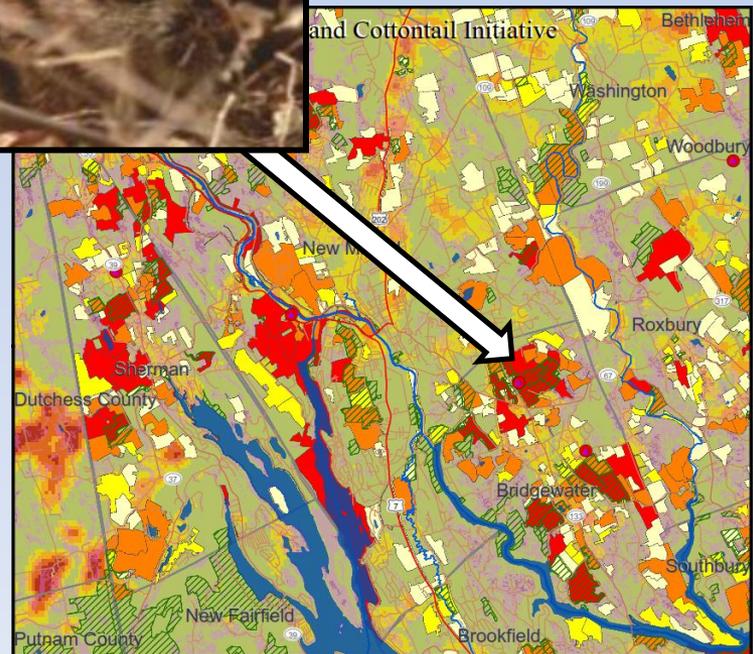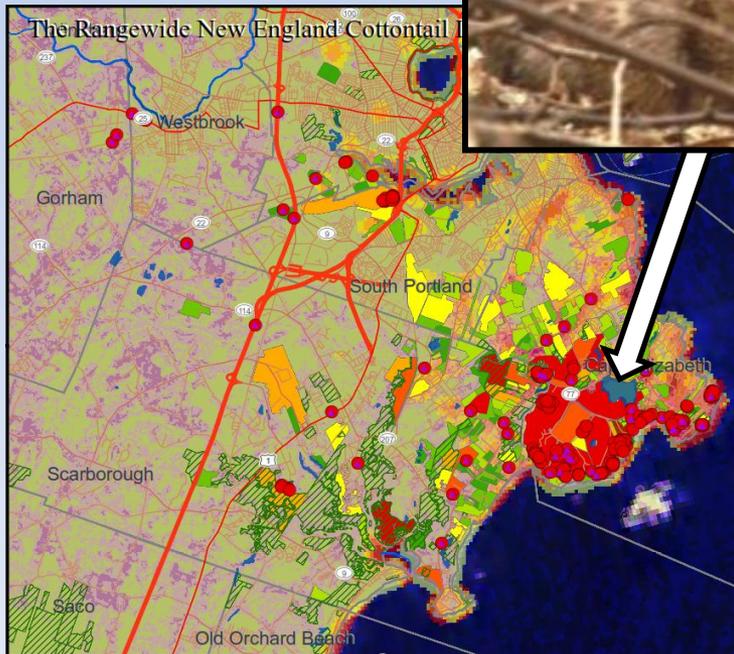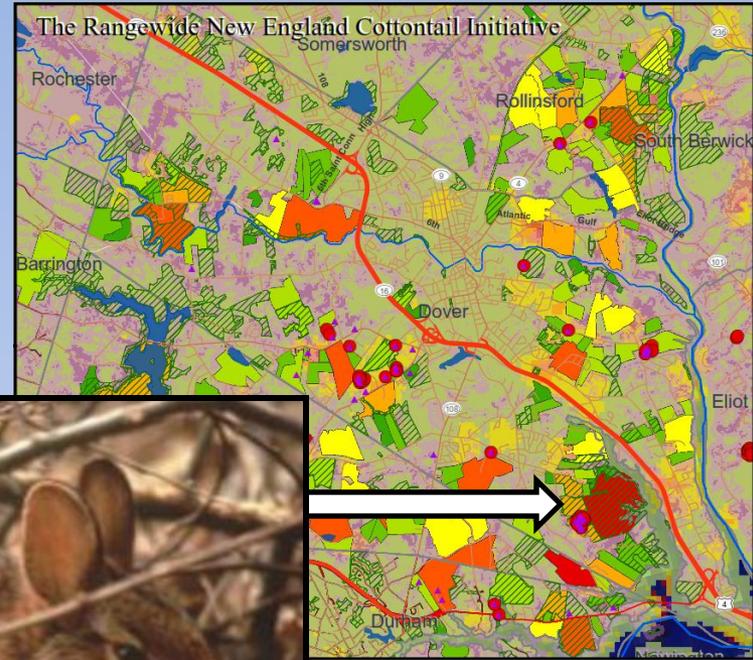
Focus on Conservation Adoption:
How do we get the right people in the right places to adopt prescribed conservation actions?

Guidelines for Local Planning Boards (formerly RCN TOPIC 4)
- Model Guidelines for Assisting Local Planning Boards with Conservation of SGCN and their Key Habitats through Local Land Use Planning (RCN 2008-2)
- Land Use Decision Support Tool (SANBI)
- Rangewide New England Cottontail Initiative (Comp. SWG 2009 and 2011)

Northeast Conservation Framework

GOAL-SETTING
Which species/habitats to conserve, at what levels, and who decides?

BIOLOGICAL ASSESSMENT
What do we know about the status of priority wildlife?

PRIORITIES
Which issues demand immediate attention?

INFORMATION MANAGEMENT
How will we manage the demand for and creation of data?

MONITORING, EVALUATION AND RESEARCH
What new information will we gather to support conservation?

CONSERVATION DESIGN
Where are the best places to conserve the most species and habitats?

- **Regional Focus Areas and Corridors (RCN 4)**
- **Design & Implement Conservation Strategies for SGCN (RCN 5)**

SCIENCE TRANSLATION
How do we make science solutions useful?

- **Guidelines for Local Planning Boards (formerly RCN 4)**

CONSERVATION ADOPTION
How do we engage the right communities and landowners?

- **Guidelines for Local Planning Boards (formerly RCN 4)**
- **Standards for Wind Turbine Sites (RCN 9)**

CONSERAVTION DELIVERY
How will we most efficiently put conservation on the ground?

- **Design & Implement Conservation Strategies for SGCN (RCN 5)**
- **Landscape Scale Habitat Initiatives (formerly RCN 7)**

Development of Model Guidelines for Assisting Local Planning Boards with Conservation of Species of Greatest Conservation Need and their Key Habitats through Local Land Use Planning

Lesley Sneddon and Sue Gawler

Rebecca Kihslinger, Environmental Law Institute
Molly Cheatum, Defenders of Wildlife
Jason Bulluck, Virginia Department of Natural Heritage
Chris Tracey, Pennsylvania Natural Heritage Program

Project Goals

- To increase protection of SGCN and their habitats by helping planners in integrate conservation with land use planning

- To develop a toolkit for planners that provides easily accessible and understandable information

Resources for Planners

- SGCN and habitat information

- Potential funding sources for linking planning and conservation

- Model legal guidelines and ordinances in each state

- Best Management Practices

Publishing Platform

- Landscope America links to conservation planning resources in each state and nationally
- Status: demo content for VA, PA, NH available

Next Steps

- User testing of existing site

- Implement test results

- Update and improve content for VA, NH, and PA

- Load content for remaining NEAFWA states

STAYING CONNECTED
Northern Appalachians

Objectives

1. Develop data on wildlife road crossings, road infrastructure, and adjoining land cover and use patterns

2. Inform NY DOT road management plans (e.g., rights of way management, signage, fencing, culvert retrofits)

3. Develop remote model to predict potential road permeability over large areas

The Rangewide
New England Cottontail Initiative

Surveys

Habitat Model

Parcel Analysis

Landowner Contacts

Performance Database

	A	B	C	D	E	F	G	H
1	PROP_ID	PARCEL	LOT	ACRES	MAIL	WRKSHOP	VISIT	ACRES CONSERVED
2	110-1-6	8172	8657	518.0	yes	no	no	0
		6817	1439	479.3	yes	no	yes	84
		8134	1984	411.8	yes	no	no	0
		6711	7567	333.4	yes	yes	yes	0
6	119-1-12	11170	3114	297.9	yes	yes	yes	15
7	112-5-15	9686	1360	224.3	yes	yes	no	0
8	104-2-28	7717	6596	219.9	yes	yes	yes	27
9	103-2-33	6983	5124	208.6	yes	no	no	0
10	103-5-1	7282	1469	207.4	yes	yes	yes	0
11	79-2-2	5691	5760	200.9	yes	yes	no	0
12	104-2-30	7720	2351	184.1	yes	yes	yes	25

Targeted Landowner Recruitment:

Business-$mart Collaborative Conservation Delivery
- Finite set of properties that support priority species
- Explicitly identify parcels
- Strategic plan for multiple contacts
- Address compliance and eligibility a priori
- Delegate marketing, advertising, technical sales, and delivery
- Commitment to gradually "win their hearts and minds"

1 Research and Development
- Design and adapt incentives and conservation practices to conserve a targeted resource, such as habitat for endangered species

2 Marketing
- Use analytical technology to identify and characterize landowners (the "market") that may be recruited to benefit a target resource

3 Advertising
- Use diverse broadcast and direct media to provide information about conservation and to appeal to values relevant to the targeted market

4 Technical Sales
- Employ technical sales expertise that is versed in land and natural resource transactions and restoration concepts

5 Delivery
- Develop efficient mechanisms to deliver conservation to new recruits—minimize waiting, avoid "delivery failure", ensure quality control

6 Business Information System
- Track real-time spatial information on the status of sales and delivery to measure success and adapt the business model and products being delivered

New England Cottontail:

An explicit strategy to promote

Conservation Adoption

by people in the right locations.

- Provide tools and strategy to key partners
- Integrate **TLR** into NRCS, PFW, State programs
- Sustain effort to inform partners and recruit landowners

New Hampshire Targeted Landowner Recruitment Pilot Study
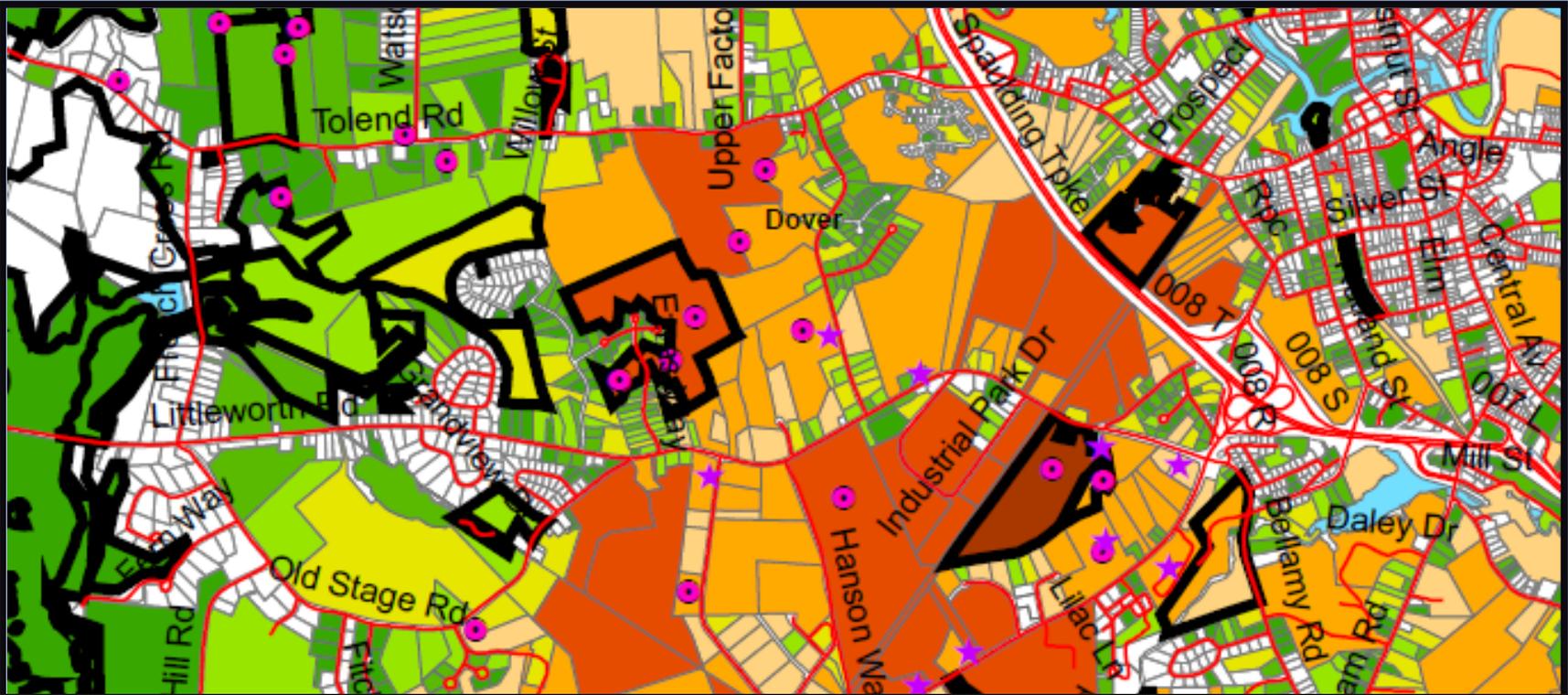
Recruitment Summary Statistics after YEAR 1

• In total, 389 properties were evaluated using the targeted recruitment method based on NHFG parcel analysis;

• 111 properties were rejected because of obvious conflicts or landuse change;

• 278 received direct mailing;

• 39 landowners engaged in serious discussion about conversation either via phone or site visit;

• 7 were not interested and 2 did not have suitable habitat;

• 22 landowners are interested in NEC conservation, but a project has not been clearly defined yet;

• 7 new projects are developing;

• 1 project is complete.

Focus on Action Delivery:
How will we most efficiently put conservation on the ground?

Landscape Scale Habitat Initiatives (formerly RCN TOPIC 7)
- Northeast Regional Connectivity Assessment Project (RCN 2007-2)
- Proposal to Establish a Regional Initiative for Biomass Energy Development for Early-Succession SGCN in the Northeast (RCN 2007-7)
- Implementing Bird Action Plans for Shrubland Dependents in the Northeast (RCN 2007-8)

Design & Implement Conservation Strategies for SGCN (RCN TOPIC 5)
- Rangewide New England Cottontail Initiative (Comp. SWG 2009 and 2011)

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A Regional Initiative to Support Biomass Energy Development Practices Benefitting Early-Succession SGCN
in the Northeast

Scott D. Klopfer

Conservation Management Institute, Virginia Tech

Biomass practices

- Examine process (planting, management, harvest impacts)

SGCNs

- Look at SGCN needs and status

Evaluate impacts

Total net SGCN

positively impacted - # negatively impacted

11 positive – 19 negative = -8

All SGCN (470)	Existing Land Cover				
	Row Crop	Mature Deciduous	Mature Coniferous	Shrubland / Young forest	Pasture / Hay
Native NWSG mix	95	-71	-1	32	95
Monoculture grass (dedicated)	28	-71	-1	22	0
Dedicated mono. deciduous woody	118	-103	-33	-57	118
Dedicated mono. coniferous woody	55	-124	16	-35	55
Native early successional	73	-26	44	0	73
Thinned timber stand	234	16	93	103	234

Summary points

- New biomass activities that involve planting grass or woody material should be focused on existing row crop or pasture land.

- The best option for forested systems is to utilize practices that result in native regeneration and decrease fragmentation

- Wildlife managers and biologists must work cooperatively with biomass developers early in the process

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New England Cottontail:
An explicit strategy to promote

Action Delivery

efficiently at landscape scale.

- Provide standard restoration planning template to all partners
- Employ large-scale commercial vegetation management vendor

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New England Cottontail:
An explicit strategy to promote

Action Delivery

efficiently at landscape scale.

- Focus Area management teams meet monthly to review projects
- Specific projects are delegated to the best-fit partner
- Funding is diverse, so eligibility is broad
- Partners track progress in common units

<u>6 MONTHS</u> after distribution of parcel maps and implementation TLR:

Table 2. NEC accomplishments by FUNDING

FUNDING SOURCE	ACRES
C-SWG,NH, MA, CT, WMI	1442.7
NFWF,WCS*	752.9
WHIP,OTHER	550.7
WHIP,USFWS-PFW	162.1
USFWS-PFW**	146.8
WRP,OTHER	105
USFWS-NWR**	95
OTHER	69
MITIGATION	24
DONATION	16
TOTAL	3364.2

* up to 200 acres not reported.

** estimated up to 100 acres not reported each.

Table 1. NEC accomplishments by STATUS

STATUS OF ACTION	ACRES
Complete/In Progress	578
Under Contract	1261
Planned/Pending	914
Initial Contact	611
TOTAL	3364

Note: up to 400 planned acres not reported

Conservation Design and Delivery LCC Needs:
- Vulnerability of coastal wetlands and beaches to sea level rise and other anthropogenic stressors (NALCC)
- Assessment of the influence of forest condition and management on regional habitat capability and connectivity (NALCC)
- Assessments of current and future status of landscape connectivity (NALCC)
- Identifying focal areas for amphibian and reptile conservation (NALCC)
- Best management practices for vernal pool dependent herpetofauna (NALCC)
- Adaptive management framework for representative species (NALCC)
- Landscape and climate change impacts on cultural or tribal resources (UMGLLCC)
- Strategies for reestablishing ecological connectivity in fragmented landscapes (UMGLLCC)
- Projects which explore the social and human dimensions of natural resource management decision-making (UMGLLCC)
- Need for an agreed upon model to predict future sea level rise (all coastal LCCs)

Survey Question: What priority do you think should be given to each of the following *conservation strategy adaptations* to achieve regional conservation in the Northeast?

**Mean scores rank in order where
1.00 to 1.49 = Utmost priority
1.50 to 2.49 = High priority
2.50 to 3.49 = Medium priority
3.50 to 4.00 = Low priority**

Item	Mean
Q3f. Develop information to guide local land use decisions.	2.12
Q3c. Design conservation for maximum multi-species benefit and resolve conflicts among species.	2.12
Q3b. Analyze the feasibility of actions with respect to human dimensions (e.g., economics, demographics).	2.25
Q3a. Use of forecasting tools to project changes to determine where to implement actions.	2.38
Q3e. Develop spatial and nonspatial decision support tools to guide actions.	2.39
Q3g. Define a strategy for distributing tools and soliciting feedback from stakeholders.	2.47
Q3h. Compile new data regularly on conserved and managed lands.	2.50
Q3d. Translate all spatially explicit plans into relevant units of land control.	2.66

Mean

Survey responses:
conservation strategy adaptations

Purpose (why)

- Protect the best, manage the rest

Techniques (how)

- Incorporate real engagement of private lands managers
- Cater towards specific needs of highest priority species
- Managing habitat will be easier than managing species and will provide for species
- Compile data from unconserved lands for comparison (tracking land that is managed is medium priority)
- Too much money and emphasis on marketing analyses which are not helpful
- Give high priority to spatial forecasting in coastal and some riverine areas

Survey Question: What priority do you think should be given to each of the following activities to deliver _on-the-ground conservation_?

Mean scores rank in order where
1.00 to 1.49 = Utmost priority
1.50 to 2.49 = High priority
2.50 to 3.49 = Medium priority
3.50 to 4.00 = Low priority

Activity	Mean
Q4a. Explicit strategies to recruit specific landowner/programs to adopt prescribed practices.	2.06
Q4b. Technical assistance to land managers.	2.13
Q4e. Strategic communications to engage local collaborative conservation partnerships.	2.15
Q4d. Creation of efficiencies of scale in delivering habitat conservation.	2.25
Q4c. Assessment of barriers or limitations for landowner and program implementation.	2.29
Q4f. Best management practice development.	2.31
Q4g. Land management database development to track implemented projects.	2.45

Survey responses: *on-the-ground conservation*

Purpose (why)
- Focus on implementation not how to do conservation

Techniques (how)
- Have a good perspective on BMP effectiveness (use and add to manuals)
- Market products to influence choices

Barriers/challenges
- Resources to conduct many efforts

Session 4: From Conservation Design to Delivery

Review the tasks/process for the framework elements

Ask: What do we need to do?

LCC Science Needs:
- Vulnerability of coastal wetlands and beaches to sea level rise and other anthropogenic stressors (NALCC)
- Assessment of the influence of forest condition and management on regional habitat capability and connectivity (NALCC)
- Assessments of current and future status of landscape connectivity (NALCC)
- Identifying focal areas for amphibian and reptile conservation (NALCC)
- Best management practices for vernal pool dependent herpetofauna (NALCC)
- Habitat mapping and modeling at the NALCC scale (NALCC)-correct category?
- Adaptive management framework for representative species (NALCC)
- Landscape and climate change impacts on cultural or tribal resources (UMGLLCC)
- Strategies for reestablishing ecological connectivity in fragmented landscapes (UMGLLCC)
- Projects which explore the social and human dimensions of natural resource management decision-making (UMGLLCC)

Session 4: From Conservation Design to Delivery

Discussion Questions:

1. What are the highest priority projects or needs for advancing conservation design and delivery?
2. Specifically, what are the critical decisions you are making, what regional design tools do you need to help you make them, and what format/scale do they need to be in?
3. Who are the key members of the conservation community who can address these priorities and what roles are best suited to RCN and LCCs?
4. What is value added of regional conservation design tools? What additional work needs to be done to make existing tools more useful?