

FIRST INTERIM PROGRESS REPORT  
JULY 1, 1993

**AN ENERGETICS-BASED HABITAT MODEL FOR  
MARTEN IN WESTERN NEWFOUNDLAND**

A RESEARCH COMPONENT OF THE MODEL FORESTRY  
PROGRAM IN WESTERN NEWFOUNDLAND

prepared for

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This report summarizes the work accomplished for the project titled "An energetics-based habitat model for marten in western Newfoundland," for the period from project initiation until 1 July 1993.

The first priority was to gather the relevant literature. By April 23, over 2,000 references were compiled into a 91-page bibliography organized by subject matter. This literature search clearly illustrated those aspects of marten ecology that are well known, such as feeding habits, and those that are poorly understood, such as interactions with other forest carnivores. A copy of this document is available, either as hard copy or on disk.

Once the literature had been compiled, an outline of the research needed to create the habitat model was developed. The project outline first provides the most basic framework for the habitat model, and also illustrates the additional knowledge needed to create the model. Several research phases are suggested, and the contributions of each distinct phase to the model are shown. We brought this document to Newfoundland for the Technical Workshop for the Integration of Research Programs, held May 27-28 in Corner Brook.

Since our habitat model is based on marten energetics, metabolic tests were the most logical starting point for our research. We already possessed three marten in captivity at the time of project conception, however we decided that this population was insufficient for conclusive results. Three additional animals were captured in the western Uintah mountains during the last week in June.

The bulk of June was spent in preparing the environmental physiology laboratory for the first battery of marten energetics tests, which are scheduled to begin in July. The respiration calorimetry equipment, including environmental chambers, O<sub>2</sub> analyzers, CO<sub>2</sub> analyzers, air pumps, and a new computer data-analysis program, all needed to be tested and calibrated. Several dry runs were performed with live marten.

The remainder of the summer will include several weeks of energetics testing, where marten metabolic response to temperature will be examined. In addition, a trip to Halifax for the International Union of Game Biologists (IUGB) Congress is planned, and here we discuss our project with marten experts from throughout the world. The week after the meetings Bill will go to Newfoundland, where he will familiarize himself with the western Newfoundland ecosystem and the workings of the Model Forest. The remainder of Bill's time will be spent refining the experimental design for field work, which is scheduled to commence early in 1994.

This report summarizes the work accomplished for the project titled "Second Growth Forest as Marten Habitat in Western Newfoundland" for the period from project initiation until 1 July 1993.

The period from early April to mid-May was devoted to the development of the proposal for this project, and refinement of study design and methodology. From mid-May to the beginning of June, we prepared for the first field season. Brian arrived in Corner Brook, Newfoundland, on 7 June 1993.

The first week in Newfoundland was spent gathering and mobilizing the appropriate maps, equipment, and supplies for the field. During this time Brian had the opportunity to view the Victoria Lake study area from the air during a helicopter flight with the Newfoundland Forestry Division.

With the help of the Newfoundland Wildlife Division, Brian moved to the provincial forestry cabin at Glitter Pond, just north of Victoria Lake on the 15th of June. From June 15-25 he surveyed the area for study sites. The area is comprised of primarily 20-40 year old second growth forest and interspersed residual stands, along with certain regions of uncut timber.

As this study is dependent on examining habitat in each of five forest age classes (0-20, 20-40, 40-60, 60-80, and 80+), with an emphasis on age classes greater than 40 years old, we chose to look for an additional study area. The South Brook area, just to the south of Pasadena, appears to be a suitable study area, containing the entire range of forest age classes. This past week has been spent surveying the area for potential study sites. We decided to utilize both study areas, because each provides a different scenario that marten may encounter in utilizing second growth habitat in Newfoundland.

For the remainder of the summer, Brian will conduct small mammal trapping and habitat mensuration in both study areas. During research in the South Brook study area, he will be working out of the Pasadena Forestry Canada Field Station.