

Terrestrial Core Team Meeting

19 August 2014

Introduction

Randy: The focus of this meeting will be discussing the application of weighting criteria. I hope our discussion will include specific species. We want to weight the representative species for input into the core area selection index. The inputs will relate to the habitat models created by Kevin McGarigal and the UMass team. This is complementary to the rare species, which will be added on top of everything else. I understand that we want to see an “unweighted” version of this input, but we also want to give weighting species a shot, so that we can see what the impacts of such weighting are. The table you are looking at is intended to facilitate this thought process.

I want to start by reviewing the overall approach. In the table, the final column - ‘Weight/Priority’ - would affect how the species would be treated. The impact of weighting will be translated into the percentage of landscape capability that will be captured in the final selection index.

Please refer to the chart of cumulative habitat quality % vs. habitat area % at the bottom of the weighting matrix document. What I am thinking is that in a neutral weighting, 50% of the habitat quality would be conserved. Higher or lower weightings would mean adjusting the cumulative % of habitat quality up or down by some amount. I think this graph is relatively representative of what other species curves would look like, particularly with regards to the observation that to get 50% of the habitat quality, we would need to conserve the top 20-25% of the habitat extent.

Any comments, questions, or responses?

There were none.

We previously agreed on the first 3 columns: threats, responsibility, and rarity. I subdivided threats and responsibility one degree further. The three species for which we want to increase population are woodcock, eastern meadowlark, and wood thrush.

Patrick: Why is marsh wren at +2, woodcock at +1, and meadowlark at 0 right now?

Randy: Can we actually hold off on question this precise for now? Because I want to go over the whole table, and I don’t have a lot of confidence in the outcomes as they exist at the moment.

Threats

Emily: “Facing significant threats” in the watershed? Are you looking at threats and whether they exist, or how bad they are? Do the 0s mean you chose it to be a 0?

Randy: I haven't done a thorough assessment of these species by any means. One question is - do we want to go through the list species-by-species? Beforehand though, I'd like to step through the framework of the rest of the matrix.

Emily: I agree with that but I'm not sure I understand the definition of "facing significant threat". And that's something we have to all agree on.

Randy: I was thinking of threats that could be considered limiting factors within the Connecticut River Watershed. Things that would limit population growth.

Scott: I'd like to clarify that 0 doesn't mean that the species faces zero threats. It's more of a relative weighting system. The threats to this species aren't greater or lesser than other species in the watershed.

Emily: So if a species is at risk for losing habitat, a 0 means we won't worry about it?

Randy: No, it just is not different from other species.

Emily: I do think in some cases, that you have species whose habitat is more threatened than the habitat of other species. Many universal threats affect species differently. Blackpoll warbler (BLPW) is at risk because its habitat is at risk.

Jeff: It looks like Randy tried to capture exactly the point that you are making by giving the Value field a plus.

Jeff: We're trying to make a subjective process more objective.

Emily: I'm just concerned that this method is too oversimplified and that it might not be defensible. Considering how complicated the model is, I'm worried this will end up being meaningless.

Jeff: Do you have any ideas for incorporating the metrics you are using in your other work?

Emily: We are doing a much more complicated process. Some parts are similar, like starting with qualitative rankings. I think if we're going to put threats in there, we have to be careful about defining things. If we're not going to put threats in there, we put more emphasis on the other fields.

Randy: Yes, so I guess the question is whether we can incorporate some sort of simplified threat assessment in a timely manner, or remove the threat column?

Georgia: Wasn't climate sensitivity a key piece of the threat assessment?

Randy: Kevin is certainly looking at climate vulnerability as something that he's trying to model. It's something for which we have more objective information. I don't know if, other than this, we've specifically incorporated climate sensitivity.

George: If it was incorporated into threats, I thought keeping threats would be a good idea.

Emily: If it helps I could send a list of the broad threat categories that we're looking at for the Northeast states.

Scott: I think that the population trend can show as an integrator of all threats that affect species over time. From a practical perspective, there is a close relationship between the two columns. Maybe the second threat column isn't very helpful. We could think of it as threats that are not revealed by the current population trend. We also will be having projections of loss of habitat due to development from the UMass team.

Randy: I like what Scott was saying. The threats do reflect one another, so maybe we do need to reconsider whether we need another or different category to reflect threats.

Responsibility

Randy: I divided the responsibility criterion into regional responsibility for landscape capability and global responsibility based on % of global population in the watershed.

Randy: For the species for which we have that info, it ranges from 0.5% (marsh wren, eastern meadowlark) to 15% for BLPW. The Connecticut River Watershed is 5-10% of the Northeast Region. We have 2 species, blackpoll warbler and blackburnian warbler for which the Watershed supports a disproportionately large amount of these species' habitat compared to what is available across the region. For other species, the amount of habitat in the Watershed is proportional to the size of the Watershed within the Region (~5-8%): woodcock, wood thrush, and black bear. Meadowlark and marsh wren are examples of species whose habitats are relatively in the Watershed.

A question to all of you: do these numbers help give us a sense of which species should get a higher weight because of the responsibility that the Connecticut River Watershed has to maintaining the species across their watershed, and range. We might want to bump up the warblers, and worry less about meadowlark and marsh wren. It's hard to see us bumping up a species just based on population numbers. But if they are pretty common outside the watershed, maybe we don't have to worry about them here as much.

Emily: I think it's hard to tell if the numbers are significant. I don't know if I would downgrade something based on this.

Georgia: Should we be concerned about the species being representative? If a species is more representative of the watershed, do we still downgrade it?

Randy: That's a great point. Just based on that comment, it sort of sounds like we don't downgrade anything, but perhaps we could still upgrade?

Scott: One to think about for higher weighting is blackpoll warbler. I think it's justified because it's mostly here, and so is its habitat. I think if we picked that, it's pretty likely that you'd bring along a suite of species that make sense in that habitat. So this would reaffirm the approach.

Patrick: Looking at past decline could help you decide whether to weight it or not. Western Meadowlark, some of those we should, perhaps, weight heavier.

Emily: Maybe we just don't need both responsibility scores. I'm not sure they really reflect differences. I think we can do just one.

Randy: That's a good observation. They may be too redundant. Simplifying is a good thing.

Jeff: Both the threats and regional responsibility are parallel. There was an intent to have an overall look at the species on its full range, and then a more focused look at the whole watershed. We should address both the overall trends, and what we are trying to do in the Connecticut River Watershed. But I'm not sure how to do that consistently.

Randy: In terms of responsibility, is that a category where we think about increasing weight for species, or not decreasing weight for species? Is anyone concerned that even if we have a relatively small proportion of the population or a low habitat capability in the watershed, that if we keep the weighting neutral/0 that such a decision is inappropriate.

Jeff: Even if we down weight, they will still influence the core area selection.

Randy: Ok, so if we move forward choosing not to "de-weight," are we comfortable moving forward with a + for blackpoll warbler? I feel like it should at this point. Blackburnian warbler represents mature mixed forest. It has a lot of good habitat in the watershed. Does it warrant an increased weight?

Emily: That's tough, because I don't know how much mapping we can do on the age of the forest. What does mature mean? I'm just trying to figure out what the weighting represents, that might also occur in high percentages. What other species are being represented?

Jeff: That brings up an interesting point about the guild. What if we focus our weighting on the guild?

Emily: I'm not sure I follow.

Jeff: I was trying to discuss it more directly. If spruce-fir forest is the guild for BLPW, should we look at that?

Emily: But we have the ecological value. Aren't we double-dipping then?

Scott: We're not necessarily double-counting. A species could have a high occurrence and we could be concerned about habitat due to climate change. These would be different impacts. The ecosystem model will key in on large, intact blocks of forest. It will focus on biomass. So it does look at age, from an indirect perspective.

Eric: I don't have much to add other than that I think Georgia's point is really important. We shouldn't down weight a species without thinking about the other species it represents. During this conversation I was comparing our list to IUCN. All of these species are least concern, except wood turtle, which is endangered, and wood thrush, which is 'near threatened'. I think we should be looking at these species.

Emily: We could look at some other species lists, like state lists of conservation need, or the regional species of greatest conservation need. But these lists are under active revision. It's just really hard to think about this because the representative species doesn't necessarily need to be weighted differently, but they represent rare species that do need to be elevated.

Rarity

Randy: Right, we need to think about what these species represents. I also want to move us along to talk more about regional rarity. As I went through this I struggled to figure out what our definition of regional rarity would include, and what types of species we would weight higher or lower, based on some concept of regional rarity. So it becomes a bit of a struggle to apply these criteria to these representative species while remembering what species they are representing. We could look at wood turtle, which is rare and represents a rarer habitat guild.

Eric: I think wood turtle has unique problems.

Jeff: So we also talked about, but haven't decided on, how to approach the rare species. On the ecosystem side we decided to include the rare communities and burn them in with a rank of 1. I suspect we'll have to agree on a similar approach here.

Scott: Species that occupy matrix forest will probably end up in the final design. If something is a rare type, we want to make sure it winds up represented in the final design.

Randy: Perhaps it would help if we reviewed the landscape capability maps and what they look like. First, let's look at marsh wren. You can see that the habitat is pretty spotty and not ranked really highly. Wood thrush is more widely distributed, but you can also see this range of landscape capability values. Same with black bear. I don't know if we want to use the regional rarity category to balance these things, but these models are indicating to us the rarity of the habitats that these species represent, both in the watershed and in the region as a whole. Do we agree on this?

There were no comments

Scott: Does anyone disagree?

Eric: When we do representative species, I always have to think about the other species they represent. Some of this seems redundant. Blackpoll warbler is already covered by up-weighting the high elevation forests. But I don't think Woodcock is represented by the ecosystem approach.

Scott: There are some members of the group who are really interested in the species approach, so we can't abandon it.

Randy: Hearing no objections at this point, we'll move forward with the rarity values in the draft document. If anyone comes up with an objective or notices a problem, please share.

Climate Vulnerability

Randy: Moving next to climate vulnerability...we do have some clear information here to inform our decisions. Just based on this list of representative species, there are a few that stand out in terms of whether they are predicted to experience large increases or decreases in climate suitability. In the past we've discussed wanting to focus on areas of climate resilience. So I've indicated in the table that species losing climate suitability get a +, perhaps they should not. Which direction should we go, and how far?

Patrick: Is this regional or climatic vulnerability?

Randy: It is just the Connecticut River Watershed.

Patrick: If they're globally vulnerable, maybe we should make a last stand. But if they are just regional, then maybe we let those go.

Emily: I keep going back to if we downgrade climate vulnerable ones, then does that mean we downgrade all the other species. Do we know if the benefit/loss of climate vulnerability for the representative species extends to the represented species?

Scott: That's a good point, and a hard question to answer. For some of the declining ones, their habitat is threatened as well. But for others like meadowlark, their projected increase seems purely an artifact of climate. So we might have to go case by case.

Randy: I think the same thing applies to freshwater marshes. If anything the concern is that they'll decline due to changes in temperature and precip. For marsh wren specifically, it's possible that such conditions will benefit that species. Maybe we keep pluses for species that represent habitats we think are vulnerable, keep the rest at neutral?

Scott: Time check, it's 3:22

Societal (S)/Ecological (E) Value

Randy: I would like to get people's opinions on the 'Societal/Ecological Value' category. Should we include it in the weighting exercise? It's a very subjective category.

Georgia: We were thinking of game species for this, right?

Randy: That was part of it. Or recreationally important species. Although, thinking of them as representative species makes it difficult. The whole guild is probably not hunted. But ecologically, from an ecological services perspective, we might be able to place that on the whole guild of represented species - but again, probably in a fairly subjective manner.

Emily: For me, subjective is okay. And societal value is really important. Like moose. People expect to see these animals. Wood thrush is another. It's a weird category but interesting.

Georgia: Maybe it would help to consider if it would bother us if a species was left out?

Emily: This is the category we'll get the most flack about. The concept is to get people's attention on these areas; it's thinking about the outreach after we're done. What's the story behind these places that we want people to get excited about conserving? Maybe it should be used outside of the analysis?

Scott: Marvin, I hate to put you on the spot, but you were partially the inspiration for this category.

Marvin: I agree with Emily, and that we need to focus on the story. I think this is an important column. I see that it has the same problems that we've been discussing all the way along with subjectivity, but I would hate to see it dropped because of those problems.

Randy: So how would we define species that we want to place weight on because of social value? We have hunted species (duck), iconic species (moose, bear).

Jeff: Rarity could fall in here as well. It's certainly a societal value.

Marvin: Well for game species you have the information. I would look at the SWAPs for indications of iconic species. I think it would be more seat-of-the-pants, but if we put something out there, we'll certainly find out if we're right or wrong.

Patrick: Obviously the species with economic impact will get additional weight.

Marvin: This column clearly has a public marketing value - that's where I was coming from. Maybe it's not appropriate as a criterion for weighting, though.

Emily: I think if you're weighting bear higher than wood thrush because it's hunted and common, that's going to be a hard sell with our conservation partners.

Randy: I agree.

Emily: Although I like thinking about this stuff.

Marvin: It has to be a consideration and part of the discussion, and should be all the way through.

Randy: So maybe we go in this direction. As we go think about how each of these things connect to societal values, in order to effectively tell that story. But maybe in terms of the plan, maybe we leave it out. So for now we'll set aside the S/E value, as far as weighting goes. Overall what I was thinking was really, once we agree on the columns, adding up the pluses and minuses across the table to get our weights. And then those pluses and minus - each plus or minus equate to a 10% increase or decrease in the amount captured in the core areas.

Jeff: I notice that if the last column is a 0, this equates to 50%. Are you saying that each plus and minus is 10%?

Randy: Yes, and it's just a starting point - we'll have to talk to Kevin.

Emily: So we'll try and resolve this at the next core team meeting?

Scott: Yes, but I think we'll have to do some more work before it. We'll have to review what the represented species are.

Emily: What I'm most curious about is how big the threat to the species is. For example, all species are affected by pollution, but maybe some more than others. And maybe that could be the basis for determining the relative degree of threat for a species. That gives us something to hang our hats on. It might give us more credibility. Does that make sense to anybody else?

Jeff: I wonder about how much...eventually we'll have a column here for urban development. We have climate vulnerability. We are trying to consider the ecology, and also the threats. I think you're right Emily that it helps. We have to nail this down better. We need to figure out how to narrow these columns and incorporate some of this language in a more finite way. I think it would be hard to have a subroutine within threats to come up with a plus or a minus. I think it would be better to spread it across columns. Basically, we need to more narrowly define each column and get rid of columns that are too general right now.

Randy: I can commit to revising this table, and incorporating comments from others beforehand, so that we can discuss this further at the core team breakout session.

Key Decisions Document

Randy: Scott, do you want to talk about the document you sent out before the meeting?

Scott: Yes, thanks. This is a first draft. Please send me any feedback. We are also hoping to go over this during the core team meeting.