

**Northern Pass Wildlife Agency Meeting  
Conference Call  
January 14, 2013**

**Participants**

Tony Tur (U.S. Fish and Wildlife Service), Jill Kilborn (New Hampshire Fish and Game), Will Staats (NHFG), Caitlin Callaghan (Department of Energy), Travis Beck (SE Group), Dan Belin (Ecology and Environment, Inc.), Courtney Dohoney (E & E), Carron Meaney (E & E), Sean Meegan (E & E), and Rachel Brancato (E & E).

**Meeting Details**

Project Schedule and Updates

After introductions, Dan Belin provided an update on the Project schedule which he previously sent out to the group on January 7, 2013 and that outlined the SE Group Team's timeline to allow for commencement of tracking surveys this winter. Northern Pass has not yet publically announced the northern 40 miles of the route yet, and the SE Group Team has not been given a timeline for when to expect that additional data. The current effort, therefore, will focus on the southern 140 miles of ROW (which are expected to follow an existing right-of-way) until the northern 40 miles can be incorporated.

Tony Tur requested that in the future, meetings be scheduled and materials provided at least two weeks in advance to allow for sufficient agency review and preparation.

General Approach to American Marten and Canada Lynx Habitat Suitability Models

In order to focus the winter tracking efforts for the American marten and Canada lynx, the SE Group Team is proposing to use a habitat suitability model to identify areas within the ROW that are suitable habitat for marten and lynx. Using the desktop modeling results, the targeted areas will be reviewed with USFWS, USFS, and NHFG to ensure that the model has identified the most applicable areas for field surveys.

Tony Tur requested an overview of how the models were developed, which Belin provided explaining that the initial parameters were outlined last year when the SE Group Team was preparing for the tracking surveys, but because of the cancellation of the surveys, the model was not completed. The draft model, as provided to USFWS, NHFG, and the USFS, includes parameters from several models and does not solely rely on previous marten or lynx models. Our goal is to use previous models as reference points but to incorporate the most recent data possible.

Tony recommended referring to the Hoving's model, New Hampshire Wildlife Action Plan and the Carlos Carroll models as reference models or guides for the development of a habitat suitability model for the Northern Pass project.

Model Parameters

**Landcover**

Jill pointed out that the Wildlife Habitat Land Cover data from the NH Wildlife Action Plan is predicted land cover and has not been field verified. If looking for verified land cover, Jill pointed to the 2001 National Land Cover Database as the best option. Dan reported that the SE Group Team has LiDar data available which can be used to provide a level of confirmation of the habitat types included within the ROW.

### **Connectivity**

The SE Group Team is also looking at a way to incorporate “connectivity” into the model as a parameter that would highlight areas that could be used as travel corridors between denning or foraging areas. As Carron explained, this will allow for a landscape level analysis to fully evaluate lynx and marten use within the ROW. Will recommended that the SE Group Team review information from the “Staying Connected” initiative by the New Hampshire Nature Conservancy to evaluate connectivity issues for a suite of species. Additionally, Will recommended reviewing work being done at the University of Vermont in Bill Kilpatrick’s lab looking specifically at lynx connectivity. Jill will provide contact information for Peter Steckler at TNC and Laura Ferrels at UVM.

### **Elevation**

Jill and Tony agreed that elevation is a bit of an unknown when studying lynx habitat. Tony pointed out that in the western U.S., lynx are known to use high elevation areas but in the eastern U.S. that trend has not been well documented. Also, as pointed out by Dan and agreed to by Jill and Tony, the model is potentially double counting elevation as inclusion of the elevation parameter in addition to habitat classes such as “high-elevation spruce-fir forest” results in two elevation related parameters. Further, Jill noted that including high snowfall areas can also reflect elevation, and that for marten as you move south in New Hampshire the snow decreases, therefore elevation becomes more important. Given the uncertainty regarding elevation data and its inclusion within the land cover parameter, Jill and Tony recommended removing elevation from the lynx model.

### **Snowfall**

Currently the SE Group Team’s lynx model uses National Oceanic and Atmospheric Administration National Climatic data Center data from 1981-2010 as the basis for snowfall. Tony recommended reviewing Carroll’s snowfall adaptation of Hoving’s model which included a factor for lake effect snow. Jill also recommended Paul Jensen’s data which used Hoving’s data and has been updated. Jill will contact Jensen to see whether he is comfortable sharing his data.

Jill felt that the 70” snowfall threshold currently used in the lynx model should be double checked against Hoving’s model to make sure there is a citation in the literature that supports that snowfall amount. She felt 70” was a low number for a threshold.

Jill noted that in identifying marten habitat, snowfall has been found to be one of the biggest drivers, more so than landcover, as marten will use a wide variety of forested habitat. Based on this recommendation, the SE Group Team will consider adding a snowfall parameter to the marten model.

### **Known/Observed Lynx and Marten Locations**

Tony explained that the inclusion of lynx observation data in the model may be problematic as the lack of comprehensive lynx surveys in New Hampshire may incorrectly identify areas as having low habitat suitability when really it is only the lack of data (e.g. survey effort) that makes it unfavorable. He suggested that if lynx observations remain in the model then they should be given a very low weight (0-10%). Similarly with the marten model, Jill felt that the known/observed locations component should receive a low weight as it could be biased against areas with less intensive survey effort even though habitat is more suitable. Dan said that a model scenario could be run without the known locations to see their effect as a variable.

Jill also suggested that the buffer around observations for lynx and marten should be more closely tied to the home range of the species. In the case of martens, males have a home range of up to three square miles (females will use a smaller area of approximately two square miles), therefore using Jill's recommendation, the buffer area should be three miles. The SE Group Team will review the home range for both lynx and marten and will place appropriate buffers based on home ranges.

#### Lynx and Marten Effects Analysis

Tony also brought up a concern in differentiating the use of different habitats by lynx. For example, if the project ROW requires clearing of early successional forest which serves as snowshoe hare habitat – a food source for lynx – that would impact the species differently than if the ROW required clearing of lynx denning habitat (more mature stands with coarse woody debris). To address this issue, the SE Group Team agreed that during the surveys, recording the habitat that lynx are using near the tracks will be useful in determining the different potential effects. To identify potential denning habitat, Tony recommended a 2008 paper by Organ et al. in the Journal of Wildlife Management that characterized lynx denning habitat in Maine.

#### Scat/Hair Samples (Provided separately by email from Leighlan Prout – USFS WMNF)

"I don't really have any comments on your proposed protocols. Everything looked good to me except for one thing: it's been a while, but my understanding from a few years ago is that the lab we used to analyze feline scat suggested that when the scat is collected, it should be placed in a PAPER bag and shipped ASAP just in a regular box (no freezer pack). Apparently, moisture degrades the DNA pretty easily (which I think we all know), so freezing it and then thawing it for analysis doesn't work that well. They're trying to get the few cells that are scraped off by the scat as it exits the animal, so it's a bit of a needle in a haystack, unlike hair follicles, which are more visually obvious. Anyway, you might want to check with whatever lab you're going to use and make sure of the proper protocol for scat.

As an aside, if you are able to collect hair from backtracking, I believe it's best to place it in a vial with some form of desiccant prior to shipment."

#### Deeryards

In reviewing the deeryard data sheets for the surveys, Will noted that recording the diameter at breast height for scarring is not necessary – documenting the presence of scarring is sufficient.

#### Schedule/Next Steps

Dan suggested that after the SE Group Team has a chance to update and run the models, that an in person meeting in NH with USFWS, NHFG, and USFS would be useful in refining the survey areas. January 30, 2013 was discussed as a potential meeting date as both Tony and Will are available.

#### **Action Items**

- Jill Kilborn to provide contact information for Peter Steckler at TNC and Laura Ferrels - completed
- Jill will contact Paul Jensen to see whether he is comfortable sharing his data.
- SE Group Team to update lynx model to remove elevation and incorporate new data as it becomes available.
- SE Group Team to review TNC and UVM data as part of adding a connectivity parameter to the lynx and marten models

- SE Group Team to review appropriateness of buffers for known lynx and marten observations