



Upon examination of the resulting matrix it became clear that another step was needed to remove those SCGN x invasive interactions that were unlikely to result in any significant impact. There are obvious instances where invasive species do not pose a significant threat to an SGCN coexisting in space. To remove these problems, we developed an “applicability matrix”.

The applicability matrix was constructed similar to the habitat matrix with 302 columns and 734 rows. For each invasive species we identified the taxa, or in some cases individual SGCNs, that could be potentially impacted (either directly or indirectly) by the invasive. For example, brown headed cowbirds only impact avian SGCNs, so all other habitat coincidences are insignificant. We used a simple “1” or “0” to denote whether the interaction was significant or not and populated the entire matrix using available information.

The final habitat matrix was calculated by simply multiplying the habitat matrix with the applicability matrix. When applicability was deemed to be 0, the resulting value was 0 and was effectively removed from the summary calculation.

The final invasive species database that will be used for the rankings was created from the final habitat score matrix, specific invasive characteristics for each invasive species, and other related rankings by state or by taxa. We identified 4 major ways in which invasive species impact SGCNs, namely; displacement of SGCN (includes predation or infection), reduction in habitat (quality or quantity), drain on resources, or alteration of ecosystem processes.

We will use this database to produce the final rankings of importance for the invasive species as the final step of our analysis. We will accomplish this via a set of “rules” and related weighting values on each invasive species. This database will also be made available for manager to apply their own set of criterion to develop new lists based on changing importance, objectives, etc.

Tables, narratives, and figures are already in development for the final report. Final rankings and report synthesis will comprise the focus of our remaining work on this project.

#### Difficulties Encountered:

The only unanticipated activity encountered during this quarter was the need to apply additional time and resources to the development of the applicability matrix. However, this action will ensure the results of the analysis are more useful and the resulting rankings more accurate.

#### Activities Anticipated Next Quarter:

1. Complete the final ranking of invasive species at the regional and state levels using documented importance criteria and weighting.
2. Complete the final report providing all necessary background information, explanation of methodologies, and results.

#### Costs:

Are you within the approved budget plan? Yes

Are you within approved budget categories? Yes, expenses and matching funds have been used to support labor for the project.

Signature

A handwritten signature in black ink, appearing to read "Scott D. Klopfer", written over a horizontal line.

Date January 6, 2011

Scott D. Klopfer for Dr. Glen Stevens