

Enhanced Forest Productivity Science (EFPS) Program Round 1 & 2

PROJECT NUMBER: EFPS 002-1-R1

Title: Assessment of Jack Pine Budworm Impacts in Ontario Forests for the Development and Implementation of a Decision Support System

Applicant: BioForest Technologies Inc.

Funding: \$318,000

Duration: 3 Years

Description: Research has unequivocally shown that insects and diseases cause significant losses to the forest resource annually. In Ontario, losses to insects in 1998-1999 totaled some 18.5 M m³. There appears to be an opportunity to significantly enhance wood volumes available to forest industry if losses to insects and diseases can be reduced in an environmentally sensitive and economically rational manner. This project will assess jack pine budworm impacts on jack pine and develop a Jack Pine Budworm Decision Support System.

PROJECT NUMBER: EFPS 003-1-R1

Title: Forest Co-op Growth & Yield Permanent Growth plot program

Applicant: Forest Ecosystem Science Co-operative Inc.

Funding: \$576,000

Duration: 3 Years

Description: This project will provide the quality of information required to accurately predict wood supply projections within forest management planning. The project is to provide improved estimates of tree and stand growth for both natural and artificially regenerated forest types over a wide range of site conditions under a variety of management intensities. The estimates will be used in forest management planning to determine wood supply. The data will be used to develop additional tools to aid in forest resource management.

PROJECT NUMBER: EFPS 008-1-R1

Title: Acquiring and testing Multiband orthophotography (and integrated LIDAR) for production of enhanced forest inventories in the Great Lakes St. Lawrence Forest

Applicant: Forest Research Partnership

Funding: \$532,000

Duration: 3 Years

Description: Multi-return LiDAR (Light Detection and Ranging) offers an opportunity to capture dense point data defining the first surface (canopy) and penetration into the vegetation cover with many points also hitting the forest floor. This project will: focus on forest cover types of the Great Lakes St. Lawrence Forest Region; will attempt to develop methods of enhanced inventory estimation for individual trees characteristics (as well as stand level attributes); will explore applications of wetland mapping and stream identification

PROJECT NUMBER: EFPS 009-1-R1

Title: Second-Generation Breeding and Testing for Jack Pine and Black Spruce

Applicant: Forest Genetics Ontario

Funding: \$320,000

Duration: 3 Years

Description: This project seeks to complete the research component of second generation tree improvement programs in three breeding zones in northwestern and four breeding zones in northeastern Ontario. The project will complete the breeding and testing components in seven second-generation tree improvement programs.

PROJECT NUMBER: EFPS 010-2-R1

Title: Environmental Impacts of Partial Harvesting in Riparian Reserves of Ontario's Mixedwood Forests: Post-Logging Assessment Phase

Applicant: Great Lakes Forestry Centre, Canadian Forest Service

Funding: \$206,000

Duration: 3 Years

Description: The overall goal of the project is to determine whether partial harvesting can be conducted within riparian AOCs of boreal forest streams in a way that is compatible with the environmental protection objectives of provincial guidelines. The project plan included the establishment of six research sites in low-order watersheds, collection of baseline data to characterize the sites, habitat and biotic communities, conventional clear-cutting in upland areas and partial harvesting in riparian reserves of three of the sites (the other three serve as reference sites), and post-logging assessment of response variables.

PROJECT NUMBER: EFPS 012-2-R1

Title: Extension Project - Forestry Research Partnership

Applicant: Forest Research Partnership

Funding: \$196,000

Duration: 3 Years

Description: The Partnership's Extension Program is the critical component for the delivery of relevant forest science to all levels within various organizations, from the boardroom to field/operational level. The project both leads and supports initiatives to transfer new and existing knowledge relating to Enhanced Forest Productivity to forest management practitioners and policy makers, and to actively involve them in its implementation.

PROJECT NUMBER: EFPS 014-2-R1

Title: Logging Damage Impacts

Applicant: Forest Research Partnership

Funding: \$96,000

Duration: 3 Years

Description: Recent second entries into tolerant hardwood stands have identified that expected basal area growth rates were less than was expected or modeled in our strategic wood supply models ensuring our levels of sustainability. The reduction in growth rate has been attributed to many potential factors including logging and site damage. The project will examine the issue of skid trail impacts on the growth of the residual hardwood and pine forest and will provide new science that will be used to adjust silvicultural practices

PROJECT NUMBER: EFPS 016-2-R1

Title: Regenerating Boreal Mixedwoods: Effects of Herbaceous Vegetation Control and Aspen Stem Density on Stand Development

Applicant: Forest Research Partnership

Funding: \$96,000

Duration: 3 Years

Description: A lack of mixedwood regeneration strategies, coupled with impending wood supply shortfalls for both aspen and spruce identified in Ontario's Provincial Wood Supply Strategy has sparked serious land-use conflicts in the northeast and northwest regions of Ontario and elsewhere. The project's focus is on obtaining better information on the regeneration, management, tending, and protection of boreal mixedwoods.

PROJECT NUMBER: EFPS 017-2-R1

Title: Parkside Gully Tolerant Hardwood Selection Harvesting and Product Recovery Study

Applicant: Forest Research Partnership

Funding: \$20,000

Duration: 3 Years

Description: The Parkside Gully Tolerant Hardwood Selection Harvesting and Product Recovery Study is one of the longest running and largest size controlled harvest hardwood studies known in Ontario. This project will re-measure all permanent sample plots (treated and control) associated with this study, carry out the next scheduled operational harvest of the study stands, and complete a full product recovery study to relate the final wood products (boards, veneer, pulp, bolts) and their values in relation to the different preharvest log grades present on the sites.

PROJECT NUMBER: EFPS 018-2-R1

Title: Spatial Planning for Sustainable Forest Management

Applicant: Forest Research Partnership

Funding: \$157,000

Duration: 3 Years

Description: The main objective of the project is to improve sustainable forest management modeling and decision support capabilities using Patchworks and other related models. A second objective is to develop linkages between Patchworks and other models that are capable of modeling risk and uncertainty. This will provide forest managers with a spatially explicit decision support system that enables them to incorporate risk into their planning process.

PROJECT NUMBER: EFPS 020-2-R1

Title: Effects of Early Herbaceous and Woody Vegetation control on Eastern White Pine Regeneration

Applicant: Forest Research Partnership

Funding: \$50,000

Duration: 3 Years

Description: This study's aim is to identify the vegetation components that most compete with white pine and the time during seedling development when competition is greatest, so that foresters may better target and time vegetation management efforts for the

greatest success. Project outcomes will also address and provide further information on the potential for efficient herbicide use and lower risk integrated pest management strategies, where competition control to improve early establishment of this species is critical.

PROJECT NUMBER: EFPS 021-2-R1

Title: Yield Curve Refinement - Northeastern and Southern Ontario
Applicant: Forest Research Partnership
Funding: \$42,000
Duration: 3 Years
Description: This project uses the full sample plot network to develop yield curves that reflect different levels of management intensities. The validation of the curves against an independent data set is an important part of model development and refinement. The objective of this project is to validate the yield curves against independent data and publish the results.

PROJECT NUMBER: EFPS 028-2-R1

Title: Developing and Evaluating Stem Profile Models for Plantation Grown Jack Pine and Black Spruce Trees at Varying Stand Density
Applicant: Ontario Forest Research Institute, MNR
Funding: \$244,000
Duration: 3 Years
Description: Development of taper equations is a basic prerequisite to estimating individual tree volumes and product yields. The objectives of this study are to develop new and more appropriate taper functions for these species; evaluate the long-term density effects on tree form which arise from different planting density (or by mortality) and by thinning., and determine the most appropriate sampling design in terms of the sample size and selection procedures which minimize prediction error when building taper equations.

PROJECT NUMBER: EFPS 029-2-R1

Title: Development of Habitat Element Curves using Process-Based Modeling
Applicant: Centre for Northern Forest Ecosystem Research, MNR
Funding: \$42,000
Duration: 2 Years
Description: Using a process-based stand development model this project will develop “yield” curves for critical stand-level habitat elements. Using habitat occupancy models already developed the project will demonstrate application of the habitat element curves by predicting future probabilities of habitat occupancy for selected species in the Nipigon and Gordon Cosens Forest Management Units.

PROJECT NUMBER: EFPS 032-2-R1

Title: A large-scale experimental and longitudinal investigation of the impact of selection harvest regimes on sustainable forest management
Applicant: Biology Department, Trent University
Funding: \$113,000

Duration: 3 Years

Description: This study will provide Ontario-based data to improve provincial silviculture guides and allow for adaptive fine-tuning of strategies for regenerating mid-tolerant and tolerant tree species. The results will also provide recommendations for maintaining or improving the breeding habitat of some of Canada's most sensitive forest bird species within both fragmented and continuous forest systems.

PROJECT NUMBER: EFPS 035-2-R1

Title Multi-Cohort Forest Management in North-Eastern Ontario: Cohort Classification, Associated Wildlife Communities, and Projected Stand Dynamics

Applicant: Faculty of Forestry, University of Toronto

Funding: \$305,000

Duration: 3 Years

Description:

Multi-cohort Forest Management (MFM) offers a strategy for balancing goals by applying silvicultural techniques that emulate natural structural variability within boreal stands, from relatively young stands consisting of a single cohort of trees to the oldest stands in which multiple cohorts of trees may be represented. Specific objectives are to develop a forest-type-specific system of cohort classification that uses plot-based measurements of stand structure; to use enhanced forest inventory information (EFI) to test the applicability of the plot-based system to the stand and management unit levels; to use plot data and EFI to examine multi-scale relationships between cohort type and wildlife communities, focusing on small mammals, birds, and selected insect taxa; and to use an individual-based model of stand dynamics to project fibre and wildlife values under different MFM silvicultural scenarios.

PROJECT NUMBER: EFPS 039-2-R1

Title Forest management in riparian areas: ensuring the protection of biodiversity, ecosystem values while maximizing timber production - stand-level to landscape-level analysis

Applicant: Department of Biology, Lakehead University and Centre for Northern Forest Ecosystem Research, MNR

Funding: \$200,000

Duration: 3 Years

Description:

This research shall address four broad questions regarding riparian management: What are the physical and biological responses of small stream riparian zones to various levels of disturbance?; How do the various levels of shoreline disturbance influence the ecological characteristics of small stream systems?; What are the watershed scale impacts of natural disturbance versus the different forest management scenarios?; and, What are the economic and ecological tradeoffs under different riparian zone management scenarios?

PROJECT NUMBER: EFPS 044-2-R1

Title: Completion of the Northern Ontario Plant Database

Applicant: Upper Lakes Environmental Research Network

Funding: \$83,000

Duration: 2 Years

Description: This project is to complete the data entry phase of the Northern Ontario Plant Database (NOPD) and to accomplish additional goals aimed at improving the

usefulness of the NOPD to the forestry community.

PROJECT NUMBER: EFPS 048-2-R1

Title Expanding the Application of the Canadian Carbon Budget Model to Forest Management Planning in Ontario's Boreal Forest

Applicant: Faculty of Forestry and the Forest Environment, Lakehead University

Funding: \$60,000

Duration: 3 Years

Description: This project will provide essential scientific information and tools that will contribute to sustainable forest management under the new operating paradigm that includes climate change, carbon (C) accounting and intensive silviculture. The research project will allow the team to strengthen the network of collaborators; link critical soil parameters to forest ecosystem characteristics and management scenarios; calibrate ecosystem and C budget models for specific stand types that will allow forest policy makers to evaluate the long-term consequences of different management activities; and, support the maintenance and training of high quality personnel through the research and graduate studies capacities of Lakehead University.

PROJECT NUMBER: EFPS 049-2-R1

Title Ivy: a Robust and Versatile Stand Dynamics Model

Applicant: Great Lakes Forestry Centre, Canadian Forest Service

Funding: \$94,000

Duration: 3 Years

Description: This project uses a light-capture based modeling approach to provide more robust, long-term forecasts of stand structure, composition, growth and yield. A light-capture based modeling approach is more straightforward and is more closely related to tree growth processes than empirical models. The goal of this project is to complete a light-capture based stand dynamics model, IVY, and to implement a practical software interface for this model. The name IVY is derived from the abbreviation of volume increment, iV, and emphasizes that the model estimates the volume increment of individual trees.

PROJECT NUMBER: EFPS 053-2-R1

Title: Aboriginal expectations of sustainable forest management and the perceived effectiveness of Ontario forest practices and forest certification

Applicant: National Aboriginal Forestry Association

Funding: \$136,000

Duration: 2 Years

Description: The purpose of this project is to explore the extent to which forest management practices in Ontario meet the expectations that Aboriginal peoples have of the way Crown forest lands within their traditional territories should be managed. The main outcome of the project will be an increased capacity to address Aboriginal dimensions of sustainable forest management.

PROJECT NUMBER: EFPS 054-2-R1

Title Adjustments to Seed Source Selections and Breeding Zones to Compensate for Predicted Climate Change in Ontario

Applicant: Faculty of Forestry and the Forest Environment, Lakehead University

Funding: \$61,000

Duration: 2 Years

Description: The goals of this study are to develop the first decision support model capable of providing decision makers with a mixture of seed sources that minimizes risk of maladaptation at a given site under all probable climate change scenarios; and, to apply this model to evaluating the advisability of including some elite trees taken from outside current breeding zone boundaries into 2nd and 3rd generation breeding programs based on predicted climate change considerations.

PROJECT NUMBER: EFPS 055-2-R1

Title Ace Effects of Vegetation Management Alternatives

Applicant: Faculty of Forestry and the Forest Environment, Lakehead University

Funding: \$159,000

Duration: 3 Years

Description: The goal of this project is to synthesize data and results from existing studies and monitoring efforts. The specific objectives of this project are five-fold: Develop a first generation competition index model for jack pine, black spruce, white spruce and white pine using available data; Contrast conifer gains against hardwood losses for multiple vegetation management treatments; Provide a scientifically defensible comparison of the effectiveness of multiple vegetation management treatments relative to aerially applied herbicides based on 10th-year post-treatment data; Determine longer-term (> 10 year) impacts of forest vegetation management practices on biodiversity; Synthesize results of the studies and transfer to practitioners.

PROJECT NUMBER: EFPS 056-2-R1

Title Evaluation and improvement of free-to-grow assessment methods and standards through operational integration of field and remotely sensed procedures

Applicant: KBM Forestry Consultants Inc.

Funding: \$86,000

Duration: 2 Years

Description: The project will focus on the development of more cost-effective, quantifiable, and re-measurable free-to-grow (FTG) inventory methodologies coupled with an effective implementation strategy at both the policy level and utilization by both OMNR and industry forest management teams. The project will evaluate the accuracy, results and cost effectiveness of large-scale photography for FTG assessments by comparing results to various ground survey methods.

PROJECT NUMBER: EFPS 057-2-R1

Title: Effect of Partial Harvesting and a Forest Tent Caterpillar Outbreak on Stand Development of a Boreal Mixedwood Stand

Applicant: Northeast Science and Information Section, MNR

Funding: \$32,000

Duration: 1 Year

Description: A partial harvest trial of a boreal mixedwood stand was initiated in 1995 on the Lake Abitibi Model Forest. A subsequent tent caterpillar outbreak accelerated the natural mortality of a large portion of the overstory trembling aspen. This combination of events presented a unique opportunity to quantify and compare the effects of partial harvested and unharvested stands when a natural disturbance (insect defoliation) is superimposed on the treatments tested, accelerating natural stand break-up.

PROJECT NUMBER: EFPS 060-2-R1

Title: Evaluating the Effects of Post-Harvest Silvicultural and Intensive Forest Management Practices on Boreal Landbirds

Applicant: Bird Studies Canada

Funding: \$104,000

Duration: 2 Years

Description: This research will evaluate how closely post-harvest silvicultural practices, including intensive forest management practices, emulate natural disturbance processes, such as fire, from the perspective of boreal landbirds. The research will provide a framework for ongoing future habitat and monitoring by developing remote-sensing protocols (validated by field data).

PROJECT NUMBER: EFPS 064-2-R1

Title: Evaluation of the Resistograph to Assess Wood Density and the Use of Multi-Trait Selection Index for Genetic Selection in Jack Pine

Applicant: Forest Genetics Ontario

Funding: \$40,000

Duration: 3 Years

Description: The Vermilion River jack pine seedling seed orchard will be assessed for growth, form and wood quality traits to enhance the genetic selection in jack pine and to evaluate operational methods for the non-destructive assessment of relative wood density. Proposed is the assessment of the resistograph for rapid evaluation of relative wood density in living jack pine.

PROJECT NUMBER: EFPS 067-2-R1

Title: Developing Sustainable Boreal Mixedwood Practices in a Stand Level Adaptive Management (SLAM) Framework

Applicant: Ontario Forest Research Institute, MNR

Funding: \$209,000

Duration: 3 Years

Description: The project's goal is to advance knowledge on mixedwood management by testing innovative techniques for achieving productive mixtures of conifers and hardwoods at operational scales, and monitoring associated changes in ecological indicators. An active adaptive management framework is being used in the project to speed learning and ensure incorporation of results into practice

PROJECT NUMBER: EFPS 074-2-R2

Title: Modeling Diameter Distribution and Stand Value for Three Types of Jack Pine Stands in Ontario

Applicant: Forintek Canada Corp.

Funding: \$218,000

Duration: 3 Years

Description: This project will not only provide the missing growth and yield information on jack pine stands, but also establish a direct link between FRIs and product recovery. The ability to predict stand-level product recovery from the FRIs and as a result of stand management will lead to better estimates of wood supply, and better-informed silvicultural, harvesting

and end-use decisions.

PROJECT NUMBER: EFPS 075-2-R2

Title Silvicultural and Ecological Productivity of Black Spruce / Jack Pine Mixedwoods
Applicant: Centre for Northern Forest Ecosystem Research, MNR
Funding: \$74,000
Duration: 3 Years
Description: This project will review existing literature on conifer mixedwood productivity, test the hypothesis that mixedwoods are more productive than single species stands in the context of black spruce (Sb) and jack pine (Pj), and develop at least one crop plan designed to manage for both species on the same site. Mixed and single species stands that are currently at the self-thinning phase of stand development will be examined to assess their potential for increased productivity through mixedwood management.

PROJECT NUMBER: EFPS 076-2-R2

Title Striking A Balance: Enhancing Forest Productivity to Meet Future Wood Supply and Bioenergy Objectives While Sustaining Ontario's Boreal Forest Ecosystems
Applicant: Forest Ecosystem Science Co-operative Inc.
Funding: \$211,400
Duration: 3 Years
Description: Striking a balance for sustainable forest management builds on the best available science from forestry and forest ecology disciplines to enhance forest productivity and conserve forest ecosystem structure and function. Natural origin stands approaching the onset of old growth are being compared with new stands established through extensive, basic, intensive and elite levels of silviculture for response to two questions 1) "How much fibre can be gained through integration of silvicultural treatments? 2) Will floral species be lost despite our best efforts to retain tree species and structural diversity?"

PROJECT NUMBER: EFPS 077-2-R2

Title: Regeneration of paludified forests after different forest harvest and site preparation techniques
Applicant: Chaire industrielle CRSNG-UQAT-UQAM en aménagement forestier durable, Université du Québec en Abitibi-Témiscamingue
Funding: \$16,611 (Year 1 funding), \$110,250 (Years 2 and 3)
Duration: 3 Years
Description: This study proposes to look at the consequences of these harvesting techniques by comparing them to old harvest sites that were harvested by clear cuts (where the soil organic layer was greatly disturbed) and prescribed burns (that are closer to the natural disturbance pattern) that were carried out in the 1970s and 1980s. Measures of tree stocking, growth and foliar nutrition, along with site condition variables will determine whether stands that are created by current techniques, result in inferior, similar or superior tree establishment and growth when compared to previous techniques that disturbed more severely the surface soil.

PROJECT NUMBER: EFPS 078-2-R2

Title: Characterizing marten natal den sites in managed forests.
Applicant: Northeast Science & Information Section, MNR
Funding: \$25,000

Duration: 1 Year

Description: Martens preferentially use older forest stands with significant conifer composition, large trees and complex structural conditions near the ground. These stands are also important to the industrial wood supply. The study will investigate whether there are more suitable marten den sites in older forests or forests that have the structural characteristics of older forests, than in forest stands without these characteristics. This study will attempt to determine the critical structural characteristics of marten natal and maternal den sites and the stands within which they are located.

PROJECT NUMBER: EFPS 079-2-R2

Title: Impact of Prescribed Burning on Growth and Dynamics of Forest stands

Applicant: Forest Ecosystem Science Co-operative Inc.

Funding: \$150,000

Duration: 2 Years

Description: This project will investigate the effects of prescribed burns and basic silviculture (site prep, plant, tend) on forest growth and yield, stand dynamics and early stand floristics as compared to natural fire. A series of 'matched' plots will be established in 14 to 35 year old plantations and natural sites with 3 broadly contrasting disturbance histories: wildfire, prescribed burn, and mechanical site preparation.

PROJECT NUMBER: EFPS 080-2-R2

Title: Maximizing the Value of Black Spruce Resource through Development of an Integrated IFM Strategy

Applicant: Forintek Canada Corp.

Funding: \$164,000

Duration: 3 Years

Description: Each cubic meter of wood is not created equally in terms of product recovery (yield, quality, mix, value). Therefore, forest managers should not simply strive to maximize wood fiber production which could be at the expense of the quality and value of the end-products. The three-year project to be completed in 3 phases and will evaluate the impact of three major IFM practices (pre-commercial thinning, commercial thinning and stand age-class or harvest age) on the entire wood value chain in black spruce.

PROJECT NUMBER: EFPS 081-2-R2

Title: Implementation of Enhanced Forest Productivity: A Pilot Project on the Romeo Malette Forest

Applicant: Forestry Research Partnership

Funding: \$157,150

Duration: 3 Years

Description: The Forestry Research Partnership (FRP) has been involved with more than 120 research projects aimed at enhanced forest productivity and sustainability. As a means of operationally validating these new FRP products and catalyzing wider application of enhanced forest productivity, the FRP proposes to establish a series of demonstration areas encompassing approximately 1000 ha on the Romeo Malette Forest. On these areas, state-of-the-art knowledge and tools will be integrated as harvest-to-harvest sequences of silvicultural best-practices, aimed at maximizing forest productivity.

PROJECT NUMBER: EFPS 082-2-R2

Title: Commercial Thinning in Black Spruce Plantations
Applicant: Centre for Northern Forest Ecosystem Research, MNR
Funding: \$198,290
Duration: 3 Years
Description: The objective of this project is to provide an integrated quantitative analysis of the silvicultural, ecological and economic effects of several CT regimes in boreal black spruce plantations. This project will examine responses in terms of resource supply (light, nutrients, moisture), tree growth and stand productivity (physiological response and growth allocation), understory plant dynamics (composition, structure and diversity), operational costs, and wood quality and value. The treatments established through this project will provide a valuable research tool for the examination of stand level responses for the next 20+ years.

PROJECT NUMBER: EFPS 083-2-R2

Title: 15-Year Growth and Yield from Ontario Critical Period of Vegetative Competition Study
Applicant: Forestry Research Partnership
Funding: \$29,500
Duration: 2 Years
Description: A critical period (CP) study was established outside Sault Ste. Marie, Ontario in 1992 to define the optimum timing and duration of vegetation control for jack pine, red pine, white pine, and black spruce plantations. As the study will be completing its 15th year in 2006, it is vital that tree growth and survival be measured to provide data for improving growth and yield models, the interaction of vegetation management and soil productivity, and to determine whether the CP determined during the early years of stand development is maintained over time. This project will measure, analyze, and report the 15th-year results from the Ontario CP study.

PROJECT NUMBER: EFPS 084-2-R2

Title: Enhanced Forest Management of Red Oak and White Pine in Shelterwood Silvicultural
Applicant: Department of Biology, Nipissing University
Funding: \$120,000
Duration: 3 Years
Description: The objective of this project is to examine the application of intensive forest management practices for red oak, and explore how similarities in the ecology and management of red oak and white pine can be incorporated into strategies for enhancing the productivity of stands that contain both of these species. The study will also contribute to data collection for studies that have been initiated and require long-term monitoring approaches.

PROJECT NUMBER: EFPS 085-2-R2

Title: Reducing Uncertainty of Wood Supply through Better Understanding of Recreation Use: An Application of the Spatial Recreation Planning Framework
Applicant: Centre for Parks, Recreation and Tourism Research, Lakehead University
Funding: \$177,000
Duration: 3 Years
Description: The proposed research project will explore the integration of recreation, tourism, and commercial forest operations in order to reduce conflict, costs of operations, and provide enhanced certainty in wood supply. The objectives of the study include: To test the transferability of the Spatial Recreation Planning Framework into a new geography that

contains general use (including tourism and recreation) and enhanced management areas; To explore the potential of the Spatial Recreation Plan to act as a forecasting tool to identify special recreation places; To gain a better understanding of key criteria that exist within already identified special recreation places; and, to identify the seasonal importance of special recreation places.

PROJECT NUMBER: EFPS 086-2-R2

Title: Development and Implementation of Succession Model (Modeling Ontario's Stand Succession and Yield (MOSSY)) in Ontario

Applicant: Forest Ecosystem Science Co-operative Inc.

Funding: \$60,000

Duration: 3 Years

Description: MOSSY is a user-friendly empirical model (decision support tool) that provides forest managers with defensible estimates of forest succession and yield, while also providing a software shell for the new and provincially approved benchmark yield curves. The goal of MOSSY is to provide yield and estimates of natural succession based on the re-measured Provincial growth and yield permanent sample plot dataset, and compatible with current forest management planning procedures and tools.

PROJECT NUMBER: EFPS 087-2-R2

Title: The Use of LSP with Satellite or Aerial Super High Resolution Imagery to Project and Track Stand Development

Applicant: Forest Ecosystem Science Co-operative Inc.

Funding: \$112,000

Duration: 2 Years

Description: This project will test the utility of using Large Scale Photography (LSP), with high resolution imagery & ITC techniques to determine future yields based on values derived from the analysis of managed forest stands and density management diagrams. The LSP & ITC techniques should also identify the species composition of the block to aid in planning competition control.