CT River Pilot Project Core Team Meeting
April 25, 2014

Attendees In-Person

Ana Rosner – USGS
Andrew MacLachlan – FWS
Andrew Milliken – FWS
Ben Letcher – USGS
Bill Jenkins – EPA
Colleen Sculley – FWS
David Eisenhauer – FWS
David Stier – Springfield Science Museum
David Perkins – FWS
Ethan Plunkett - UMASS
Eric Sorensen – VTFW
Georgia Basso – FWS
Jeff Horan – FWS
Jenny Dickson – CT DEEP
John Warner – FWS
Katie Kennedy – TNC
Ken Sprankle – FWS
Kevin McGarigal – UMASS
Marvin Moriarty – Friends of Conte
Mitch Hartley – FWS
Nancy McGarigal – FWS
Patrick Comins – Audubon CT/Friends of Conte
Peter Murdoch – USGS
Rachel Cliché – FWS
Randy Dettmers – FWS
Scott Schwenk – FWS
Tim Wildman – CT DEEP
Tanya Lama - FWS

Attendees On-Phone

Anne Kuhn – EPA
Bob Houston - FWS
Chad Rittenhouse – UCONN
Emily Preston – NHFG
Jed Wright - FWS
Mike Slattery – FWS

Agenda

I. Introduction/Review Agenda/General project updates
II. Updates from Terrestrial/Wetlands and Aquatic Subteams
III. UMASS presentation and discussion
    a. Review of landscape design process steps
    b. Incorporating IEI and weighting ecological systems
IV. Terrestrial/Wetlands and Aquatic Subteam Breakout Sessions
V. Wrap up/Action Items

**All handouts, notes, and presentations referenced below are on project website:

http://northatlanticlcc.org/groups/connecticut-river-watershed-pilot/ct-river-core-team-meeting-4-25-14

General Project Updates (Nancy McGarigal and David Eisenhauer)

Nancy welcomed everyone, reviewed agenda, and reminded folks of the schedule for monthly meetings here in Hadley at the FWS Regional Office.

Dave spoke about communications strategies, the various audiences we were trying to reach, materials posted on the website, and the new look of the website.

Update on Terrestrial/Wetlands Subteam (Randy Dettmers)

Subteam held meeting/conf call on April 22, 2014 and discussed the following:

- UMASS modeling work is based on ecological systems. Source is NE Terrestrial Habitat Classification System (NETHCS); a hierarchical classification system using formations (largest grouping), macrogroups, ecological systems, etc. All 13 State agencies in Northeast Region and NALCC Steering Committee agreed to use it.
- We anticipate pilot work will focus primarily on the macrogroup level.
- One handout provided and discussed was a table with a crosswalk of the NETHCS formation/macrogroup/ecological systems in the region and how they relate to the habitats associated with the 13 terrestrial and wetlands representative species being modeled by UMASS in the CT River watershed. Combined, the 13 species cover the matrix habitat types in the watershed.

Recommendations that came out of April 22 subteam meeting:

- Agreed to use the 13 species that are being modeled by UMASS for the objective setting and design work.
- Agreed that some species of conservation concern with limited dispersal or rare community types are not well represented by the 13 modeled species. There is interest in incorporating in the objective-setting and design work information on some of those if spatial information is available and consistent across the region. Examples are hibernacula (for bats), cliffs, river/beach cobblestone (tiger beetles), and pine barrens. Also discussed were peatlands and warm season grasses.

What the group agreed were topics needing follow up discussions include:

- How to balance a focus on what are CT River watershed resources with developing transferable products that relate to other parts of the region (e.g. saltmarsh and pine barrens which are relatively scarce in watershed).
- Deciding what is best way to incorporate those rarer species and community types with modeling and analysis done for representative species. Not the same level of analysis will be done. Should the rarer species be "additive" or layered on to the design work for the representative species?

- What is best way to facilitate a discussion on coarse filter index of ecological integrity (IEI)? What criteria should we use to weight/rank habitat types? What percent of the landscape to target? What are objectives for ecosystems (e.g. maintain x% of IEI?).

Randy provided another handout that was a table with species population objectives derived from existing regional plans (e.g. Bird Conservation Region plans, Atlantic Coast Joint Venture plans, etc). The table included draft population objectives for the 13 species modeled by UMASS stepped down from the regional objectives. The draft objectives include maintaining populations for all but three species where an increase was recommended: Eastern meadowlark, American woodcock and wood thrush.

What the group agreed were topics needing follow-up discussion include:

- Population objectives for large increases might not be possible because trade-offs among species/habitats and/or because other landscape scale stressors are affecting populations.
- Different objectives may be warranted for different parts of the watershed (e.g. meadowlark increase in the southern part of the watershed (CT and MA), but more about maintaining populations farther north (VT and NH).
- How do population objectives get used in the landscape design? What is the translation between populations and habitat?

Update on Aquatics Subteam (Dave Perkins)

Aquatics subteam a little behind the terrestrial team; its become clear that aquatic ecological systems are not as discreet as the terrestrial systems and may need to be evaluated differently.

Subteam held meeting/conf call on April 22, 2014. The discussion topics were:

1) What are we trying to accomplish with the aquatics piece of the pilot project, including identification of priority aquatic habitat, setting biotic and abiotic objectives, providing information that will be useful to the terrestrial team and incorporating aquatic ecosystems objectives in the full pilot design process

2) What should our approach be, i.e., use of a habitat versus a species focus, or a hybrid of the two?

3) Which aquatic species should we focus on in design (including "representative" and rare species)?

4) Which ecological settings/habitat types should we focus on in design?

5) What existing biological objectives, species distribution information, existing models for aquatic habitats is already available and has been prioritized or identified as important?

What the group agreed were topics needing follow up discussion include:

- Selecting priority areas is an outcome, but how will this be best accomplished for aquatic systems that are not necessarily discreet like terrestrial systems?
- What are the best tools and models available to use?

- Quantity and quality of water is important for aquatic species; how will it be best to use this information and integrate it into the design?
- Is the list of aquatic representative species complete?

Recommendations that came out of subteam meeting:

- Agreed to use the TNC aquatic ecosystem classification system which breaks rivers into size classes.

UMASS presentation (Kevin McGarigal)

Copy of this presentation is on project website (Notes below are just highlights)

Presentation today is about the design process step (step 2 below) specifically. A review of the adaptive landscape conservation design process steps follows:

1) Establish conservation goals and objectives
2) Given objectives, design conservation network
3) Implement the design network
4) Monitor the design network
5) Evaluate results of the design network
6) Adjust/adapt design network

A detailed description of all the steps is provided on the pilot project website.

What is landscape design? Essentially it is:

- Deciding what do we want to do and where; what action to take and where
- A hypothesis where we can only determine if we are successful through intensive monitoring
- A multi-scale framework: Region (context; connectivity) – CT River landscape (goals/objectives; conservation targets, conservation network)– sub-landscape (distribution of core areas)
- Effective design criteria includes: diversity, redundancy, ecological integrity, species landscape capability, connectivity, and distribution; not all are easy to implement, but all should be considerations
- Design components include 1) core areas; 2) buffers around core areas; 3) connections between core areas; as well as 4) focal management areas; and, 5) restoration areas
- Ultimately, a network of protected and/or managed core areas is identified; prioritization among core areas could be accomplished, as could prioritization within a core area.

Major design steps:

1) Select core areas (tiered core areas0
2) Prioritize among and within core areas
3) Create buffers around core areas
4) Delineate corridors between core areas
5) Prioritize within and among corridors
6) Identify management needs (e.g. Fire? Vegetation manipulation? And, which are best handled in, or outside of, design?
7) Identify restoration needs (e.g. warm season grasses?)

Field verification will be very important to validate all steps. Including a social/cultural/economic component will be important to do in the future. This pilot project, however, has an ecological focus.

The pilot project is going through the above steps under 3 approaches:

1) Coarse filter (e.g. ecosystems)
2) Species filter
3) Combined species and ecosystems

The presentation and discussion today is focused on the coarse filter approach using ecological systems. However, there is the opportunity to evaluate each of the approaches and decide which makes the most sense for the pilot area.

Kevin presented 9 key decisions in designing the conservation network (step 2):

1. Select sub-landscape scale to ensure distribution
2. Weight macro-ecological systems (for IEI) **focus of today**
3. Weight geo-physical settings (for Resiliency)
4. Weight components of core area selection index
5. How much land area to allocate to core areas
6. Should we designate tiered core areas
7. Should there be a minimum core area size
8. How to delineate core area for aquatics
9. How to identify management priorities

For any additional species or rare communities that folks want to evaluate, the data needs to be regionally consistent for full analysis. Need to think about how to meld in this information into the core/buffer/connect design without revealing rare species locations. However, local data can be used to modify or inform modelling effort. Local data could be used to help validate the models and used in conjunction with field verification.

<u>Discussion:</u>

Jeff: Does the species information refine the core areas?

> *Response*: It could inform the value of a particular place on the ground and where we want to focus our attention on protection, management, or restoration. Core areas are just helping us focus attention; there is still habitat value outside of core areas.

Eric: Can you explain the coarse filter approach; is it only related to ecosystems?

> *Response*: There is also fine filter to use when evaluating ecosystems too (its not just species). In step 2 (designing the network), we will weight ecological settings. We need to decide how to weight those setting (e.g proportional to extent in watershed or region? Or biased?)

Bill J: Are we putting the cart before the horse? What are you weighting against? Don't objectives affect weighting? Shouldn't the objectives be done first?

Response: Yes, objectives should drive the weighting, and we acknowledge we are jumping ahead a bit with the ecosystem weighting.

Dave P: How do population objectives relate to the design?

Response: We should probably be thinking generally with objectives for now, and not necessarily expect them to be SMART at this stage. For example, an ecosystem objective could be to "…maximize community groups across the landscape.."

Group was asked what other source information on habitats or ecological systems was available that they wanted to use for consideration of core area selection. Recommendations include:

1) TNC mapping of floodplain forests in watershed
2) Stopover bird migration habitat
3) Distinction between impounded vs non-impounded aquatic habitat
4) Important Bird Areas; Matrix forests (mentioned that the IEI picks this up); Audubon forest focal areas
5) Water quality measure: e.g. like Class A and B waters which measure amount of nutrients, pollution, temperature; all are important to know for aquatic systems

Katie: What are we creating a selection index for?

Response: Today we are looking at indexing ecosystems. We are trying to integrate all the ecosystem products (eg model outputs) and scaling them so they are comparable between and among ecosystems. Could start with weighting them all the same, or do one weighting scenario vs an unweighted scenario.

Kevin mentioned that when selecting core areas to meet our target objectives, important questions to address are:

1) How much area do we include in core areas?
2) Should we depict core areas as exclusive areas, or show a gradation of importance? The group decided it was best to show tiers where all of the watershed was in a tier.
3) Should we enforce a maximum size for a core area?
4) How do we delineate core areas for the aquatic systems when they are somewhat continuous?

Ben: Kevin is pointing out some small "dot" core areas and linear features that seem to have high integrity, but just aren't that big. Those small dot areas may be important to a local land manager. Do we want to come up with one monolithic design or create a flexible system? It is important to make it extremely clear what our intentions are.

Response/discussion: Seems we wouldn't want it so flexible that everyone is off doing their own thing. The benefit of our project is to coordinate a design (a collective conservation strategy); if we can agree there is more power behind a decision with that support. Basically, having a set design, but one that is flexible when new or different information arises, is ideal. Hopefully the tools will accommodate that. Also, the individual tools and data layers have value in and of themselves and each can be used if there is a particular need.

6) UMass team to produce at least 2 versions of integrity, one with equal weighting and one reflecting our suggested change weights. Each of the 2 versions will have 2 products, integrity on a continuous scale and integrity "sliced" by, say, the top 20%.