



The Northeast Association of Fish and Wildlife Resource Agencies

TO: Participants in the NE Monitoring and Performance Reporting Project
FROM: Tracey Tomajer, NYSDEC
Jon Kart, VTFWD
SUBJECT: Follow-up to Albany Workshop and Charge to Workgroups
DATE: 27 July 2007

We are writing to follow-up on the June 26-27 workshop and to clarify the charge to the workgroups going forward.

UPDATE ON ANTICIPATED PRODUCTS OF THIS PROCESS

As stated in previous communications, we currently anticipate three major products emerging from this process:

- 1. NE Regional Monitoring and Performance Reporting Framework** -- An outline of how the Northeast States can track status of targets and effectiveness of State Wildlife Plans and Grants over time. We have attached a draft framework document for your review.
- 2. Model Report to Decision Makers** -- As one output of this framework, we would like to deliver a model report that states can use when reporting to key decision makers. By the end of this process, we hope to have a detailed mockup of what this report might look like.
- 3. Process Report** -- Other states/regions are interested in what we are doing. To this end, we plan to produce a brief report about the process we are going through.

CHARGE TO TARGET STATUS WORKGROUPS

We are forming 8 workgroups that will focus on refining draft indicators to assess the status of the 8 targets that we identified in Albany. Each workgroup will be responsible for filling out the attached template for their assigned target. This template focuses on the key indicators that are needed to assess the status of your target as well as the existing data sources for these indicators.

These templates will need to be completed to the best of your group's ability by September 18. We recognize this is a tight time frame (especially given August vacations); please understand that your group's product does not have to be incredibly complex or perfect -- we are looking for a solid starting point. We anticipate that each group should be able to complete their work with a few conference calls, supplemented with additional between-call individual work. There may also be some follow-up work needed after the September workshop.

The attached spreadsheet lists the current coordinators and members of each target group. If you are interested and able to join a group (especially those underrepresented like Unique Habitats and Highly Migratory Species), please contact the appropriate lead.

CHARGE TO EFFECTIVENESS MEASURES WORKGROUP

The effectiveness measures workgroup will be responsible for proposing a methodology for measuring and reporting strategy effectiveness across the Northeast Region. In particular, it will focus on identifying key strategies, determining what data needs to be collected for each strategy, and how that data will be shared.

If you are interested in joining this group, please contact the coordinator.

PROPOSED TIMELINE FOR THE OVERALL PROCESS

The draft timeline for the NE Monitoring and Performance Reporting Framework is as follows:

January 2007: Initiation of project to develop ecological indicators and performance measures for the NE Region.

June 2007: Workshop 1 held in Albany, NY to develop a list of targets, draft indicators, and measures, and provide an introduction to strategy effectiveness measures.

July – September 2007: Working groups fill out data templates on indicators of target status. A separate group will work on effectiveness measures.

September 18, 2007: Deadline for working groups to complete draft templates and create a PowerPoint presentation for Workshop 2.

September 25-26 2007: Workshop 2 in Rensselaerville, NY to vet and finalize the draft templates for targets and effectiveness measures. This workshop can include steering committee members, one representative from each working group not represented by a steering committee member, and key outside experts who can provide feedback.

October – December 2007: Workgroups reconvene if needed to address comments from Workshop 2, finalize remaining issues, and write up a draft framework. Review of draft framework by NEAFWA wildlife diversity technical committee, administrators and directors.

December 31, 2007: NE Monitoring and Performance Reporting Framework completed, including process report.

2008: Implementation of Framework

We value your participation in this process and look forward to working with you. Please do not hesitate to contact us with any questions or concerns..

Tracey Tomajer, NYSDEC, : 518-402-8877
Jon Kart, VFWD: 802-241-3652



The Northeast Association of Fish and Wildlife Resource Agencies

July 3, 2007

From: Tracey Tomajer, NYSDEC

Jon Kart, VTFWD

To: Workshop Attendees

Re: The NE Monitoring and Performance Reporting Workshop, June 26-27, Albany, NY

We trust that you made it home safely from the workshop in Albany despite the inclement weather. We are writing to both thank you for attending the workshop and to lay out the next steps in this process.

A. SUMMARY OF JUNE WORKSHOP

Attached to this message, you will find a summary of the main outputs of the plenary and breakout sessions from the workshop. In addition, you can download the presentations and other workshop materials (using Internet Explorer) from:

<ftp://fosonline.org> username: fospublic pwd: success go to the "NEAFWA Meeting" folder

If you experience technical difficulty, please contact Vinaya Swaminathan at vinaya@fosonline.org

We will also be producing a more detailed report of the workshop in the coming weeks.

B. OVERALL PROCESS

To follow up on the discussions near the close of the workshop regarding the process guiding this project and anticipated products, we would like to offer our vision here, but certainly welcome feedback and comments.

1. **Goals for this Process:** We envision that this process will produce three things by early 2008:
 - A regional framework for monitoring the status of targets ('the resources', i.e., fish, wildlife, habitats) identified by state delegates and collaborators during the workshop, and measuring the effectiveness of our conservation actions
 - A template for performance reporting to inform key federal and state decision makers and funders about the progress of State Wildlife Grant and Action Plan programs in the 13 Northeastern states and the District of Columbia. This report will be directly derived from the above framework, and can be submitted individually by states or collectively as a region.
 - A report on the process that we used on this project that can be provided to other interested states and regions.

In the workshop, we emphasized the "performance report" in order to keep the focus on regional/landscape level targets and a minimum number of indicators to track to meet reporting requirements. However, we must first produce the technical monitoring framework that states in the Northeast can use in order to generate such reports over time.

2. **Timeline of Process:** To produce the three documents listed above, we envision the following process going forward:

- We collectively work in small groups over the next 2.5 months (July – mid-September) to refine the draft indicators and measures identified for each target at the Albany workshop, and develop a draft monitoring framework. See Point 3 below for how we propose to accomplish this task.
- We then present these products to a small workshop of monitoring and policy staff who can advise on whether our proposed framework is scientifically sound and is best structured to report performance to our key decision maker and funder audiences. This second workshop will be held at the end of September (potentially 9/25-26 outside of Albany).
- We further refine the monitoring framework and performance report template based on feedback and develop a final recommendation by the end of October or the beginning of November.
- We present the final draft framework to the State Directors and other key staff

3. **Proposal for Temporary Working Groups:** No one person or state will have the time to do all this work on their own. At the same time, we also feel that this is not a hugely onerous process—think how much we accomplished in one-hour breakout groups. To this end, we would like to propose forming some temporary working groups of state, federal, NGO, and academia staff that could help move development of the framework forward over the next few months.

We envision forming separate groups for each of our eight targets as well as a group or two to address effectiveness measures. Each group will have a "coordinator" and a few additional "members." We think each group might hold 2-3 phone conference calls and then do a bit of work between calls.

Each group will be tasked with taking the materials developed at the Albany workshop for their target, and then refining them to produce a draft monitoring framework, elements of which are listed in Point 4. Each group can also send one person to present the results of their work to the September workshop.

4. **Elements of Technical Monitoring Framework:** The key to the above process is going to be taking the draft indicators and measures that were identified at the Albany workshop and making them operational. Specifically, we need to have:

Status Measures - For Each Target

- Target name
- Indicators to be collected for each target that are suitable, practical, and cost-effective.
- Identification of existing monitoring programs applicable to our efforts
- Existing data sets (management and storage) that can be used for our purposes
- Identify data gaps and identify who will take the lead in collecting, analyzing, and reporting these data
- Outline for what the report(s) on this target will contain (condition, threats, trends, etc)

Effectiveness Measures

- Selection of specific actions/strategies that we want to collectively report on
- Development of common results chains
- Identification of indicators to collect
- Description of specific data sets that can be used to assess these indicators
- Identify who will take the lead in collecting, analyzing, and reporting information needed for data gaps
- -Outline for what the report(s) on these strategies and outcomes will contain

C. NEXT STEPS

1. Send us comments on this e-mail by July 13
2. Please also tell us which of the following target workgroups you would like to be a part of—or if you would be willing to serve as a coordinator for the group:
 - a. Forests – Steve Fuller, NH
 - b. Freshwater Wetlands – Tracey Tomajer, NY
 - c. Freshwater Streams and Rivers
 - d. Lakes and Ponds – Jon Kart, VT
 - e. Managed Grasslands and Shrublands
 - f. Unique habitats in the Northeast
 - g. Highly migratory species
 - h. Regionally Significant SGCN
 - i. Effectiveness measures
3. The following key technical staff who can greatly assist in moving the project forward were identified at the workshop:

Brian Mitchell, NPS, NE Inventory and Monitoring Coordinator
Willa Nehlson (or counterpart), USFWS, Fisheries/Aquatics
Mark Anderson, TNC, Landscape Ecology
Chip Scott, USFS, NE Forest Monitoring
Jim McKenna, USGS, Aquatic GAP and NFHI
Paul Seelbach, Michigan, Landscape scale aquatics
James Gibbs, SUNY EST, Biodiversity/Ecological Monitoring
Paul Dresler, USGS, NBII
Don Faber-Langendoen, NatureServe

They are aware of our project and willing to assist in the development of a framework.

Please let us know if there are other key staff (federal, state, NGOs, academia) who should be involved in the groups.

4. Please take a few minutes to brief your Director and other staff that you work with about the status of this project.

Again, we thank you for your hard work and participation. Our common goals will help us develop a monitoring and reporting framework that meets our multiple needs.

If you have any questions regarding this email, please contact:

Tracey Tomajer , NYSDEC: 518-402-8877
Jon Kart, VFWD; 802-241-3652

Products from the Northeast Monitoring and Performance Reporting Framework Initial Workshop

June 26th & 27th, 2007

Albany, NY



Foundations of Success

18 July 2007

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Group Exercise to Determine Questions to Address

The following were the changes made in the discussion during the overview presentation.

Status Questions

1. How are wildlife & fish in the Northeast States doing?
 - SGCN /habitats/ecological processes
 - Common species (keep them common)
2. How are threats to wildlife & fish & people changing?

Effectiveness Questions

1. Are the State Wildlife Grants and Plans having their intended impact?
2. How can we improve these Plans and Grants?
 - Given constraints of funding?
 - Where money is spent, are we efficient and making progress?
 - We need to make a case for greater/more dedicated funding for this work.
 - We have the accounting system – we need to show relative progress.

Group Exercise to Select Targets (Tue PM)

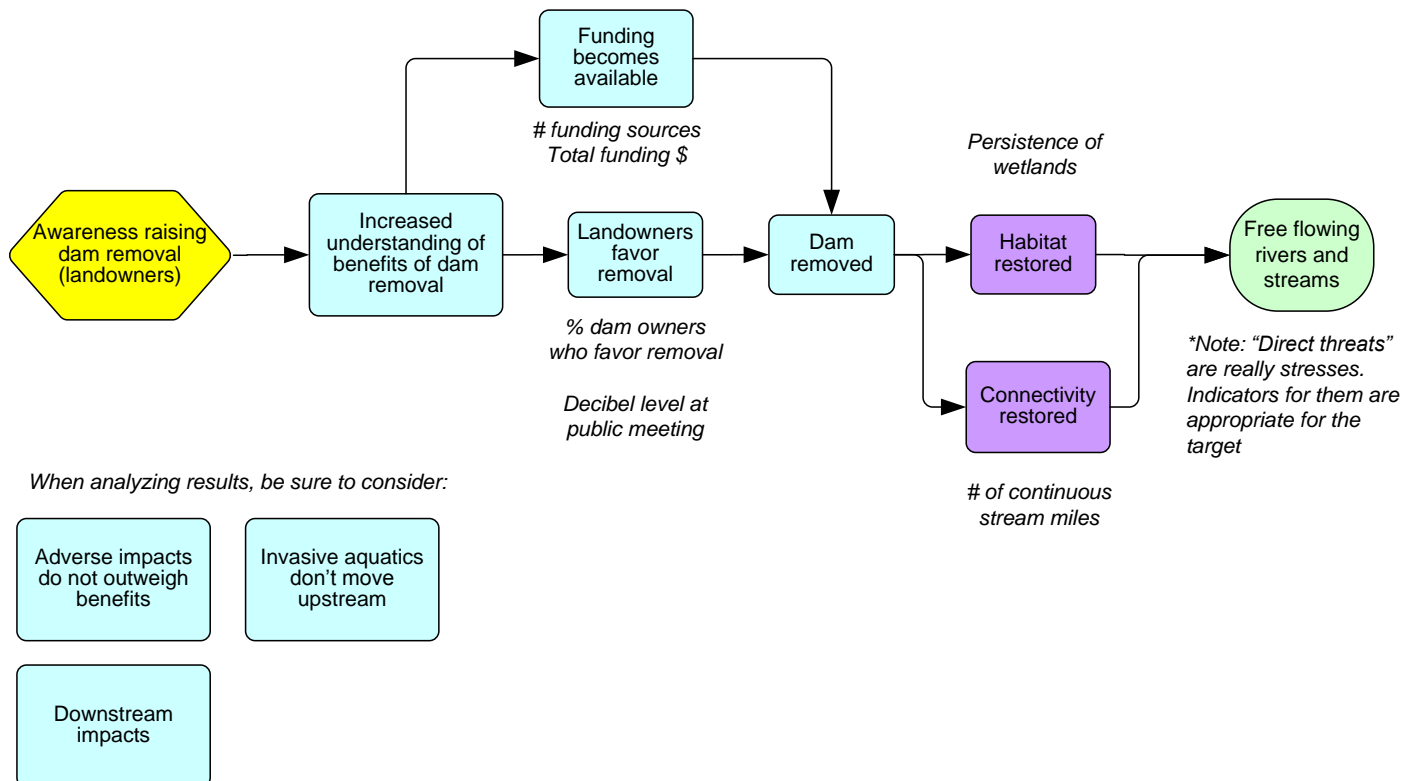
Target headings are at the top of each column, with sub targets in the boxes below. The different colors denote targets listed by different groups.

FORESTS	MANAGED GRASSLANDS AND SHRUBLANDS	REGIONALLY SIGNIFICANT SGCN (NOT INCLUDED IN HABITATS)	FRESHWATER WETLANDS	UNIQUE HABITATS IN NORTHEAST	FRESHWATER STREAM AND RIVER SYSTEMS	HIGHLY MIGRATORY SPECIES	LAKE & PONDS
Deciduous/mixed forest	Woodcock	Special species problems	Wetlands	Caves & karst	Large order streams	Migratory bats	Lakes and pond communities
High elevation coniferous forest	Open uplands	Highly imperiled species	Wetlands	Unique Habitats / small patch	Cold water stream communities	Diadromous fish	Lakes & ponds
Forests	Grasslands	Allegheny wood rat	Wetlands	Caves and mines	Riverine ecosystems	Regional functions (eg linkages, connectivity)	Lakes & ponds
Mature forests	Grassland habitat	Therres et al. 1997 species	Functional nontidal wetlands	Freshwater mussels	Rivers & streams	Birds	Freshwater mussels
Early successional forests	Shrublands (managed)	Northeast endemic species	Freshwater wetlands (many types)	High elevation habitat	Coldwater streams		Lakes
Pitch pine forest	Shrub/scrub grasslands	Amphibians	Freshwater wetlands that support SGCN	High elevation habitat	Stream and riparian habitat		
Early successional forest				Rocky habitats (surface and subsurface)	Coldwater streams		
Older growth forest				High elevation communities			
Large contiguous forest				Natural grassland			
Coniferous forest (all stages)							
Hardwood forest (all stages)							

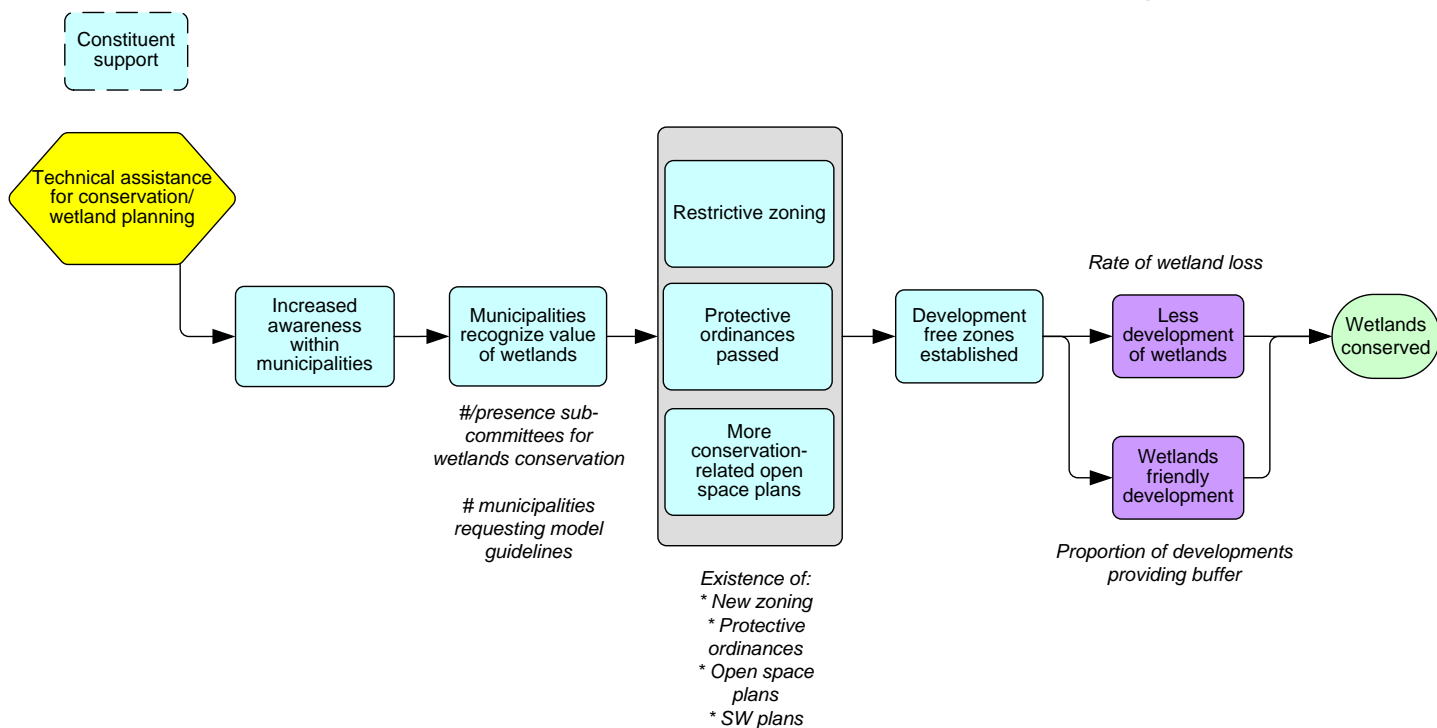
Breakout Groups to Construct Example Results Chains (Wed AM)

The following are the example results chains that breakout groups developed for various practice strategies. Yellow hexagons are strategies, blue boxes are results, purple boxes are results associated with a direct threat, and green ovals show how targets will be impacted. Potential indicators are written next to the results they could measure.

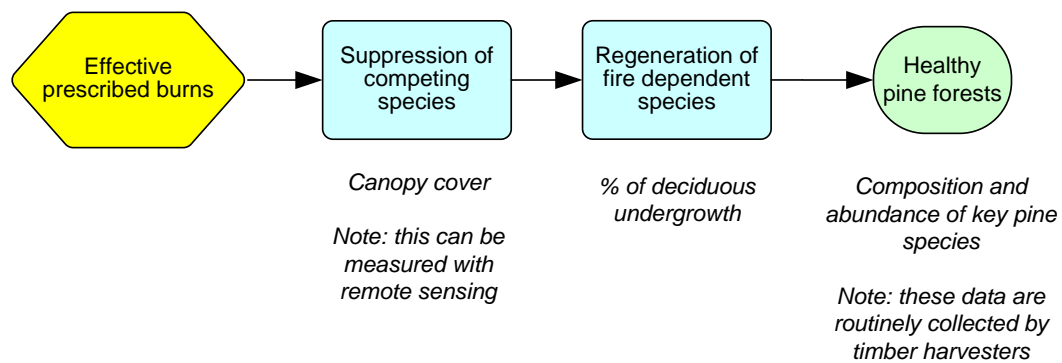
Dam Removal



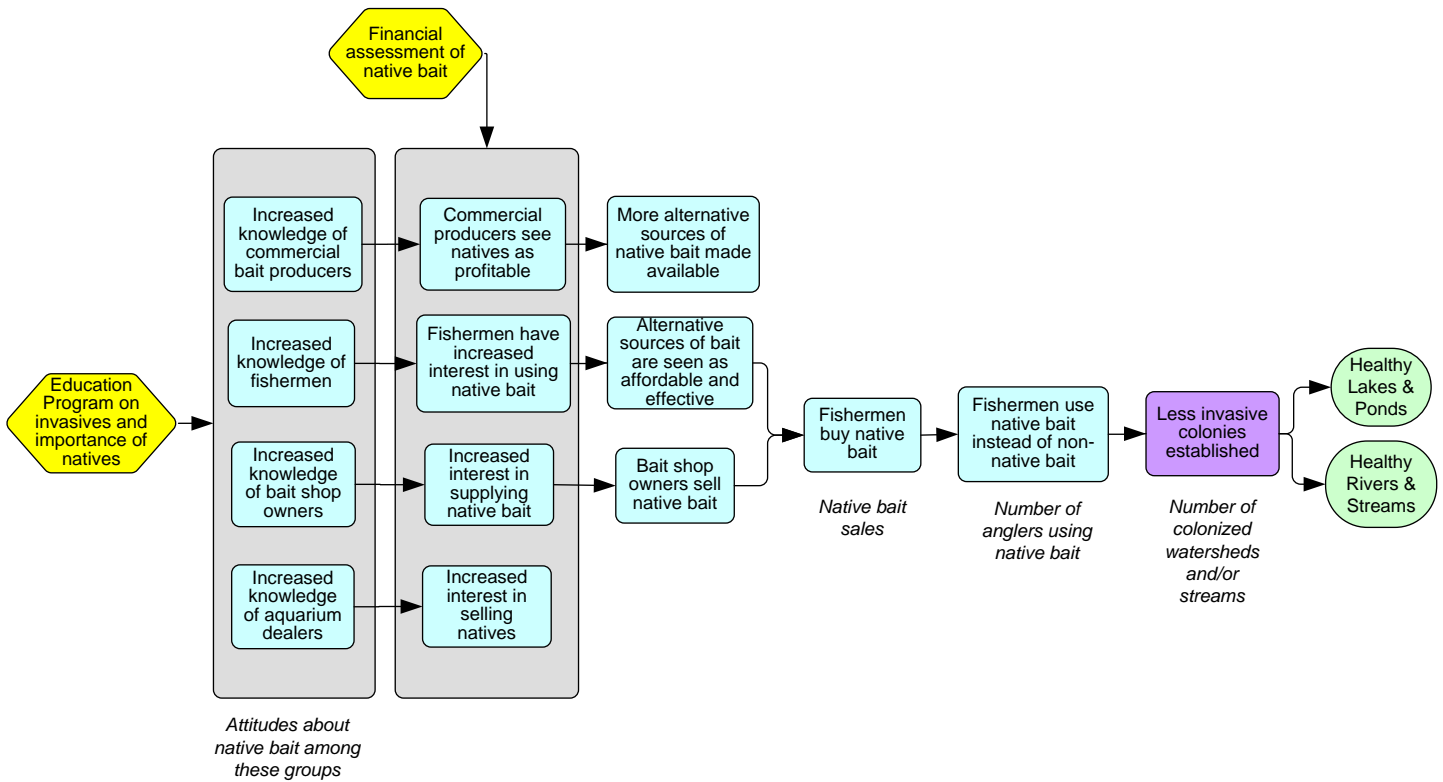
Technical Assistance for Conservation/Wetland Planning



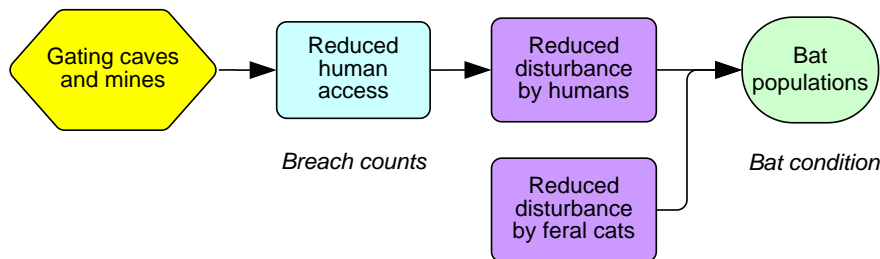
Prescribed Burns



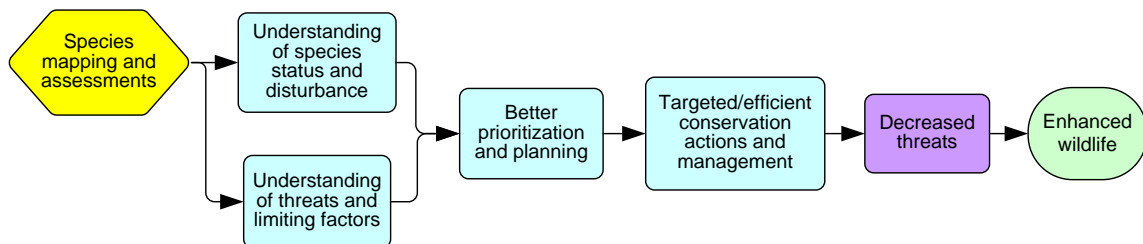
Education on Invasive vs Non-invasive Bait



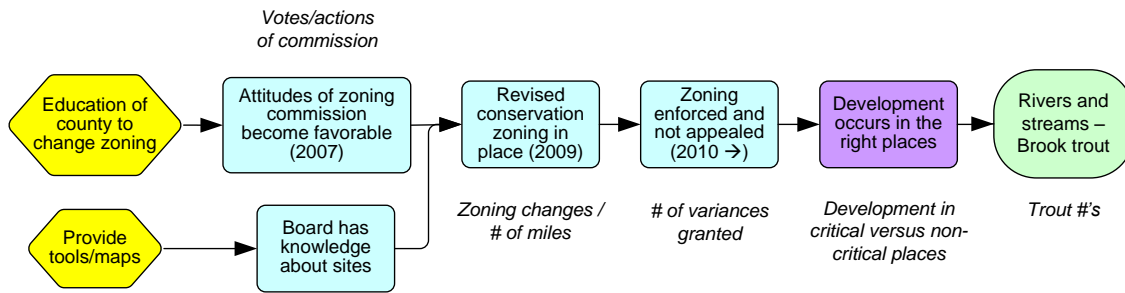
Bat Gates



Species Mapping and Assessments



Education on Zoning



Breakout Groups to Explore Indicators/Data Sources for Targets (Wed PM)

Groups in this session were instructed to:

1. Agree on the name of their target
2. If necessary, identify nested targets
3. Develop indicators/data sources
4. Mock-up a 2 page “Report to Decision Makers” on their target, and
5. Discuss next steps

Most groups were unable to complete all the tasks, but all of their work was documented. This section presents the work from these break out sessions.

Target: Lakes and Ponds

Nested Targets:

- Native fish populations
- Aquatic invertebrates
- Aquatic herps (entire life cycle in lakes and ponds)
- Loons

Key Ecological Attribute	Indicator	Data Source
Water quality <ul style="list-style-type: none"> • DO • Nutrient loading • Turbidity • pH • Toxins 	Number of lakes in each Clean Water Act category (swimmable, fishable, drinkable) % of lakes with fish consumption advisories	Lake Assoc, Local Health Dept, EPA State Health Dept
Fish spp. Composition (native)	Relative abundance of key fish spp. (tbd)	State Fisheries Agencies NGOs USFWS for Great Lakes

Trophic state	Number of lakes becoming eutrophic	USGS
Other aquatic dependent wildlife	Phytoplankton abundance and composition	
	Number of nesting loons	Loon researchers
Effect of invasives	# of invasive control permits issued	State agencies
	% of water bodies with zebra mussels	
Fluctuation of water levels	Range and frequencies of water levels of managed water bodies	Water/Electric companies Army Corps of Engineer Lake Associations
Aquatic vegetation health	% of shoreline developed	GIS/RS maps – data exists but still needs to be analyzed.

Report:

Introduction including nested target description, trophic state breakdown

1. Water quality – figure on % of lakes in each Clean Water Act category over time
2. Fish spp. composition – figure showing changes in number of lakes classed as having healthy populations of key species (tbd)
3. Profile of the Loon – figure of changes in # of nesting pairs over time)

Target: *Highly Migratory Species*

Nested Targets:

- Bats
- Birds
- Diadromous Fish
- Inverts – butterflies, dragonflies
- Regional functions (eg linkages, connectivity)

Key Ecological Attribute	Indicator	Data source
Corridors, stop-over habitats	Migratory routes or bird, bat, and Lepidoptera spp. (tbd)	Radar analysis Lepidoptera society
Conflict with wind and communications powerlines	# bird, bat kills from powerlines	
Distant (non NE) habitat	Presence/absence of particular migratory bird	MAPS eBird

	spp at key locations	State Point Counts
	Commercial fishing rates	NMFS
	Number of fish returning to freshwater systems (values over time can suggest increasing or decreasing return rates)	State agencies Index NMFS
	Bat effective population size overtime	Interstate genetic work

Report:

Include a map of the western hemisphere with NE highlighted and major migratory routes/species outlined to show importance of this area for highly migratory species.

Exemplary Case 1: One bird species

- Major threats
- Trends in data/indicators
- Necessary actions/next steps

Exemplary Case 2: One fish species

- Major threats
- Trends in data/indicators
- Necessary actions/next steps

Overview of Bats

- Major threats – power lines
- Information gaps
- Actions

Overview of Invertebrates

- Major threats
- Information gaps
- Actions

Target: Forests

Nested Targets:

Can use conif-decid-mixed (based on NLCD) or break out into major veg systems (group recommendation, but needs to be clarified later based on regional habitat mapping project) –

- Oak-Pine
- Spruce-Fir
- Mixed Deciduous (incl central hardwoods, northern hardwoods)

- Bottomland & Floodplain (mesic, but not wetlands/flooded)

Key Ecological Attribute	Indicators	Data Sources
Size		
	Land use change (protected areas)	NLCD (coarse scale) Some state data
	Area - % forest landscape	
	Size & distribution of patches	
Context		
Fragmentation/ connectivity	Road density	TNC
	Distance to roads	
	Fragmentation index	NLCD 1992, 2002 TNC ecological land units
	Edge/area ratio	
	IFES	
	#/area buffers	
Condition		
Structure	% cover	NLCD
	Canopy height	LandFire
	Presence mosses/lichens	
	Large coarse woody debris	
	Understory	
	Distribution acc. to seral stage	
Composition	Forest types	Existing state inventories FIA NPS
Crown condition	Necrosis	NPS in parks, NE Forest Experiment Station (sugar maples, ash), USFS, state agencies
	Chlorosis	
Soil chemistry	Deposition levels of: <ul style="list-style-type: none"> • Acid • Nitrogen • Mercury 	EPA, NPS
Fish/wildlife diversity	Birds (e.g, forest interior, early seral, late seral, climax)	Breeding bird survey, point count database, Natural Heritage Programs, migratory bird surveys, etc.
	Large ranging mammals	

Target: Freshwater Wetlands

Note: The information in this section would benefit from refinements made by wetlands ecologists.

Nested Targets:

- Emergent
- Forested
- Shrub
- Bog Turtle
- Marsh Birds
- Dragon/Damselflies

Key Ecological Attribute	Indicators	Data Sources
Size		
		NWI maps (FWS)
Context		
Buffer	<ul style="list-style-type: none">• %intact buffer surrounding wetland• Distance from human influence	NLCD, MLRC
Watershed	Surrounding wetland	
	% impervious surface (threat)	
Position in watershed		
Connectivity	# Wetlands in a complex	
Condition		
Canopy Cover (forested)		LIDAR, Holyoke
Hydrology	<ul style="list-style-type: none">• Depth• Flow	ACOE, State wetland programs, USGS, NRCS
Soil Composition		
Vegetation	<ul style="list-style-type: none">• Relative abundance of key vegetative spp.• Presence/absence of invasive & exotic spp. (e.g., purple loosestrife)	Hyperspectral studies (SUNY-Albany, Clemson), NWI
Water chemistry	Dissolved Oxygen, pH, N/P	ME, DE, MD, PSU-developing monitoring protocols for wetlands
Fish/Wildlife Diversity	Relative abundance of bog turtles, marsh birds	Natural Heritage Programs, U.S. FWS, Endangered Species Programs
Biotic quality	<ul style="list-style-type: none">• Macroinvertebrate index	Natural Heritage Programs (ME)

Key Ecological Attribute	Indicators	Data Sources

Target: Unique Habitats in Northeast

Nested Targets:

- Alpine (includes high elevation)
- caves, karst
- rocky habitats
- barrens and natural grasslands
- islands, bays
- urban, suburban ?
- rare wetlands (kettle bogs, etc....if not in Wetlands)

Key Ecological Attribute	Indicator	Data source
	% managed and % protected \$ spent	
Alpines	change in tree line changes in plant phenology alpine LEPS	
Caves	protected land, gating % with more bats	
Barren	% under fire mgt # rare species LEPS endemics	

Report:

1. Patches that fall thru the cracks
2. endemism vulnerability graphic
3. Poster child feature box/story
4. Recreation value v. threats – feature box
5. Map showing distribution/location of unique habitats, each sub-target a different color
6. Rare wetlands example:

- Atlantic white cedar – flooding, hydrologic regime

Target: Regionally significant SGCN

Nested Targets:

- highly imperiled
- Allegheny woodrat
- NE endemics
- Therres, et.al.
- Amphibians
- special spp. problems

Report:

1. Introduction–keeping common species common and keeping listed spp stable or improving–Endangered species prevention; keeping species off list and getting others off
2. Our responsibility (NE) for these species
3. Working together within and across states
4. Species requiring special focus–would be poorly represented if we took a purely habitat-based approach
5. Action Box
6. “Poster Species” examples–world population range within the NE for example–one or two and can rotate from year to year

Ways to report on these: species, taxa, core responsibility species, listing status or degree of imperilment

Possible table: Therres *List (approx 20) + responsibility species (in multiple state) + federally listed species cross-referenced by states with rankings.

For each cell:

- Current Status Rating of Species (4 = very good. 1 = bad)
- Trend for the Species
- Data Source for Rating (published study, expert opinion, wild guess)
- Documentation of Rating
- Date of Last Rating
- SWG money spent on species
- Other conservation money spent on species

Then select a few of these to include in the report to OMB (essentially baseline/status information–may not have all been worked on by SWG but that should be factored in as part of the “rating matrix”.) This would be part of the “front-page of the two-page

spread. Technical committee will have to figure out the specifics and the appropriate baseline data. [rating; source; date; money spent (SWG, Sec 6, private, etc.); baseline]

	MA	VT	NH	MA	RI	etc			
Sp 1									
Sp 2									
Sp 3									
Sp 4									
etc.									

Remember status assessment isn't just SWG—it's the CWCS/WAP

Next steps:

1. compile initial list of species
2. layout the specific data needs for each state (reporting elements)
3. develop the initial summary format (and standardization)
4. distribute to states for review and comment
5. develop final protocol
6. do it (5 year cycle proposed)

Possible species to report on:

saltmarsh sharptailed sparrow (x2)
golden-winged warbler (x2)
Bicknell's thrush (x2)
red knot
cottontail (New England and Appalachian) (x2)
timber rattlesnake

Target: Freshwater Stream & River Systems

Nested Targets:

- Warm water
- Cold water

Key Ecological Attributes

- Hydrology – hydrographs
- Species composition – extirpated species (endemic to region), SGCN populations
- Biology
- Fluvial geomorphology
- Connectivity – graphically depict (lateral, longitudinal, vertical, temporal)

- Water quality
- Extent and health of riparian area

Indicators (bolded indicators are final selections)

1. Deviations from natural flow regime
2. Permitted withdrawals
3. **# of dams (data does exist)**
4. **Impediments to fish passage (data does exist)**
5. **IBI (data does exist)**
6. **% impervious surface in watershed**
7. **Miles of riverine corridor available (data does exist)**
8. **Miles of connected stream reach (data does exist)**
9. Change in landuse/landcover
10. Temperature fluctuation (change in average min/max)
11. % of forest in riparian area
12. Invertebrate index (Hilsenhoff index)
13. Invasive species (occurrence/composition)
14. **Change in historical distribution of brook trout (data does exist)**
15. Access to floodplain
16. Stream meander frequency
17. Sediment load
18. Indices of substrate composition
19. 303d miles of impacted
20. Mussel population (change in diversity of species)
21. Woodcock/Louisiana waterthrush
22. Riparian fauna (charismatic)
23. Amount of developed shoreline
24. % conversion from lentic to lotic
25. Stream salamanders
26. Miles of stream protected

Note: characterize relationships between these indicators

Report:

“Delta Blues”

1. Connectivity (all animals, aquatic life)
 - Longitudinal – fish passage; dams
 - Lateral – floodplain access
 - Stream blockage
2. Hydrology
 - Hydrographs of disrupted streams
 - # of miles of natural flow regime
 - Hectares/acres of impervious surface
3. Biology/Species
 - Brook trout
 - Mussel population
 - Extirpated species

- Species distribution
- 4. Geomorphology
 - Stream channelization
 - Lentic – lotic
- 5. Water quality
 - Stream temperature
 - 303d indicator

Target: Managed Grasslands& Shrublands

Nested Targets:

- Natural
- Anthropogenic
- Grassland bird species

Key Ecological Attitudes

- Size
- Condition
- Structure
- Management
- Connectivity
- Composition
- Wildlife community structure

Indicators

1. Ratio of edge to area
2. Acres
3. Wildlife species richness
4. Commercially managed?
5. Use of grassland (eg, pasture, hayland)?
6. Native versus non-native vegetation
7. Landscape context
8. Proximity to roads and powerlines
9. Proximity of other grasslands/shrublands
10. wildlife community structure
 - a. ground nesting birds
 - b. reptiles
 - c. invertebrates
 - d. mammals
 - e. shrub nesting birds
 - f. pollinators
 - g. nest parasites (birds)
11. Invasive species
 - a. Plants

- b. Animals
- 12. Maintained or not maintained
- 13. Ownership/easement (surrogate for protection)
- 14. Changes in landuse/land cover
 - a. Trends over time

Report:

- 1. Landscape context
- 2. Size
- 3. Changes in historic locations
- 4. Wildlife community changes (trends over time)
 - a. Birds
 - b. Northeast cottontail
- 5. Ideal state of grasslands
 - a. Anecdote of good management
- 6. Money available for grasslands/shrublands (this will tie into 5 above)
 - a. SWG
 - b. LIP
 - c. CRP
- 7. Why should we care?
 - a. Biodiversity
 - b. The region serves as a 'refuge' for some species
- 8. Species responses to CREP Management

