



The Northeast Association of Fish and Wildlife Resource Agencies

August 31, 2007

From: Steering Committee for the Northeast Monitoring & Performance Reporting Framework
To: Invitees to Workshop 2
RE: The Northeast Monitoring & Performance Reporting Framework Workshop, September 25-26, The Rensselaerville Institute, Rensselaerville, New York.

The Northeast Monitoring & Performance Reporting Framework will hold an expense-paid workshop September 25-26 in Rensselaerville, NY to review and advise whether our proposed framework for monitoring the status of targets (fish, wildlife, habitats) and effectiveness of the State Wildlife Grants is scientifically sound and is best structured to report performance to our key decision maker and funder audiences. NEAFWA state delegates and federal agency and NGO partners developed the initial framework and reporting templates at a meeting held in June 2007 in Albany, NY.

The workshop starts at 12:00pm on Tuesday, September 25 and concludes at 3:00pm Wednesday September 26. You are invited to attend because of your expertise in the monitoring arena and/or policy programs.

This memo provides background on the Framework Project, workshop specifics, and logistical information. If you have questions contact Tracey Tomajer at 518-402-8877 or tmtomaje@gw.dec.state.ny.us at your earliest convenience.

Project & Workshop Background

The Northeast Fish and Wildlife Agencies, with funding from the National Fish & Wildlife Foundation, has initiated the Northeast Monitoring & Performance Reporting Framework, a collaborative effort to determine how to best gauge and report the status of fish, wildlife, and the habitats that support them across the Northeast and the effectiveness of the actions we are taking to conserve them.

As an initial step in this process, we convened a workshop June 26-27 in Albany, NY to draw on the experience of those most familiar with the state of fish and wildlife in the Northeast and the work of the Fish and Wildlife Agencies—state biologists, planners, and managers, and key federal and non-governmental organization partners—to begin the development of a monitoring/reporting framework, and identify potential targets, indicators and measures for Species of Greatest Conservation Need (SGCN), habitats, threats, and strategy effectiveness at the landscape scale. A Products document from the initial workshop has been provided via e-mail for your review.

We have been working in small groups since June to refine the draft indicators and measures identified for each target at the Albany meeting, and develop a draft monitoring framework. Each working group is charged with identifying up to 5 indicators for its target and completing a template of target status for EACH indicator. Each group will present a description of their indicators, a bulleted summary of each existing data source (i.e. “metadata”) from current monitoring programs applicable to our efforts, existing data gaps, and potential issues for **future** data compilation and analysis. Please note that actual data gathering and analysis is NOT required under the auspices of this project. Our goal is to develop a standardized monitoring and reporting framework that can be used by individual states or the Northeast region from this point forward. Of course, if a group has time beyond template completion to begin gathering and analyzing data before the workshop, that won't be discouraged.

A separate effectiveness measures working group is developing a methodology for measuring and reporting strategy effectiveness across the Northeast region. It will focus on identifying key strategies, determining what data needs to be collected in the future for each strategy, and how that data will be shared.

Workshop Objectives

- Review the progress made by working groups,
- Agree on the final format of the framework and model report to decision makers
- Discuss and recommend outreach strategies for the project
- Identify data management issues
- Identify next steps

Workshop Logistics

The workshop will be held at the Rensselaerville Institute in Rensselaerville, New York, which is located 27 miles southwest of Albany. Visit the Institute's website for more information about the meeting facilities and recreational opportunities (hiking, boating, tennis, etc.):

www.RIConferenceCenter.com.

All costs will be covered by the project grant. Lodging (all single rooms) will be arranged for everyone staying overnight and all meals will be provided on-site. There is no need to make separate reservations with the Institute. For those who choose to pay their own way at the workshop, costs (including all meeting room, break out refreshments, gratuity and service fees) are:

- Conference Fee - \$118 (plus tax)
- Lodging - \$103 (plus tax)

Participants can also be reimbursed for travel costs to and from the workshop at the government per diem rate. See below for details.

Registration

To register, please contact Tracey Tomajer at 518-402-8877, or tmtomaje@gw.dec.state.ny.us, by **September 14, 2007**. Lodging and meals can NOT be guaranteed after this date. Vegetarian meals will be available; please indicate if you have other special food requests.

Transportation

If you are driving: Directions can be found at <http://www.riconferencecenter.com/directions.html>

If you are flying, taking a bus, or taking the train: Fill out the attached Travel Form and return it to Tracey Tomajer at tmtomaje@gw.dec.state.ny.us - **By September 14, 2007**. A car service will be arranged to and from the Albany airport, train station, or bus station. All costs will be covered by the project grant.

In-Kind Match

Match for this project will be met using participant time and mileage. A match form is attached; please bring it with you to the meeting. To complete the form you will need to know your daily salary and benefits rate. This information is necessary to calculate and document our match commitments. NOTE: All participants, regardless of funding source, are eligible to provide match.

Expense Reimbursement

The Association of Fish and Wildlife Agencies (AFWA) is administering the billing and reimbursement process. Reimbursement for travel costs to and from the workshop (meals, lodging, airline/bus/train tickets, gas, tolls, etc.) will be based on actual receipts. A reimbursement form and instructions will be sent after the workshop.

Questions

If you have any questions, please contact:

Tracey Tomajer, NYSDEC: Division of Fish, Wildlife, & Marine Resources at
tmtomaje@gw.dec.state.ny.us, 518-402-8877

We look forward to seeing you in Rensselaerville!

Northeast Monitoring and Performance Reporting Framework

Second Meeting – September 25 & 26 2007, Rensselaerville, NY

Version: 29 August 2007

Meeting Objectives

1. Review progress made by working groups and provide feedback/standardize
2. Agree on what final products will look like
3. Agree on roll-out and outreach strategies for the overall initiative
4. Develop thinking on data management and sharing
5. Agree on next steps

Working Agenda

Note that this agenda is constructed to allow travel to the site on the morning of the first day.

Time	Session (Facilitator)	Desired Outputs(s)	Location
Day 1 (9/25)			
12:00 – 1:00	Lunch	Get folks there on time	Carriage House
1:00 – 2:00	Introduction - Welcome (Tracey & Jon) - Overview (Tracey & Jon) - Introductions (FOS) - Review Meeting Agenda (FOS)	Introduce participants	Straus Meeting Room
2:00 – 4:30 (includes 30 min break)	Presentations from Working Groups - Each group gets 10 min to present followed by 10 min for feedback and discussion (We have 9 total groups – we will do 6 this afternoon and 3 the next morning to break things up a bit)	Feedback on each group's work to date	
4:30 – 5:30	Plenary Discussion of Reports from this Process - Overall framework - Report to decision makers - Process report	Agree on what the reports will look like	
6:00 – 7:30	Social hour and dinner		Carriage House
7:30	Evening Presentations or Activities?? Extra Time if Needed??		

Time	Session (Facilitator)	Desired Outputs(s)	Location
Day 2 (9/26)			
7:30 – 8:30	Breakfast		Carriage House
8:30 – 8:45	Recap and Review		Straus Meeting Room
8:45 – 10:00	Presentations from Working Groups - Each group gets 10 min to present followed by 10 min for feedback and discussion (Three remaining groups)	Feedback on each group's work to date	
10:00 – 10:30	Break		
10:30 – 12:00	Discuss Roll Out Strategy - Key audiences - Barriers and opportunities - Steps that we need to take		
12:00 – 1:00	Lunch		Carriage House
1:00 – 2:30	Data Management Issues - Data sets - Potential data bases - Next steps	Figure out general data management needs	Straus Meeting Room
2:30 – 3:00	Discuss Next Steps	Where do we go from here?	
3:00	Meeting Close		

DRAFT – DRAFT – DRAFT

Workshop Products and Notes

Northeast Monitoring and Performance Reporting Framework

Second Meeting – September 25 & 26 2007, Rensselaerville, NY

Draft



**Foundations of Success (FOS) and
Northeast Association of Fish and Wildlife Agencies (NEAFWA)**

9 October 2007

Contents

Workshop Products and Notes	1
Northeast Monitoring and Performance Reporting Framework	1
<i>Draft</i>	1
Foundations of Success (FOS) and	1
Northeast Association of Fish and Wildlife Agencies (NEAFWA).....	1
9 October 2007.....	1
Contents	2
I. Participants	1
II. Working Group Presentations and Feedback Stations	1
Panelists: Jon Kart, Genevieve LaRouche, and Mark Anderson	1
Freshwater Streams and Rivers.....	1
Forests.....	4
Grasslands and Shrublands	7
Panelists: Dan Brauning, Mary Anne Thiesing, and Don Faber-Langendoen.....	7
SGCN.....	7
Unique Habitats of the NE.....	9
Effectiveness.....	10
Panelists: Dave Day, Tim Tear, and Brian Mitchell	11
Lakes and Ponds	11
Highly Migratory Wildlife.....	12
Freshwater Wetlands.....	12
IV. Plenary Discussion on Reports From This Process	14
V. Discussion of Roll-out Strategy	17
VI. Data Management Break-out Session.....	18
Introduction (Mark Anderson)	18
Indicator: Forest extent by type	18
Indicator: Bird abundance (focus on Forests)	19
Indicator: Presence/Absence of indicator species in unique habitats.....	19
VII. Next Steps	20

I. Participants

Jon Kart, VFWS
Mary Anne Thiesing, USEPA Region II NY
Dave Day, PA Fish and Boat Commission
Don Faber-Langendoen – NatureServe
Tracey Tomajer, NYSDEC
George Matula, ME Dept. of Inland Fisheries
Doug Norton, USEPA Office of Water
John Kanter, NH Fish and Game
Dan Brauning, PA Game
Brian Mitchell, NPS
Genevieve Pullis-LaRouche, USFWS
Ron Essig, USFWS
Mark Anderson, Director Cons Science TNC
Jim McKenna, USGS office in Portland, ME
Colin Beier, SUNY ESF faculty
Jeff Tash, NH Natural Heritage Bureau (filling in for Steve Fuller)
Paul Seelbach, Michigan
Tim Tear, TNC
Nick Salafsky, FOS
Caroline Stem, FOS
Vinaya Swaminathan, FOS

II. Working Group Presentations and Feedback Stations

(For details on each presentation, please refer to the full PowerPoint files that will be made available on the FOS ftp site.)

Panelists: Jon Kart, Genevieve LaRouche, and Mark Anderson

Freshwater Streams and Rivers

Presenter: Dave Day

Indicators:

1. IBI (Index of Biotic Integrity)
2. % of impervious surface
3. Miles of riverine corridor available in watershed
4. Miles of connected stream reach
5. Impediments to fish passage
6. # of dams
7. Change in historical distribution of northern eastern brook trout

Comments:

- Channelization taken into acct?? index of watershed integrity, which combines a number of factors pulled off of remote sensing data. Dave replies that this is difficult to get from RS
- John Kart – do we need to create IBI? Are they comparable? Yes.
- Genevieve – sounds too good to be true. Is there trend data collected on this? A commonly used measure of stream biodata. Good for pre- post- testing. Suggests another less technical phrase to describe IBI and make more accessible to folks at the higher federal level. Dave mentioned assigning letter grades as a way to communicate IBI results more easily and effectively.
- Mark A. – likes the list. Tells story of no water in Ipswich River...how many streams/rivers are low flow in NE? Water levels/flow should probably be a factor that should be measured. Scale of measurements. Doug Norton – Flow monitoring is limited, but NHD+ has estimates of flow for an idea (not real data)
- Brian M. – Observed vs Expected data might be better than IBI. Contamination and nutrient load (water quality should be included)
- What about hard banking/channelization?
- How is proportion of watershed that is impervious determined? Use GIS to find buffers. Christopher Bellucci (CT) has done statewide work on impervious surface. Made a distinction between recoverable and non-recoverable % of impervious surface using a zone rather than black & white cut off point.
- Nationwide impervious coverage NLCD data exists (website in presentation)
- General – tie to human element, e.g., relate to flooding. Dave suggests to maintain within the realm of F&W
- Miles of connected stream reach is how close the order is of the stream that's connected to it.

Feedback Station

Impervious Surface

- Comments: Provide a background statement and supportive data.
- Cost: Low-cost to acquire
- Availability: Data are readily available through a NLCD or similar GIS database.

IBI's (Index of Biotic Integrity)

- Comments: Metrics tell stories on different parts of a stream system.
- Need to break it apart to allow accounting for species list,
- Need to work on a normalization process across the region
- Need to establish reference points
- This sets the stage for a regional effort.
- Could require multiple IBI's
- Possibly use the NE Rivers and Streams Technical Committee (NERSTC) to help survey data from states
- Have NERSTC review existing IBI and fish sampling protocols

- Need to consider approaches for relating IBI scores to general public-possibly as letter scores (A-E).
- Costs: Could be high, but we should use the National Wadeable Stream Assessment data as an initial data set.
- Availability: Uncertain. Start with available data, then scale up till we are able to acquire the data we need. May require a Regional Conservation Needs project or something similar to coordinate and collect data.

Riparian condition (NEW!)

- Comments: Could use % urban development. This is a crossover with the lakes & ponds and the interest in providing an assessment of the riparian condition.
- Miles of streams protected; can help target restoration/protection efforts
- Use publicly protected lands-these data are available and being compiled through the NE Habitat Classification Project.
- Costs: Low-to-moderate Costs, A GIS exercise.
- Availability: Landcover readily available

Flow & Water Quality (NEW!)

- Comments: The Nature Conservancy , Index of Hydrological Alteration (IHA) (Modeling or gages)
- Can model the flows. Data are currently being used at gages.
- Check with Paul Seelbach on publication by Michelle DePhillip. Also, check with Colin Apse TNC Boston Office
- Use 303d list to provide an overview of water quality
- Cost: Unknown, but likely a moderate level.
Availability: Will require some work at the regional level

Dams & Fish Passage

- Comments: National Dams database. These data may also be used for Lakes & Ponds since some lakes are formed by dams.
- Use the states data base as the primary dataset since it may be more accurate, then rely upon the national dataset as a backup
- Look at culvert data-national forest data since culverts can impede fish movement
- Cost: Low cost
- Availability: Readily available.

Brook Trout

- Comments: How often do we collect data to compare with historical data? Where do we sample?
- May want to direct sampling in lower reaches of streams where they are more vulnerable
- Lots of interest in this measure.
- Cost: Low-to-moderate for current data;

- Availability: Readily available through Eastern Brook Trout Joint Venture and National Fish Habitat Initiative.

General Comments:

- Should consider using a graphic showing how the indicators address features/functions of stream; this may vary with the type of publication.

Suggestion of an Index of Watershed Integrity developed by Ralph Tiner of USFWS National Wetlands Inventory.

Forests

Presenter: Jeff Tash

Indicators:

1. Areal extent of forest – Area of forest, Patch size class, Reserve status
2. Forest composition and structure – Areal extent by forest type, Areal extent by forest seral stage
3. Index of bird abundance – trend by seral stage of req. habitat, Trend by sensitivity to forest fragmentation, trend by broad habitat class or guild
4. Forest fragmentation – mean landscape fragmentation index, forest type?
5. Chemical deposition – mean mercury, sulfur, and nitrogen deposition indices.

Comments:

- Mark Anderson – good choices. #2 gives him a lot of pause since forest will change in response to climate changes. Forests are dynamic, so how do we know what the right composition is and how do we know what to monitor? Critical factor is state of forest soils. Nothing on soil...must be inferred from deposition. [Note that FIA has some soil data, and other structure / composition data].
- Genevieve – is there one index per state for #3? Dan Brauning – USGS does categorize this data by species, and the data would be easily aggregated by forest type, species, guild, state, etc. Which dimension would be most meaningful? Bird abundance is the strongest measure to show change...as long as we can figure it out. Is there a keystone species or some guild based on habitat that we can choose to focus on? This was thrown in because this is too hard to interpret, but too popular to ignore. No reason why you can't develop an IBI-like index for birds. Challenge lies with how to choose species.
- George Matula – how do you communicate how to interpret change. Is what we're seeing good or bad?
- Dan Brauning – take us back to premise. Are we starting with work at the state level to get measurement data on a state-by-state basis or on a regional scale that can then be rolled up or are we looking for some mix of both (majority felt this should be a combo of both). We want healthy F&W across the region, but indicators that don't bring utility to a certain state won't get any federal funds. States will appreciate being able to see how they fit in to a regional assessment. State's don't need to do the same stuff but they should be coordinated enough to be able to say something about the region as a whole.
- Tracey – We need to start prioritizing these indicators to ensure overlap of what's being collected.

Feedback Station

Previously, the group had picked five sub targets, by broad forest type:

- Southern broadleaf evergreen forest
- Coastal plain pine forest
- Central oak hardwood and pine forest
- Northern and central mesophytic hardwood and conifer forest
- Eastern North American ruderal and plantation forest

In order to summarize some of the chosen indicators (patch size class, fragmentation index, chemical deposition, maybe bird index?) by sub target, we are going need a GIS layer depicting the approximate boundaries (like a species range map) of these forest types (with the obvious caveat of these things not having definitive boundaries).

So, I have two questions related to this issue:

1. Does something like this (major forest types) already exist in a digital format that can be easily cross-walked to our selected sub targets? I've seen range-like maps of major forest types (e.g., Northern Hardwoods) in a variety of publications but have never run across the GIS data.
2. If the answer to above is “no,” is it possible to use something like Omernik's (<http://nationalatlas.gov/mld/ecoomrp.html>) or Bailey's (<http://nationalatlas.gov/mld/ecoregp.html>) or TNC's ecoregions to approximate these boundaries?

For example, here are the Omernik ecoregions of the NEAFWA region:

- Atlantic Coastal Pine Barrens
- Blue Ridge
- Central Appalachians
- Eastern Great Lakes and Hudson Lowlands
- Erie Drift Plain
- Laurentian Plains and Hills
- Middle Atlantic Coastal Plain
- North Central Appalachians
- Northeastern Coastal Zone
- Northeastern Highlands
- Northern Appalachian Plateau and Uplands
- Northern Piedmont
- Piedmont
- Ridge and Valley
- Southeastern Plains
- Western Allegheny Plateau

Some of these cross-walk quite well with our sub-target categories (e.g., Atlantic Coastal Pine Barren = Coastal Plain Pine Forest). Others, I'm not sure.

Indicators

Obviously, everything will be summarized by the region as a whole and by sub target.

1. Areal extent of forests
 - a. Total area
 - i. Need crosswalk FIA forest classes to our sub target classes
 - ii. Or, simply use NLCD (summarized using the GIS layer of sub target classes) instead of FIA
 - b. Patch size class
 - i. Need sub target map and NLCD for the region
 - ii. Need to define what a patch is (e.g., do roads constitute a patch boundary?)
 - iii. Need to report patch-classes in a biologically significant manner. It could be as simple as # patches > a minimum threshold (e.g., large enough to support interior nesting birds or large mammals). Or some kind of histogram of the distribution patch classes (classes based on wildlife needs)?
 - iv. Someone at the meeting suggested P:A ratio as well? Necessary?
 - c. Reserve status
 - i. Need to crosswalk FIA classes to conservation lands categories?
 - ii. Or, use the conservation lands database (as demonstrated by Mark Anderson) to summarize NLCD data (amount of forested land in each conservation lands category). Maybe this has already been done by TNC for this region?
2. Forest composition and structure
 - a. Forest area by type
 - i. I'm guessing this is a more detailed breakdown than the sub targets
 - ii. If so, what classes?
 - iii. And, do these classes need to be cross walked with FIA (NLCD data is not appropriate for this level of detail)?
 - b. Forest area by seral stage
 - i. Need to cross walk FIA classes to Goodell and Faber-Langendoen (2007) classes?
3. Bird abundance
 - a. Need to choose how to group birds for this analysis:
 - i. Grouped by seral stage requirements?
 - ii. Grouped by broad habitat class?
 - iii. Grouped by guild?
 - iv. If also needed by sub target, do we need customized data from BBS?
 - b. Need to choose what statistics to report:
 - i. Number of bird species in a given trend category (e.g., increasing, declining, stable, unknown?????)

- ii. IBI (as suggested at the meeting) like number that combines multiple species into one trend number?
 - iii. Something else?
 - c. My preference is to simply report number of woodland birds in a given trend category for the region as a whole and for each sub target. I'm not sure how appropriate this is using BBS data.
- 4. Forest fragmentation
 - a. Requires the sub target map
 - b. Use existing dataset:
 - i. <http://nationalatlas.gov/mld/forfrgi.html>
 - c. Or create a custom fragmentation dataset like the NH TNC model (would require a lot of GIS data compilation and analysis)
 - d. How to summarize the data? Amount of forested lands in broad fragmentation severity classes? Or by some mean fragmentation index.
 - e. Is this redundant with patch size class distribution?
- 5. Chemical deposition
 - a. Requires the sub target map
 - b. Spatial model of mercury deposition from Miller et al 2005.
 - i. Report out on mean deposition by target and sub targets
 - ii. Or, percent of forest over a given deposition threshold TBD (this is my preference)?
 - iii. Or something else?
 - iv. Must obtain the dataset from Miller for the NE
 - c. Spatial of Sulfur and Nitrogen deposition (Miller 2005):
 - i. Same questions as mercury
 - ii. Not sure if data set exists for the entire region (like NH and VT)

Grasslands and Shrublands

Jennifer in CT agreed to lead, but her workload hasn't allowed her to do so.

This target should not be taken out because certain directors have particular interest in grasslands and shrublands. Agreed to keep on and give this group another chance to develop the template

Panelists: Dan Brauning, Mary Anne Thiesing, and Don Faber-Langendoen

SGCN

Presenter: John Kanter

Intro:

1. Our responsibility for these spp
2. Working together in and across spp

3. Spp that require special focus

Qualifiers:

1. Not federally listed
2. Highly imperiled
3. Regionally distributed

Species:

Blanding's turtle

NE cottontail

Eastern small-footed bat

Green Floater

Bicknell's thrush

Eastern Brooktrout??

Comments:

- Dan Brauning – reminds us that this is driven by a state-need to secure SWG funds. Do we abandon the SGCN list and go back to the Therres et al. list? John says yes! All Therres spp. are included in SGCN and this should be noted in communications
- Mary Anne – stunned by 'back to the drawing board' basics. Liked the idea of advocating a regional approach because spp. don't respect state boundaries. Identify what's causing the issue before you go out and select all habitats to measure. Should focus on a new, more multi-faceted approach. Have to get buy-in from folks who have put a lot of time and effort into the old approach. To do this, we need to state that old approach is part of the new direction.
- Don Faber-Langendoen – selection of spp targets lacked process of directionality. Why do we exclude federally listed spp? Tracey responds they're getting enough attention and funds as is.
- Mark A. liked continuity to old list. Are there new spp of concern now that weren't of concern in '99? Did we learn anything in the SWP process? Non-uniformity of criteria for SGCN among states leads to complications. Can we standardize these criteria?
- Jon Kart – Framework to record the good work that we're doing. Start with Therres list, but federally endangered spp should be included in order to tell us about wildlife in the NE (a criteria for funding but not necessary for monitoring).
- How will spp data be acquired? John Kanter – this is an opportunity for the framework and the process of developing a list, or as an opportunity to discuss successful models with specific species and try to extend that out.
- Gen – list is good; site-specific monitoring good, but could site specific spp data be rolled up into a regional basis?
- Doug – characterizing recovery potential is important for each of the spp.

Feedback Station

Next steps:

1. Review and distribute the regional list * list for prioritization (Tech committee members)
 - Put on federal listed subset

2. Do a status report of increasing/decreasing/don't know by species for the entire region
 - Is there an active interstate conservation initiative to research and recovery (look at section 6 90/10 match rate requirements)
3. Standardization of data collection and management
4. Do we weight species abundance?

Steering committee:

Dan Brauning
Genevive LaRouche
George Matula
Alison Whitlock
Glen Therres
Mike Marchand

Unique Habitats of the NE

Presenter: Don Faber-Langendoen

Indicators:

1. Size and extent –% managed
 2. Context and connectivity – distance to roads
 3. Context, land use – monitoring change in land use
 4. Condition, structure – monitoring wildlife presence absence or population trends approach
 5. Condition, composition
 6. Condition, abiotic factors
 7. Condition, wildlife diversity/targeted spp populations.
- Caroline Stem (substitute panelist) – why do we include urban/suburban as a unique habitat? Is this something we want to preserve? Agree to leave out as not important relative to other habitat types. Might be valuable for measuring growth of urban/suburban landscapes.
 - Mary Anne – liked prioritization of top picks as a way to get the biggest bang for your buck. A good opportunity for very attractive, catchy, glossy reports.
 - Dan Brauning – concerned that some of the indicators were cookie cutter ecological attributes that don't necessarily apply. Are these truly the correct indicators (e.g. size) for habitats that by definition are rare? Are size and connectivity essential, given that these are, by definition, rare and isolated habitats? But we are looking at the change over time in order to monitor. We can't just look at plants. Is it easier to measure habitats or spp within them? The size indicator is useful, because easy to measure change in size of these discrete habitat types.
 - Jon Kart – Are there any SGCN species in the NE that rely on alpine habitat (e.g., Bicknell's thrush is sub-alpine)? Suggest dropping Alpine habitats from a report on wildlife since most states cannot list alpine wildlife spp.
 - What about unique aquatic habitats, such as waterfalls? There is a snail species that requires waterfall habitat.
 - This target is not a combination of the rare components of all the other habitat targets!

Effectiveness

Presenter: Ron Essig

Two types of info needs: status and effectiveness.

Status: How is biodiversity doing, how are threats changing?

Effectiveness: Are conservation actions having intended impact, and how can we improve our actions? What processes can be used to measure effectiveness?

Recommendations: 1) adopt “results chain” tool, and 2) adopt common data standards.

SGCN site or species protection

Habitat improvement

SGCN Baseline information and data collection

Comments:

- Mary Anne – thorough, very well-balanced, but lacked explanation of why we want to report on effectiveness. For reporting, justifying funding, or for cyclical progress? Who’s the audience? Public, decision makers, peers, etc? Reasons for monitoring effectiveness include: managers to improve, cross-project learning, reporting to congress/public, and to show that for the money we’re getting, the projects are leading to success.
- Don Faber-Langendoen – how will states agree on actions? The same goal can be achieved a number of ways, and how do we reconcile among different states? Monitoring cannot be done without proper planning...is this also something we want to ask of states??
- Mark Anderson – outcome measures/monitoring needs to be included in addition to output monitoring, which is under this framework
- Use results chain to communicate ‘progress zone’ for those who think in black and white, to show progress even though we’re not at the end
- Dan Brauning – To what degree is cost-benefit analysis part addressed in this? Can be dangerous as state agencies may see this as external evaluation and report card. This procedure may be somewhat threatening to state wildlife agencies, and may face some institutional resistance. Having people lay out their assumptions is assuring a certain level of standardization that funders can feel confident awarding grants to.
- Tracey T – may have to broaden scope of what we’re looking at: not just SWG funded projects.

Feedback Station:

- Intermediate results are what allow you to measure the effectiveness of your strategies.
- We should develop likely strategies for which to construct results chains and then identify common indicator.
- Have SWG applications require applicants to describe what they think their outputs, outcomes, and impacts will be, and we will provide a template that groups can use to identify what these are. These can always be adjusted. Currently, this is included in narrative form of expected results, so it’s not a stretch to ask applicants to use a template and put into a more user-friendly format (i.e., results chains, boxes). Agree to a short list of indicators to report on in order to minimize report writing and evaluating.

Panelists: Dave Day, Tim Tear, and Brian Mitchell

Lakes and Ponds

Presenter: Jon Kart

Threats:

1. Direct habitat modification
2. Pollution
3. Flow alteration
4. Invasive
5. Climate change

Indicators:

1. Species status of SGCN
2. Water quality
3. Invasive occurrence
4. Flow alteration
5. Connectivity
6. Shoreline integrity

Comments:

- Brian – liked the photos. List of indicators covered main threats. Most important is status of SGCN, but this is also the hardest to collect data on.
- Tim Tear – all makes great logical sense, but overriding issue is: There is a large gap between the scale of indicators measured in monitored areas versus the entire region. What mechanism do we have to correct for this and errors associated with getting a non-representative sample of spp to monitor...do general indicators tell us something about the SGCN? (type II error). We need a coarse filter that will catch a good number of species. Tim's suggestion is to recognize that this is a potential problem and acknowledge this in the monitoring plan and try to correct for this as we move forward.
- Dave Day – is it possible to have regional classifications and associations of lake/pond types with SGCN (e.g., shallow lakes and associated species) for the sake of directing management efforts. Regional aquatic and terrestrial projects exist in parallel to this. Classification exists in TNC (out within a year) that includes lake/pond data except depth and characteristic spp.
- We need to clarify the definition of what's being targeted...excluding dammed reservoirs leaves out a lot of important habitat. Where do we draw the line between all man-made and all natural lakes? Perhaps where lakes were augmented due to human actions (dams; anthropogenically enhanced lakes); perhaps have three categories of lakes, ponds, and reservoirs (a lot of data exists there) that together include all water bodies...committee to discuss.
- Water flux will be a big issue with impending climate change, so it should be aKEA. Buffer areas around lakes (miles of shoreline) should also be considered. How many have 100% intact shoreline, etc? Distance to roads and amphibian habitat should be included. This ties into the buffer shoreline measurements as this is where amphibians thrive. Some metric (preferably

through remote sensing) to look at connectivity between buffers, shoreline, inshore habitat and water bodies will be very useful.

- George Matula – identify fishless ponds for monitoring of amphibians. Paul – Glacial Lakes Partnership is tackling a lot of this stuff in-depth, so might be interesting to tie in.

Highly Migratory Wildlife

Presenter: Dan Brauning

Indicators:

1. Population indices – raptors, waterfowl, shorebirds, bats, diadromous fish, butterflies
Hawk migration is a model indicator

Comments:

- Brian – doing the best that is possible with a very complicated issue. Should this group be concerned with transient or seasonally resident spp? How can we ensure all states report on raptors?
- Tim Tear – key issues: (1) we don't have much choice but to go to existing networks (it is good that you acknowledge this), and (2) we are limited to what is possible to extract from existing networks (Hawkwatch, Cornell study); for this target resident population counts were excluded.
- What's the target, which birds do we include? Just those who fly through or include those that spend significant life stages in region? We already include forest birds in the forest target. There is an ambiguity around which spp. are truly transient/resident/seasonal etc.
- Dave Day – we should focus on those spp. for which we are providing critical habitat. Indicators should just measure if there's a problem at the broad level, and if so then we need to look at spp more specifically. This is similar to unique habitat target in that it encompasses unique events.
- A lot of these indicators are habitat specific rather than spp. specific. Three options for target definition (votes):
 - a. Throw out/combine into a more simplistic, basic monitoring (2)
 - b. Focus on a few specific stories (select ambassadors) – not comprehensive; perhaps where NE is critical for spp survival (6)
 - c. Full separate stand-alone target with a full suite of indicators. More cumulative. (4)
- Sense of the group is more between b and c above.

Freshwater Wetlands

Presenter: Don Faber-Langendoen

Indicators:

1. Size – total area, trends in patch size
2. Landscape context – connectivity, but chose buffer because seemed more important.
3. Condition: impervious surface, road density.
4. Biotic condition: index of bird abundance
5. Abiotic conditions: hydrology; high/low stream flow, upstream water retention

Comments:

- Dave Day – how do vernal pools fit in? They are critical habitat for amphibians and PA has a vernal pool registry; Don – would be a separate sub-target since so different from flood plains, bogs, marshes, etc. Difficulty to get data on vernal pools using remote sensing. Should be included in wetlands, but could be sampled if not using remote sensing.
- Brian – amazing grand finale! Lot of remote sensing data brought in which will make more do-able. No direct link to SGCN. Can possibly calibrate based on more intensive data collected by local programs?
- Gen – lots of similar indicator terminology across groups, so we need to make sure we have the same definitions among us all (e.g. impervious surface).
- Tim Tear – there are records kept on wetland violations. Is there a way to look at this in order to determine the health of wetlands...may be a challenge at the regional level.
- There is a nationwide effort (4 states in NE are doing it) to monitor wetlands as part of 305b reporting. Look at ways in which data is reported in order to cross-walk and incorporate into our efforts and datasheets.
- Can tie into EPA's initiative to monitor wetlands.
- Floodplain modeling with overlaid landcover and land maps are relatively easy to do and produce staggering results on how much flood plains are actually left. TNC has done some work on looking at conversion of floodplains to unnatural status. This ties into assessing the potential effects of climate change...how does it affect my backyard?

Feedback Station

- Use NHD+ datalayer for catchments (vs. HUCs). USGS WRD(?) in Lansing, MI (Steve Aichele?)
- Use NHD High resolution 1:24,000. Depicts wetlands and wetland connections. NY is not complete.
- For now, use NWI maps. Use NHD High resolution to catch NWI misses. Use hydric soils layer in difficult landscapes.
- Use North American Marsh Bird Protocol instead of BBS for an Index of Bird Abundance. BBS does not address obligate wetland birds sufficiently, except possibly Swamp sparrow. Habitat is not covered in BBS. Trends are not statistically significant. Unfortunately, there is no data yet via the Marsh Bird protocol.
- Consider total area % change indicator
- Consider fish presence/abundance and amphibian richness index for either rapid or intensive monitoring in the field, not remotely.
- Invasive species indicator?
- Hyperspectral scanning – identify in Needs section. Pilot in NY to identify loosestrife and phragmites remotely.
- Use NLCD non-natural layers within HUC catchment, not just impervious surface. Weight different impacts. Tie in to human element.
- Hydrology – Compare frequency/duration of flooding to what it naturally should be. This is on the ground work.
- High and Low Stream Flows: the rivers and streams group will probably do.

- Upstream surface water retention – NHD+.
- Dam layers available nationwide. (Jim McKenna).
- Fragmentation index – see forest group.
- Connectivity/Interwetland Distance – function vs. condition. Need baseline data.

IV. Plenary Discussion on Reports From This Process

Comparative Analysis

- Many groups have listed indicators that other groups are also proposing. Each group should prioritize their indicators, and rough costs should be assigned to each indicator.
- Can then create a grid of indicators x targets, and allocate effort that accounts for costs, priorities, and need to report on all 8 targets. Cost includes cost of acquiring data, as well as analyzing it and reporting on it.

NE Monitoring and Performance Reporting Framework

- Use the image of the target (e.g., cross section of a stream) to describe why we selected each indicator (Dave Day)
- Play off the idea of state/fed/NGO perspectives to create sound bites for why this would work based on what each is looking for.
- Opportunities to cross walk data to other applications (e.g., water quality – states monitoring wetlands as part of 305b reporting)
- See Table 1 for details

Table 1. Reports From This Process

Report	Audience	Length	Format	Content
1. NE Monitoring and Performance Reporting Framework	NEAFWA members TNC and other audiences	20 pages	Word/PDF document Report Some pictures to spice it up Graphics (e.g., cross sections of a target with indicators tagged to different parts of the cross section)	Describes the NE Monitoring and Performance Reporting Framework – what it is, why we developed it, and how we developed it (briefly). This will not include the actual data that will describe the status of the conservation targets Northeast states are working to maintain or the effectiveness of the strategies they are using. Rather, it outlines what information is needed in order to report on the status of those conservation targets and the effectiveness of those strategies both in an initial baseline report and in the years to come. Might be interesting, where possible, to present the targets and their indicators in visual form – e.g., cross section of a stream or forest with indicators tagged Include sound bites from State, Fed, NGO – why would this work, what are they looking for, how it might work, opportunities to cross walk data to other applications – e.g., water quality – states monitoring wetlands as part of 305 reporting Adopt meta data standards, maybe use ConPro as an example
2. Summary of Status and Effectiveness Results (mocked up blueprint with steps for how to complete)	Decision makers Congress OMB Bean counters General public	10-20 pages	Glossy hard copy Stand alone fact sheets, very powerful, catch certain people Lots of pictures, anecdotes, engaging, inspiring Web pages?	This is where we present, in summary form, the data collected via the reporting framework Make it relevant to humans and wildlife (focus is on wildlife, but tie it back to humans, where possible) Foreword/intro that explains this is limited. For the curious, see x other indicators. Preface – more detail at the website, full report How many indicators – do we report on all and only explain a few? Do we want to standardize which indicators across the targets?

Table 1. Reports From This Process

Report	Audience	Length	Format	Content
				Who is delivering that message? Directors, public relations firm?
3. Process report	Other Fish and Wildlife agencies interested in figuring out how to report results – NFHI regional partnerships Agencies or organizations trying to roll up results across many agencies, states, countries, etc.	10-20 pages	Word/PDF document Report Some pictures to spice it up, maybe text boxes for tips	More detailed summary of our process Include anecdotes, particularly interesting results, tips for how to make this happen, keys to what made this process successful, what we could have done better, challenges. Include results chain in the report for what we expect to happen by developing and implementing this framework.
Other potential products:				
4. NE Monitoring & Performance Full Technical Report (mocked up blueprint with steps for how to complete)	NEAFWA members Conservation organizations Scientists Researchers Academia	~50 pages	Word/PDF document? Website or database – maybe more practical and cost effective than full report – glossy as heart of document, hotlinks to the 20 pages for each indicator Some pictures to spice it up	Full presentation and analysis of all the data. Would follow the framework outlined in Product 1. If highlighting how we got all the data, nuts and bolts about collecting data. Transparency about what decisions were made and why. Maybe a mock-up for 1 or 2 targets by late 2007/early 2008 Could pdf copies for Congress How we sell this – this has relevance to humans Also connection to wildlife

V. Discussion of Roll-out Strategy

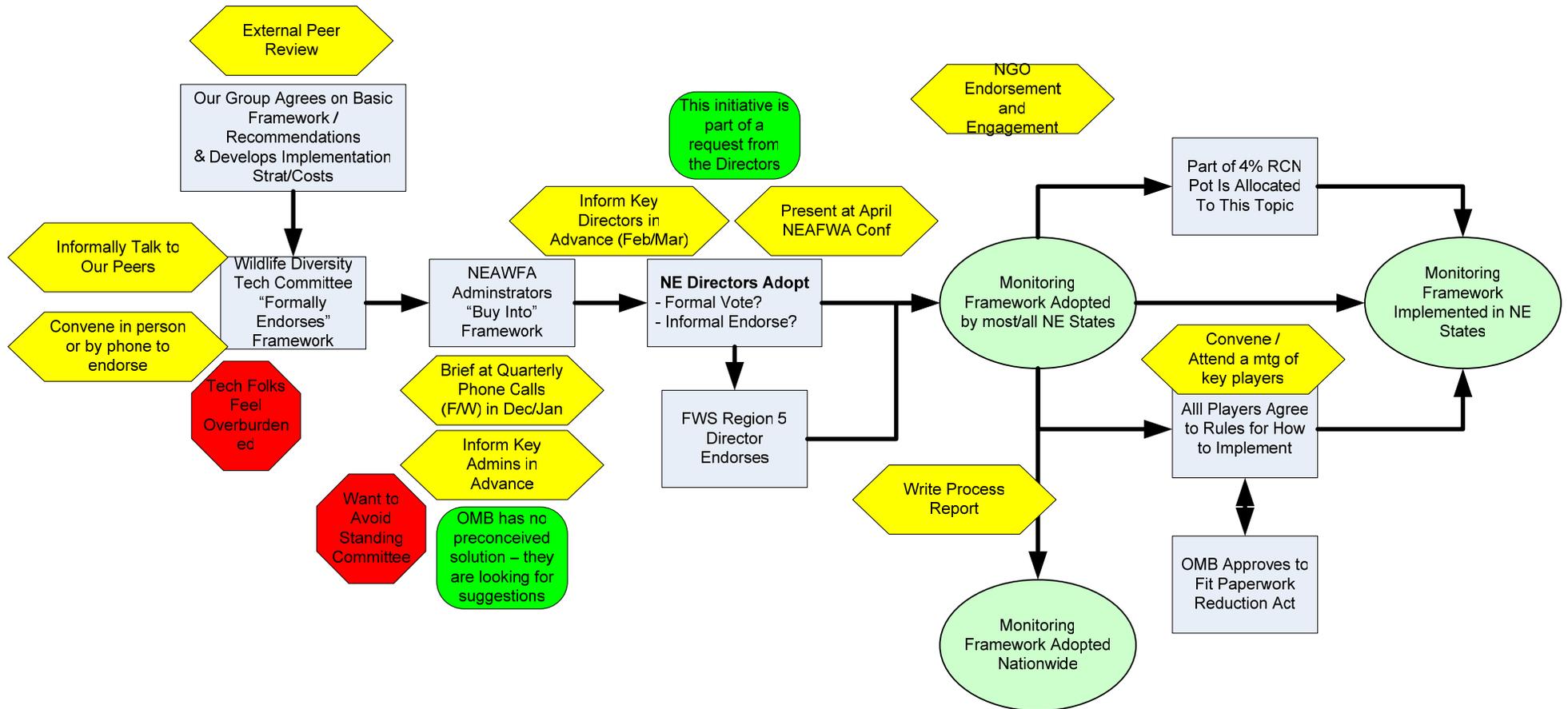


Figure 1. Flow diagram for roll-out strategy

VI. Data Management Break-out Session

Introduction (Mark Anderson)

Management of protected land data should include the following:

1. Parameters of what goes into the dataset
2. Who will be responsible for compiling?
3. Target of data – what we’re trying to conserve
4. Data sources
5. Data flow structure
6. Key fields for which content would be standardized across data sources. Should be agreed upon by all states – this was a multi-step process that ended up being a lot of work. This is an iterative process so dataset will only be very useful in five or so years...a work in progress.

Comments:

- Bottom line – this take a lot of work, time, effort, and money even with existing, good data...but not impossible!
- The perfect world is where each state updates its own data annually, then we (the NE region) compile and send back out as a regional data set that states can then in turn analyze on their own.
- Make data standardized and easily communicated in order to have a regional scale data set, but for more detailed comprehensive data set, you would have to go to the states specifically to request this.
- Keep data sets separate for indicators in order to keep things simple. Cross grids only when you have a specific question/comparison you want to address.

We’ve named many indicators, but how is data collected, stored, and analyzed? Makes sense to pick a few indicators, and walk through the process:

Indicator: Forest extent by type

Data sets: FIA (Forest Inventory Analysis) – compiled state-by-state, a systematic database that is unbiased, point database of samples, preferred for graphs, a rolling assessment that is fairly standardized by state

NLCD (National Land Cover Dataset) – continuous data

Scale: state level data (nationally implemented) that can be rolled-up to the regional level. Or, we could request the data directly at a regional level.

Getting the data: FIA available online and accessible using queries. Regional office exists that will respond to specific requests for information/maps within months (as opposed to years). Ideally, we could get it electronically for use in GIS and other analyses. At a minimum, we need state and regional graphs generated by FIA. Eventually, we would download this raw data and start running cross analyses across indicators.

Who's responsible?: We need a single lead person to request the data (in table form) from FIA on behalf of each state and then for the region. Same person will analyze/graphically depict data and lead the team to write the report. This lead person should be hired by NEAFWA and will potentially focus on all indicators.

Cost: Cheap! Perhaps one day of the person hired to manage indicators.

Issues:

- Which data set is more accurate – not that much of an issue at the regional scale.
- FIA is a rolling assessment with variation among states +/- 5 years.
- Cyclical/periodical rather than annual – will this be a problem for reporting
- Overall question: Can we highlight different indicators each year?? Especially since various indicators are GIS based and won't be updated yearly.
- Updates occur at irregular intervals, since implementation varies state by state. This metric would be calculated every 5 or 10 years.
- Of we want to start overlaying/analyzing data across indicators, we need it in electronic form.
- We will always want to avoid storing raw data.

Indicator: Bird abundance (focus on Forests)

Data sets: BBS goes back to 1965, so you could do a historical analysis. (not appropriate for wetlands, but would be good for forests and grasslands). BBS is presence/absence data, is not appropriate for abundance information.

Scale: 25 miles routes collected nationwide, degree blocks, can be separated by states/region

Getting the data: can get reports by group or state...to what extent can we request specialized reports?

Issues:

- BBS not appropriate for wetland birds – sparse, very coarse, not by species
- Wetland birds – no existing data but methodology established
- Should this be presence/absence rather than abundance?
- Nothing to roll-up across states, except BBS
- How do you reconcile opposing trends that comprehensively show no change (i.e., how do we incorporate some birds that might be decreasing even though overall birds are increasing?)

Indicator: Presence/Absence of indicator species in unique habitats

(e.g., rattlesnakes in Talus slopes or peregrine falcons on cliffs)

Data sets: database of cliffs and talus slopes (TNC) exists now and is based on digital 30-m elevation model that gives total extent of habitat. Then we can overlay locations of tracked rattlesnakes or peregrines (State Natural Heritage database – current and accurate database, but with unknown bias) and then see trends over time. Databases are sporadically updated. GAP analysis program may have some presence/absence models that we can use.

Scale: state-by-state, not necessarily collected in the same way and not all collecting on absence. There’s still the question of standardized, but probably pretty good.

Getting the data: check with NatureServe for regional, national, and state-by-state data on snake locations. TNC has habitat and overlay data and would probably be able to share the analysis (but not the data).

Who’s responsible?: lead individual hired by NEAFWA. Or perhaps an interested organization that is willing to help, like NEPARC (a regional herpetology group)

Cost: Somewhat cheap. Would require more time for monitoring designs and finding out what states are doing (at least a few weeks of time to set it up). Subsequent tracking will be cheap.

Issues:

- Data is in electronic format, likely GIS or a TNC report/table. Not going to be possible to get reliable trend information from this, but will be useful information for an initial status.
- Need to analyze predated distribution
- Lack of standardization, so getting trend information is difficult given the arbitrary nature of wildlife tracking data.
- You would have to do an analysis of effort
- Should take into account audience when choosing what wildlife you track (e.g., rattlesnakes are not too popular with the public, and might not make sense to communicate with the public/Congress). Also, some of these spp. are included under the SGCN target, so may be outside the realm of unique habitats.
- Often states only have presence data (as opposed to absence data), and most states don’t even have this.
- Uncertainty of sampling design.

VII. Next Steps

Table 2. Description of next steps following this meeting.

Step	Who	When
Circulate the results of the workshop	FOS	October 5
Finalize template format - Includes instructions for prioritization/ ranking	FOS and Tracey & John	October 5
Work Groups Revise	All 9 working groups	Now – October 31
Work Groups Submit Final Template	All 9 working groups	October 31
Compile Plans and Complete Matrix Comparing Indicators Across Targets	FOS & Steering Committee	Mid November
Prioritize Minimum Set of Indicators	1 Rep from Each Group & Steering Committee	End November
Draft Framework	FOS & Steering Committee	Early December
Comment on Framework and Peer Review	Participants in Both Workshops (Albany &	Mid December

Step	Who	When
	Rensselaerville)	
Peer Review	External Reviewers	Early January
Complete Framework	FOS & Steering Committee	Mid January