**CT River Watershed Pilot Project – Applying Weighting Criteria to Representative Species**

The following matrix is one suggestion for a tool that might assist the Terrestrial and Wetland Subteam in applying the weighting criteria that the Subteam previously discussed and identified for use in assigning weights to Representative Species in the context of informing the process of how to identify core areas based on combining species landscape capability models into an optimized selection index. The categories of “threats”, “responsibility”, and “rarity” are criteria the Subteam agreed would be useful for the purposed of weighting species. “Climate vulnerability” and “societal/ecological value” are criteria that have not been discussed in detail by the Subteam but could also have value in weighting species.

The suggested format in this matrix is to use “+” to indicate elevated concern, responsibility, or value for a given species (rows) based on the criteria (columns). “0” is intended to indicate neutral value, responsibility or concern for a species, and “-“ is intended to indicate a lack of concern or responsibility for a species. Weights or priority levels could be assigned based on a rule set or algorithm for combining the number of +, 0, and – entrees across columns for each species, but clearly will need additional thought and consideration for the most appropriate method for assigning weights or priority levels.

The matrix entries presented in this document are intended only as a starting point for discussing whether this could be a useful tool. Subteam input would be necessary to assign final matrix entries and decide on final weights.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Species | Habitat Guild | Threats | | CRW Responsibility | | Rarity |  | Climate vulnerability in CRW? (based on projected change in climate niche envelope) | Societal (S) / Ecological (E) value | Weight / Priority? (% of LC to be captured in final selection index for core areas) |
| Experienced significant population loss? (based on population trends) | Facing significant threat(s) in CRW? | High regional responsibility for the Northeast? (based on % of total regional Landscape Capability w/i CRW) | High global responsibility? (based on % of global population in CRW) | Regionally rare? |  |
|  |  |  |  |  |  |  |  |  |  |  |
| American Woodcock | Young forest w/openings | 0/+  -0.4% in BCR14  -4.9% in BCR 30 | +  lack of disturbance | 0 5.3% of LC | 0 3% in CRW 17% in NE | 0 |  | 0  -6.6% | + (S)  + (E) hunted/ES | +1  (60%) |
| Blackburnian Warbler | Mature mixed forest | 0 0.4% in BCR 14 -1.4% in BCR 30 | 0 | 0/+ 11% of LC | 0 3% in CRW 15% in NE | 0 |  | + -70.2% | 0 | 0 (50%) |
| Blackpoll Warbler | Spruce-fir forest | 0 -0.7% in NE | 0 | 0/+ 15.2% of LC | - ?? | 0 |  | + -93.7% | + (E)  Spruce-fir | +1? (60%) |
| Eastern Meadowlark | Pastures & grasslands | + -3.4% in BCR 14 -6.7% in BCR 30 | +  habitat loss | -  0.7% of LC | - 0.1% in CRW 3% in NE | 0 |  | - 43.7% | 0 | 0?  (50%) |
| Louisiana Waterthrush | Riparian forest | 0 0.4% in BCR 14  -1.0% in BCR 30 | 0 | 0 3.5% of LC | 0 2% in CRW 33% in NE | 0 |  | -  94.7% | + (E) riparian | 0 (50%) |
| Marsh Wren | Freshwater marshes | 0 2.0% in BCR 14 1.6% in BCR 30 | 0 | - 0.5% of LC | - 0.4% in CRW 1% in NE | +? |  | - 176.7% | + (E) fresh wetlands | +2? (70%) |
| Northern Waterthrush | Forested wetlands | 0 0.5% in BCR 14 -1.2% in BCR 30 | 0 | 0 2.1% of LC | - 0.3% in CRW 0.5% in NE | 0 |  | + -76.1% | +(E) forest wetlands | 0 (50%) |
| Ruffed Grouse | Young forest | 0 -0.4% in BCR 14 0.2% in BCR 30 | 0? | 0 | 0 | 0 |  |  | 0 | 0 (50%) |
| Wood Duck | Swamps & floodplain forest | 0 2.0% in BCR 14 3.0% in BCR 30 | 0 | 0 | 0 | 0 |  |  | +(S)  +(E) hunted/wetlands | +1?  (60%) |
| Wood Thrush | Mature decid. forest | + -2.1% in BCR 14 -4.6% in BCR 30 | 0? not habitat limited in CRW? | 0 6.8% of LC | 0 4% in CRW 30% in NE | 0 |  | 0 -1.6% | 0 | 0 (50%) |
| Wood Turtle | Forested streams & adj. uplands | +? | +? | ? | ? | +? |  |  | + (E)?  Forest streams | +1 (60%) |
| Black Bear | Large tracts of forest | 0 | 0 | 0 6.4% of LC | 0 | -? |  |  | +(E)? large tracts | -1 (40%) |
| Moose | Large tracts of mixed forest w/wetlands | 0 | 0 | 0 | 0 | -? |  |  | +(E)? large tracts w/wetlands | 0 (50%) |

With regard to what weights or priority levels would actually translate into, one idea is that we could ask that the optimization process for creating the final, combined selection index for core areas based on the species models be developed such that the % of cumulative landscape capability captured in core areas be larger for species with increased weight or priority compared to species with neutral or decreased weight (e.g., 60% of LC for “+” species, 50% of LC for “0” species, and 40% of LC for “-“ species). See graph below for an example of how cumulative landscape capability relates to percent of habitat necessary to accommodate that level of LC. Again, the details of such an approach and how it would be applied need to be fleshed out, but perhaps this example will help with thinking about how weights could be applied to influence the final landscape design relative to selection of core areas based on species models.

