**PROJECT TITLE:** Rapid assessment of wildlife habitat for environmental review

**I. PROJECT STATEMENT**

Planning for forest and associated habitat management remains critical to evaluating the impact of proposed management activities on wildlife in Minnesota. Typical planning efforts have attempted to quantify the magnitude and extent of changes in wildlife habitat related to current or proposed forest management plans, but with only modest success for a few species. Among neighboring states, Minnesota typically requires the highest level of detail and rigor during forest management plan reviews. This is especially true for forest industry development projects and their review (via Environmental Assessment Worksheet and/or Environmental Impact Statement). In such cases completing the review requires considerable time and expense that discourages such planning, regardless of potential benefits. To address these problems, continuing research since the statewide Generic Environmental Impact Statement (GEIS1) has led to the development of a forest wildlife habitat model as a tool to assist natural resource professionals through rapid assessment of changes for short- and long-term projections. This project will extend this tool into a highly accessible and versatile online application for use by natural resource professionals in county, Department of Natural Resources, Forest Service, non-governmental organizations, and others tasked with forest management planning and environmental review. This habitat model includes sub-models for 172 native Minnesota wildlife species including several threatened, endangered, and special concern species and has demonstrated capability for assessing habitat change over more than four decades of forest management. In brief, the model will provide a rigorously developed tool for local, regional and statewide planning and project analysis that will substantially reduce planning and review time and costs throughout the state.

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1 Research on forest wildlife habitat models that began with the GEIS on Timber Harvesting and Forest Management in the early 1990s.

**II. PROJECT ACTIVITIES AND OUTCOMES**

**Activity 1:** **Request and incorporate peer-review from wildlife professionals** **ENRTF BUDGET: $ 16,486**

The basic wildlife habitat model was developed by over 25 wildlife and forestry professionals during the GEIS in the early 1990s. This represented a considerable body of work that defined forest species-habitat relationships for 172 native, forest-dependent wildlife species. Species groups include birds (138, including roughed and spruce grouse), small/medium mammals (22), large mammals (4, including black bear, moose, white-tailed deer, and grey wolf), and herptofauna (8). While some species models have been refined, many of the original habitat requirements and relationships still represent the most relevant information available; however, wildlife research continues to refine habitat needs for certain species Thus, previously modeled relationships will be sent to experts in ornithology, mammalogy, and herpetology at the University of Minnesota and Minnesota Department of Natural Resources for review and suggested revisions based on new research. Peer-reviewed comments and changes will be incorporated into the model and fully documented (e.g., the exact change, date of change, and source of suggested change). Previous species-habitat relationships will also be archived.

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| **Outcome** | **Completion Date** |
| *1. Peer-review of species-habitat relationships (birds, mammals, and herptofauna)* | *March 2021* |
| *2. Incorporation of peer-review comments* | *June 2021* |

**Activity 2:** **Develop and test an online application for the wildlife habitat model** **ENRTF BUDGET: $ 152,041**

An online interface will be developed to allow efficient use of the habitat model during environmental review and other applications. Website and user interface design will emphasize including intuitive features for ease of use by natural resource practitioners in the state. Users will have access to current habitat conditions at multiple scales (e.g., Public Land Survey System township, county, ecoregion, state) using the most up-to-date U.S. Forest Service, Forest Inventory and Analysis (FIA) database. In addition, users will be able to upload custom project or area specific data for evaluating habitat conditions or impacts from proposed management. Extensive support files will aid use of the interface and model. Outcomes include access to current and historical trends in wildlife habitat in their area of interest and rapid and cost effective completion of the habitat evaluation requirements during environmental review. The online application will undergo internal and external testing from county and MN DNR staff using their own forest inventory data. After thorough vetting, the website will open for general use, hosted by the Interagency Information Cooperative (IIC; gis.iic.umn.edu). Website analytics will be periodically reviewed to ensure relevancy and utility, and technical support will be provided as needed by IIC staff or affiliates.

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| **Outcome** | **Completion Date** |
| *1. Development of an online application of the wildlife habitat model* | *September 2021* |
| *2. Internal and external testing by stakeholders using several sources of forest inventory*  | *December 2021* |
| *3. Update interface with testing results and launch stable release* | *March 2022* |
| *4. Track website use and provide scientific and technical support*  | *Ongoing* |

**Activity 3:** **Conduct training webinars, workshops, and demonstrations**  **ENRTF BUDGET: $9,473**

After successful launching of the vetted online application, all pertinent stakeholders will be contacted regarding trainings in the use of the online tool. Multiple online webinars and on-site workshops will be given to train practitioners on the use of the habitat model interface. During the trainings, users will be allowed to bring their own project data and will be guided through the process of evaluating their own habitat conditions or impacts. The model will also be demonstrated at in-state professional meetings, including the Minnesota Chapters of the Society of American Foresters and The Wildlife Society.

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| **Outcome** | **Completion Date** |
| *1. Contact stakeholders for scheduling trainings* | *October 2021* |
| *2. Conduct training webinars, workshops, and demonstrations* | *June 2022* |

**III. PROJECT PARTNERS AND COLLABORATORS:**

Receiving funding: The project team includes Dr. John Zobel from the University of Minnesota (project lead).

Not receiving funding: Dr. Chris Edgar from the Interagency Information Cooperative (Director), University of Minnesota, and U.S. Forest Service, Forest Inventory and Analysis; Mark Weber from St. Louis County (Land Commissioner); Dr. Alan Ek from the University of Minnesota; and Dr. Eli Sagor from the Sustainable Forests Education Cooperative (Program Manager), University of Minnesota.

**IV. LONG-TERM IMPLEMENTATION AND FUNDING:**

The online application will be hosted on University of Minnesota servers and displayed on the Interagency Information Cooperative (IIC; gis.iic.umn.edu) website in perpetuity. Website analytics will be periodically reviewed to ensure relevancy and utility, and technical support will be provided as needed by IIC staff or affiliates. The application will also be available for operations by the user community within their specific organizations. In addition, wildlife expertise will be periodically solicited to review specific species-habitat relationships to ensure they reflect current research. Any necessary updates (technical or scientific) going forward will be supported by internal IIC funds. Otherwise, no other long-term costs are envisioned.