

Draft Strategic Plan for the Gunnar Nilsson & Mickey Lammers Research Forest



Forest Management Branch
Energy, Mines and Resources
January 25, 2005

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1. Introduction

Strategic planning is the cornerstone of government's ability to make sound decisions regarding the management, use and development of public infrastructure and natural resources.

The Gunnar Nilsson & Mickey Lammers Research Forest ("Research Forest") is a valuable "tool" to assist government in making responsible forest management decisions for decades to come with specific importance over the next five years.

The Research Forest is unique in the circumpolar world because of its overall size, length of time it has captured research data and representative environmental values.

This Strategic Plan outlines the government's vision and values associated with the future use of the Research Forest.

1.1 Purpose of the Research Forest Strategic Plan

The Strategic Plan will provide a framework to assist government in making sound decisions on projects, activities and infrastructure within the Research Forest.

Throughout the Yukon, and especially in areas close to Whitehorse, there is a wide range of interests competing for available land. The Research Forest is a "gem" close to Whitehorse, easily accessed, and with a number of features attractive to many potential users. Given this context, a Strategic Plan can assist government in two important ways: first, ensuring that it focuses direction on uses that are compatible with the overall interests; and second, providing a way to raise public awareness of the government's intentions regarding this important infrastructure and research that contributes to improving the management of the Yukon's forests.

1.2 Government's Interests

In 2003, Canada transferred administration and control of land and resources to the Yukon. The Yukon now holds the responsibility for management and control of one of the territory's most valuable resources, its forests.

To ensure that the Yukon properly manages this valuable resource, continued research relating to plant species, ecological and habitat influences must continue. In addition, concerns over climate change, global warming and forest health present additional challenges for government. The implications of these events are impossible to predict without the capacity to research and document changes to forests as these climactic events unfold.

2. Historical and Current Context

In 2000, the Research Forest was officially dedicated and named after two long time Yukoners who had been strong proponents of good forest stewardship in the territory. Gunnar Nilsson and Mickey Lammers were well known for their pioneering efforts associated with sustainable forest management. They were mentors to loggers, sawmillers, the public and the government on forest industry and stewardship issues.

The land reservation for the Research Forest dates back to the Canadian Forest Service in 1964 for the purpose of forest research and forest management studies. Over the years it has evolved from its initial 515 acres (208 ha) to 900 acres (364 ha). As a result of the Kwanlin Dun Land Claim, 288 acres (117 ha) were removed from the Research Forest in the 2001-2002. The total area now available for forest research is 612 acres (248 ha).

2.1 Historic and Current Uses

A number of valuable projects have been conducted over the history of the Research Forest:

- **Lodgepole Pine Provenance Trail** - a survival and growth study of pine from the Yukon, British Columbia, Alberta and Alaska with international partners from Alaska and Sweden. Data is collected every ten years. Established 1974.
- **Pine Thinning Trials** have been conducted to determine the response to fire. Data is collected every ten years, and there are plans for extension of the program in 2005. Established 1973.
- **International Genetics Trial** focusing on Lodgepole Pine, Scots Pine and Siberian Larch. Its main purpose is to determine resistance of these species to insects and disease. Established 1985.
- **Acid Rain National Early Warning System** is part of a national study to track airborne pollutants. Sampling occurs every five years. This is the only Yukon site as part of this study. It is conducted in partnership with the Canadian Forest Services. Established 1985.
- **Canadian Inter-site Decomposition Experiment** is studying forest litter and invertebrate decomposition. This is a complement to similar studies taking place around the world, and concludes in 2005. Established 1992.
- **Yukon Reforestation Archive** takes samples from seedlots and records stock type and species planted in the reforestation program. The most recent addition was the sub-alpine fir. Established 1997.
- **Tree and Shrub Hardiness Trial** is designed to determine what species are most suitable for the Whitehorse area. It is used for Tree Canada Foundation Projects in the Yukon and is in partnership with the Yukon Agriculture, the Yukon Agriculture Association, Prairie Farm Rehabilitation, the Canadian Forest Service and Whitehorse nurseries. Established 1975.
- **Agriculture Test Site** is for research and demonstration of crop variety, new technology and best management practices. It is part of a natural forage assessment. In 2004-2005, its focus was on hay nitrate movement, leaching trial and a berry nutrient management trial. This work is in partnership with the Yukon Agriculture Association, Yukon Agriculture and Yukon farmers. Established 1988.

- **Fire Weather Station** provides the longest continuous record of hourly weather data in this area. Data collected assists with fire danger rating calculation for wildland-urban interface areas of McPherson, Takhini Hotsprings and west Lake Laberge areas. Established 1988.
- **Emergency Fire Fighter Training** is conducted frequently on this site. This has included jump training and bombing training by air tankers. Established 1986.
- **Yukon College Renewable Resources Program** utilizes the site routinely for direct experiential training activities.
- **The Girl Guides and several teachers** from the Whitehorse area capitalize on this area to pursue learning objectives in their curriculum.
- **Search and Rescue Dog Training** also occurs in the Research Forest.

2.2 Existing Facilities and Infrastructure

To support the work at the Research Forest, infrastructure and facilities have been added:

- Water well;
- Irrigation system;
- Fencing;
- Quonset hut;
- Cold frame;
- Electricity;
- Fire training infrastructure, and
- Signage.

The estimated replacement cost for the existing infrastructure is \$250,000.

Additional development of infrastructure to support research and other activities needs to be examined, planned and carefully reviewed as improper location or opening greater access to areas could have unintended outcomes and negative impacts.

3. Input to the Planning Process

A public meeting of the North Klondike Highway local residents was held on November 23, 2004, to discuss the views of the local area regarding the use of the Research Forest. A number of general themes emerged from these discussions. In addition, a number of concerned citizens and stakeholders wrote to government with their views. Other government departments were also approached to determine what their interests are for the future use of the Research Forest.

3.1 Stakeholder Input

To canvas the public as to what activities they would like to support in the Research Forest, a listing of possible options was prepared by Forest Management Branch. These options were based on known historical use, current use and new interests:

- Wildlife viewing;
- Forest/agricultural research;
- Other ecological research;
- Interpretive tours/trails;
- Picnic area;
- School use to support experiential learning;
- College/university educational teaching and research;
- Trail riding;
- Dog sledding;
- Dog walking and training; and
- Public use applications valuable to local residents or Yukon i.e., fairgrounds, riding arena and rodeo grounds.

Stakeholders were asked for their ideas on how the Research Forest could be used to support their programs. The following options were presented:

- The Forest Management Branch would like to continue research in the existing established research plots. Specifically: the Lodgepole Pine Provenance Trial will be re-measured in May 2005; the trees in the Thinning Trials will be retagged; and regular annual maintenance needs to be completed before the first snow fall.
- The Forest Management Branch proposes a series of four initiatives to take place in the next five years.
 1. To clear a site and establish a Spruce Provenance Trial with the first being white spruce followed by black spruce.
 2. To establish a Selection Harvest/Thinning Trial in one of the flood plain sites below the escarpment. This study will require coordination with wildlife specialists on impacts of the harvest on small mammals and migratory song birds.
 3. The third initiative is a second thinning of the lodgepole pine thinning trials.
 4. The Forest Management Branch would also like to record a species list of all species of trees, shrubs, flowers, grasses, lichens and mosses within the research forest. Partnerships will be sought to conduct a census on all wildlife and birds within the research forest.
- The Forest Management Branch is committed to infrastructure maintenance and will construct Russell fencing along the north and west boundary of the forest. The remaining barbed wire fencing along the North Klondike Highway and all of the gates to the research forest will be maintained.
- Community Services proposes a southern portion as a public use area with parking facilities and developed foot trails to the river as well as trails in and around the public use area.

- Department of Environment has identified the Research Forest as having good recreational potential, specifically for providing access to the river and possibly for foot trails and horse riding trails.
- The Department of Environment is interested in the southern end for research purposes. The area is of interest as there is a nice section of spruce forest. They would like to see the oxbow, including where the oxbow is almost an island, included within the Research Forest and a piece on the river included to show basic riparian willows, balsam poplar and spruce. There is interest in conducting shrew research in connection with the pine thinning trials already underway through the Forest Management Branch. There is also interest in pursuing small mammal work in the interior wetland area.
- As an educational initiative, the Department of Environment has submitted a proposal with a number of initiatives including an experiential learning site within the Research Forest. Forest Management Branch is currently reviewing the proposal.
- Department of Education has identified a number of interests. Their general goal is an ongoing day use for educational programming and a long-term goal of establishing an all season Yukon Experiential Learning Centre. Experiential sciences and outdoor physical pursuits would be among the main curriculum focuses. There would be the possibility of partnerships with Yukon First Nations to incorporate traditional knowledge understanding. Ensuring student safety will have to be an important element of the design of programs that would utilize the facility.
- Yukon College has utilized the Research Forest extensively for fieldwork and training for the renewable resource management courses. The renewable resource program encourages students to acquire practical skills and technical competency and the program tries to include as much fieldwork as possible. The Research Forest is invaluable as it is close to the college and is free of snow early, allowing students into the field earlier in the year. The Research Forest has been used to introduce students to silviculture and how to conduct silviculture surveys. In addition, Yukon College students have the opportunity to utilize the resource of Forest Management Branch employees. Branch foresters have given tours of the monitoring trials underway at the Research Forest. Yukon College would like to continue to use the Research Forest as an educational tool and proposes that students become involved in the active research being conducted. Yukon College students could gain useful, practical experience by providing labour to research that was led and funded by other groups.
- Yukon Archaeology would like to conduct archaeological research within the Research Forest in concert with other research uses. Archaeology believes it may be possible to tie in an archaeological survey/excavation over several seasons with local high school curriculum. There is one documented archaeological site within the research forest and two additional sites are known nearby. It should be noted that no systematic survey has been conducted within the Research Forest and that any new land uses should take into consideration impacts on any heritage resources that might be present.
- In 1988, the Agriculture Branch approached the Forest Management Branch to use a site within the Research Forest to conduct crop variety trials. A site just under 1 ha of land was designated in the northeast corner. Agriculture was also given use of the Quonset hut and shared in maintenance. Since 1988, many agriculture research trials and testing have occurred. For example, a variety of crop trials that tested many varieties of forages, legumes, spring seeded cereals, vegetables and shelter belt trees were conducted. They have also invested in soil building trials. In 2002, the 1 ha lot was

expanded by acquiring another 0.6 ha of land to the east. This new site was developed to demonstrate different forage varieties that farmers may want to grow. The Research Forest's proximity to Whitehorse makes it an ideal location for Agriculture Branch activities to take place. In 2000, Yukon Economic Development and the Market Industry Services Branch of Agriculture and Agri-Foods Canada, commissioned a multi-year development plan for the Yukon Agriculture industry and government in support of the industry. The research and demonstration site at the Research Forest has been used for this purpose for the last 16 years. The Agriculture Branch proposes that they reserve the land currently used for agriculture research in the northeast corner of the research forest. The total area of land that they are interested in using is 25.2 ha. They believe this area will meet both current and future field demonstration/research needs and will be compatible with other Research Forest research and education activities.

- Agriculture would like continued access to other sites within the Research Forest that are under the Forest Management Branch's stewardship that have specific site conditions that would meet temporary study needs.
- The Ta'an Kwach'an First Nation would like to form an Elders Group to work in partnership with FMB to design interpretative trails and signage of important social and environmental historic sites, and traditional usages of vegetation, wildlife and habitat.

Generally, two prevailing themes emerge from the stakeholder input received from the November 23, 2004 questionnaire and public meeting and interested stakeholder request submissions:

Theme 1: The capacity for the Research Forest to be used as a viable long term research property should be maintained in perpetuity. This primary goal should not be jeopardized by other uses proposed for the area. All proposed future activities must be compatible and minimize negative impacts on research objectives.

Theme 2: The Research Forest holds strong values for public education (e.g., interpretive trails), public school and post secondary experiential education, and First Nation traditional knowledge and use education.

Activities inconsistent with these two themes were not supported and actively discouraged at the November 23, 2004, local community meeting. For instance, access options and facility construction should be designed in ways that do not increase the possibility of vehicular and other motorized traffic in the Research Forest.

4. The Strategic Plan

The following sections provide the key elements of the strategic plan that will guide government in its decision-making and actions relating to the Research Forest for the next five years. It will have implications for the longer term, as much of the research projects increase in their value as the time frame expands to provide more data over time.

4.1 Vision

A vision for the Research Forest must fall within the overall framework developed by the Department of Energy, Mines and Resources, and specifically the Forest Management Branch (“FMB”). The vision and mission for the FMB are: “we serve the public’s varied interests and maintain their trust by being innovative stewards and respected regulators of Yukon’s forest resources”, and “we manage the Yukon’s forest resources for the benefit of Yukon people by balancing social, ecological and economic values and by being consistent, fair, responsible and transparent in all our interactions”.

Consistent with the vision and mission for the FMB, the central vision relating to the Research Forest specifically is:

Vision: We support Yukon’s goal of being a key leader in sustainable forest management through pursuit, with our partners, of credible and consistent scientific research and through the education of Yukon people.

4.2 Values

The values which “drive” the Forest Management Branch set the appropriate context for specific values relating to the Research Forest. The FMB core values can be summarized as follows:

- responsible for decisions;
- integrity, fairness and honesty in actions and decisions;
- professional in services and information;
- respectful of clients and public;
- dignity, values and knowledge of all people;
- strength in diversity; partnerships encouraged;
- knowledge of forested landscape;
- innovative research pursued;
- healthy and fun teamwork by innovation and skills development; and
- balance in work, families and community involvement.

Within this general context, the following values will steer the decision making and activities of the Research Forest program:

Values:

- **To ensure compatibility of all activities (research, educational, cultural and public) with the main vision of sound research and educational attainment;**
- **To build strong, productive partnerships with circumpolar governments, First Nation governments, local governments, universities, research institutions and the private sector;**
- **To maximize educational opportunities and the sharing of knowledge to the greater community;**

- **To integrate traditional, scientific and local knowledge; and**
- **To contribute to the Yukon knowledge base and the tangible and practical aspects of this knowledge to land based activities.**

4.3 Decision Criteria

The Government of Yukon requires criteria to assess proposals submitted for the use of land base or partnerships within the Research Forest. Both impacted Yukon First Nations have expressed an interest in the application assessment process to help ensure that their values and concerns are addressed in conjunction with the decision criteria for compatibility and potential negative impacts. These criteria are set out based on the preceding vision and values.

- The proposed research, project or activity must compliment short, medium and long term forest-related research objectives, activities and plans.
- The proposed research, project or activity must provide data, information or have an educational or social value of benefit to Yukon society.
- The proposed research, project or activity must not impact negatively on archaeological, traditional knowledge and use sites of value to Yukon First Nations.
- Partnerships with other governments, First Nations, or groups must not jeopardize the capacity of the Government to ensure that its research objectives are met in the long term.
- Priority will be given to research, projects or activities that relate to the two basic components of the vision for the Research Forest: first, activities that support Yukon being a leader in sustainable forest management, and; second, activities that are educational for Yukon people relating to the research conducted on the property.
- Applications that increase equity for the Yukon public or increase community values may be considered.

4.4 Sustainable Plan Elements

Based on the vision, values and consistent with the decision criteria, the following research, activities and infrastructure development form the overall proposed program for the Research Forest for the next five year period. Some projects are longer term in nature and therefore are relevant for a period exceeding the five years.

These elements will be implemented in collaboration with other government, departmental, First Nation and community bodies. Actual implementation of these elements will depend on budgets, the speed at which agreements can be reached, and the pace at which further consultation takes place with partners and interested groups.

4.4.1 Research

- Establish a spruce provenance trial (long term project).
- Establish a selection harvest thinning trial in one of the flood plain sites.
- In conjunction with the harvest thinning trial, in cooperation with the Department of Environment, study the impact of thinning on the small mammal population and migratory song birds.
- Conduct a second thinning trial on existing thin Lodgepole pine plots.
- Small mammal studies in the wetland area.
- Compile, in cooperation with Department of Environment, comprehensive species list of all trees, shrubs, flowers, grasses, lichens and mosses.
- Compile, in cooperation with Department of Environment, a census on all wildlife and bird species.
- Conduct archaeological survey in the Research Forest. This is to be done in conjunction with the First Nations and local High School curricula (student involvement).
- Continuation of agricultural research on the 1.6 ha, with consideration of expansion of this area to 25.2 ha to accommodate current and future field demonstration needs. This is in cooperation with Agriculture and Agri-foods Canada.
- Cooperation between the Forest Management Branch and Agriculture Branch to determine other suitable locations that would meet temporary study needs (e.g., soil conditions) for other agricultural studies.
- In conjunction with Community Services-Protective Services Branch's *FireSmart Program*, the Forest Management Branch and Department of Environment would like to study the impact of fuel abatement treatments identified ecological indicators.
- Develop partnerships with the Yukon Conservation Society (YCS) and Canadian Parks and Wilderness Society (CPAWS) to establish levels of participation and resources that may be available to enhance research, educational and infrastructure planning activities.

4.4.2 Activities/Uses

- Establish a public interpretive use trail system. This would be a controlled access option so that integrity of research activities is not compromised from excessive and uncontrolled public use.
- Cooperation with Yukon College and Department of Education on applying the research underway to specific educational programs (e.g., silviculture program) and assisting with infrastructure development to provide a safe learning environment.
- Infrastructure and Facilities
- Establishment of an all season Yukon Experiential Learning Facility.
- Conduct exploratory discussions with Kwanlin Dun and Ta'an Kwach'an First Nation on the establishment of a traditional knowledge and use centre.
- Parking for use of Facility and public use trails and areas.
- Signage for interpretive trail system (trilingual).
- Construct Russell fencing along the north and west boundaries.

- Reconfigure fencing to allow for a public parking area on the east boundary.
- Ongoing maintenance for the existing infrastructure.

4.4.3 Encompassing Additional Unique Forest Ecosystems

It is evident from input received that there are other forest ecosystem values adjacent to the Research Forest on the west boundary of the property. To expand the values of the Research Forest to increase its representative characteristics of the region, it is proposed that talks commence with the City of Whitehorse and other Departments in the Yukon Government to acquire the oxbow along the Takhini River and the island across from the oxbow currently under the jurisdiction of the City.

4.5 Zoning and Planning Context

4.5.1 Rezoning Interest

Currently the Research Forest is zoned “Agricultural Land” under the *Hotsprings Local Area Land Use Plan*. As the primary role of this property is for research and educational purposes it would be more appropriate to apply a zoning term which facilitates implementation of this strategic plan i.e. rezone the Research Forest as “Government Use-Research/Education”. The Government intends to initiate inquiries into this option in 2005. The implications of this will be to give increased protection to the lands so that land applications can be restricted to those in keeping with the vision and values noted here.

4.5.2 Hotsprings Road Local Area Plan

In 2002, the Yukon Government published the *Hotsprings Road Local Area Plan*. The elements of the Plan are consistent with this strategy in that many of the principles of conservation, balanced economic activity, public awareness and education, and respect for the area’s wilderness character.

Additional public communications will take place to ensure that this strategy and the Plan reflect the views of residents in the local area, and that there are no inconsistencies.

4.6 Relationship to First Nations

The lands in the Research Forest were the focus of discussion in both the Kwanlin Dun First Nation Land Claim and the Ta’an Kwach’an First Nation Land Claim negotiations given historic uses by citizens of both First Nations in the area. The outcome of these negotiations is the existence of First Nation settlement lands on the south boundary of the Research Forest. There are also other settlement land blocks in the vicinity of the Research Forest (see Appendix B-map). For these reasons, it is Government’s intention to secure a long term cooperative relationship with the two First Nations regarding the planning for the Research Forest.

As part of the implementation of this strategy, four particular interests will be explored with the First Nations:

- An archaeological site survey should be conducted to confirm that all key locations are known. Some of this information has been obtained through the Land Claims negotiation process, but an update would be useful as part of the ongoing planning process, and implementation of this strategy.
- Where trails are being considered for public uses, their placement relative to First Nations lands and archaeological sites should be discussed with the First Nations.
- Information for educational, traditional knowledge and use related signage will benefit from First Nations input.
- The possibility of locating a traditional learning centre will be explored with the two First Nations.

Ta'an Kwach'an First Nation has specifically requested:

- A *Memorandum of Understanding* (MOU) between governments to ensure that Final Settlement Agreement obligations under Chapter 17-Forest Resources are met. This MOU would also speak to consultation requirements and cooperative planning processes i.e., part of review of applications for projects within Research Forest.
- Initiate a joint request with Kwanlin Dun First Nation to the Yukon Government for a heritage site survey within and immediately adjacent land base to the Research Forest.
- To be an active partner in all science, traditional knowledge and educational activities within the Research Forest.

Kwanlin Dun First Nation (KDFN) has specifically requested:

- That all existing and future ecological values, wildlife and heritage information from the Research Forest and KDFN Settlement Block C88B adjacent to the Research Forest be shared with the First Nation to aid in the future decisions made for development of this lot. KDFN would like to determine the role of this block in relation to the Research Forest and determine what significance it plays for access and land base management.
- KDFN would like to ensure Final Settlement Agreement obligations under Chapter 17-Forest Resources are met. KDFN under their agreement has responsibility for planning forest resources and to cooperatively engage in land use planning within their traditional territory.
- Acknowledgement by government that Lot C88B is under consideration for country residential development but KDFN wants to ensure any development decisions made will have compatible design with the Research Forest.

5. Five Year Work Plan (April 1, 2005 to March 31, 2009)

The first components of the five year work plan are scheduled to begin April 1, 2005. Since Devolution, there have been a number of positive initiatives, forest research data collection and infrastructure

maintenance. The Research Forest Draft Strategic Plan is both timely and relevant in terms of information, research and First Nation traditional knowledge studies because it can provide tools and process information to resource managers and stakeholders as Yukoners work towards sustainable forest management practices.

The following is the Forest Management Branch's Five Year Work Plan; a biannual information report will be made available to the public. This report will summarize Research Forest activities and the results they generate in an effort to keep the Yukon public current.

Table 1. Five Year Work Plan (2005 – 2009)

Planned and Required Work to be Conducted Within for the Period 2005 through 2009 the Gunnar Nilsson and Mickey Lammeres Research Forest for the Period 2005 through 2009			
YEAR	ACTIVITY	OBJECTIVE	COST
	On-going Research Projects		
2005	Lodgepole Pine Provenance Trial will be re-measured in May 2005 prior to bud flush.	Decadal growth and survival measurements of the 1974 study.	~ \$2,000
2005	Thinning Trials require re-tagging of trees using poly tags which must be ordered April 1 st and attached by June 1 st	Growth of trees has caused tags to become imbedded in bark or wires have broken. Tags must be replaced.	~ \$3,000
2005	Annual maintenance of all trials must be done before 2005 snowfall (November)	All trials are affected by ingress of natural seedlings or suckering aspen. These stems need to be removed to ensure that only the target trees are measured.	~ \$3,000
2005 to 2009	Agriculture Branch Test Plots and related research studies or trials.	The Agriculture Branch plans to continue with its testing of crops and related agriculture issues within the AG. Branches trial area and within the Research Forest in areas determined to be useful.	
	Maintenance and Infrastructure	Cost share with Research partners	
2005 to 2006	Russell Fencing will be constructed along the north and west boundary of the Research Forest. It will be constructed to "horse proof" standards along the west side and 1/2 to 2/3 scale on the north line. Fence construction will be tendered. First Nation Final Agreements respecting contracts on Traditional Territory will be respected. The construction work will begin as early as possible in the 2005 Fiscal Year	The fencing surrounding the Research Forest needs to be replaced based on input from neighbouring land holders. The plan is to reconstruct the Hot Spring Road fence with a four rail Russell Fence and the adjoining property with a five rail Russell fence.	\$15,000.00

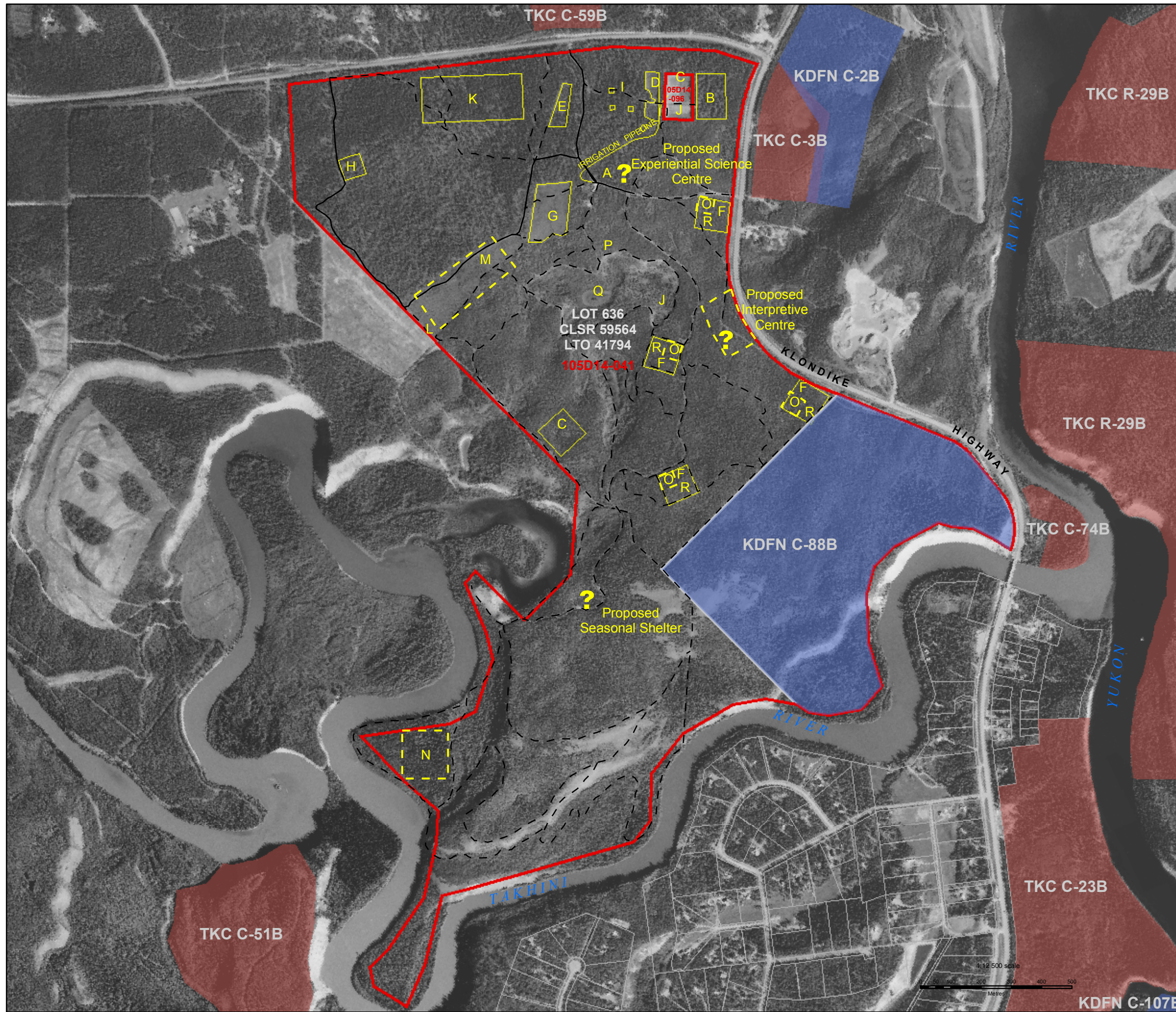
YEAR	ACTIVITY	OBJECTIVE	COST
Annually	On-going fence maintenance to be continued on barb wire fence along the North Klondike Highway.	Annual maintenance of the barbed wire fencing along the North Klondike Highway will continue as required.	\$1,000.00
2005	Gates require regular maintenance.	The main and secondary gates require basic maintenance to ensure continued operation.	\$500.00
	New Research Proposals for first 5 Year Plan		
2005	Apply a second thinning to the existing pine plots . This second thinning will be 20 growing seasons after the initial thinning.	The existing thinning plots are 0.5 ha. in size. One half of each will be thinned in this second and final thinning in these trials.	\$0 to \$ 5000.00
2005 . . .	Clearing of site for establishment of Spruce Provenance Trials . First trial to be established will be white spruce, black spruce to follow. Final site selection to be completed by May 1 st with clearing to be completed by November 1 st using fire crews	Provenance trials for other native Yukon species are desired for numbers of reasons. The plan is to begin with the installation of a white spruce trial with black spruce, alpine fir, larch, and hardwoods to follow.	\$0 to \$ 5000.00
2005 to 2009	A Small Mammal Study has been proposed by the Environment Branch.	The study will be conducted in the wetland sites in the central area of the Research Forest. This is an associate study to be conducted by another government branch.	
2005 to 2009	Conduct an Archaeological Survey within the Research Forest.	In co-operation with the two First Nations, the Yukon Archaeologist and other partners, a comprehensive survey of the Research Forest and surrounding area will be planned. A work schedule for survey will be established (2005). Initiate survey and sites identification 2006. Subsequent study of the sites will be determined on the basis of available resources and priority established by the Yukon Archaeologist 2007.	
2007	Selection Harvest/Thinning Trial to be established in one of the flood plain sites below the escarpment. This study will require co-ordination with wildlife branch on Impacts of Harvest on Small Mammals and Migratory Song Birds . Consultation to begin in May 2005, study plan developed by December 2005 with work to begin in spring 2006 with census of migrating song birds. Stand treatment to be done during frozen period to minimize site disturbance and allow for safe extraction of logs. Stand treatments to be completed by March 31 st 2007.	Requests have been made by numbers of groups and individuals to have harvesting options undertaken in Yukon. The main recommendation is to allow for true selective harvests. It is the plan to use one of the lower bench conifer stands to test the feasibility of this harvest method and the impacts it may have on wildlife, and established ecological criteria.	\$30,000.00

YEAR	ACTIVITY	OBJECTIVE	ESTIMATED COST
2005 to 2009	Community Services, Protective Services Branch and Forest Management Branch to plan (2005) and conduct research activities (2006-2009) on issues related to the <i>FireSmart Program</i> .	The Research Forest offers a variety of forest types similar to those found around many of Yukon's communities. The FireSmart Program has been active for several years but the impact of the thinning program has not been assessed. Study plots may be thinned to FireSmart specifications and the resulting change in vegetation, fuel moisture and so on studied. In this way information may be gathered at the Research Forest to supplement studies that will be undertaken in FireSmarted areas across Yukon.	
2005 to 2009	Species list of all species of trees, shrubs, flowers and grasses and including lichens and mosses. Partners will be sought to conduct census on wildlife and birds which frequent the Research Forest including nesting song birds and water fowl with a possible migration census (spring and summer song birds). Gathering the species list can begin during the spring 2005 migration and continue until a complete census is achieved.	There has been no census of the species which exist within the Research Forest. Although there exists a knowledge of the main species the total number and variety of specie diversification in unknown. Through partnering with First Nations and other departments we plan to identify all species, plant and animal, that exists in the Research Forest even if only during seasonal migration or occasional use.	\$10,000.00
	Other Projects		
2005	Securing Land Tenure	It is the intent of the Forest Management Branch to secure a form of land tenure which will hold the Research Forest secure from any future attempts at subdivision or annexation for purposes other than research and education.	
2005 to 2009	Recreational walking/hiking Trails will be located and worked on over a period of years.	As much as possible, trails will make use of existing paths within the Forest, visit as many ecotypes as possible, be covered with wood chips and bordered with logs to contain the material, and visit many of the research sites to allow for public viewing of the research.	
2005 to 2009	Interpretive Signage.	In conjunction with the interpretive trail system, signs will be required to describe the site, the geographic feature, the plant or other point of interest. Signs will be designed to provide information, descriptions and names depending on the feature. In the case of plants and animals common, scientific and First Nation names will be used.	~\$ 5000.00

YEAR	ACTIVITY	OBJECTIVE	ESTIMATED COST
2005 to 2009	Yukon College and the Department of Education will continue to use the Research Forest as an outdoor laboratory.	Students will be encouraged to participate in the collecting of data for the various research projects underway or to be installed in the future. By being an integral part of the research effort the experience gained in data collection, input, interpretation will provide a deeper level of educational experience while assisting in a real way with the research programs.	
2005 to 2009	Experiential Learning Centre- Department of Education proposal	The Department of Education is interested in establishing an all season outdoor experiential learning centre near Whitehorse. Sites will be scoped out with the possibility that such a learning centre may be situated within the Research Forest (2005/06). Funding and required advanced planning to be done (2006-2009).	
2005	Visitor Parking.	In order to maximize the use of the Research Forest by visitors, an area to park vehicles outside of but adjacent to the Research forest is needed. To this end, a site along the North Klondike Highway will be selected in consultation with the Department of Highways, for this purpose. This may require a reconfiguration of the fence to allow sufficient area for the parking area as well as a pedestrian gate to allow for foot access.	\$0 to \$ 5000.00
2005	Application for Expansion YG/City	Adjacent lands to the Research Forest contain unique biogeodaphic features which are unique. An oxbow lake is in the early stages of transition from flowing river to lake to grass meadow. A bend in the river is within metres of becoming an island. Both features offer the opportunity to study the transitions as they progress within a secure land tenure.	
2005 to 2009	First Nation Collaboration	1. Archaeological site survey, 2. Trails system and signage, 3. Integration of Traditional Knowledge as a routine part of the research undertaken 4. The possibility of establishing a Traditional Learning Centre.	

YEAR	ACTIVITY	OBJECTIVE	ESTIMATED COST
2005 to 2006	Ta'an Kwach'an Council has specifically requested:	<p>1. A <i>Memorandum of Understanding (MOU)</i> between governments to ensure that the Final Settlement Agreement obligations under Chapter 17 - Forest Resources are met. This MOU would also speak to consultation requirements and cooperative planning processes i.e. part of the review of applications for projects with the Research Forest.</p> <p>2. Initiate a joint request with Kwanlin Dun First Nation to the Yukon Government for a heritage site survey within and on land immediately adjacent to the Research Forest.</p> <p>3. To be an active partner in all science, traditional knowledge and educational activities within the Research Forest.</p>	
2005	Kwanlin Dun First Nation has specifically requested:	<p>1. That all existing and future ecological values, wildlife and heritage information from the Research Forest and KDFN Settlement Block C88B adjacent to the Research Forest be shared with the First Nation to aid in the future decisions made for development of this lot. KDFN would like to determine the role of this block in relation to the Research Forest and determine what significance it plays for access and land base management.</p> <p>2. KDFN would like to ensure Final Settlement Agreement obligations under Chapter 17 - Forest Resources are met. KDFN under their agreement has responsibility for planning forest resources and to cooperatively engage in land use planning within their traditional territory.</p> <p>3. Acknowledgement by government that lot C88B is under consideration for country residential development but KDFN wants to ensure any development decisions made will have compatible design with the Research Forest.</p>	

Research Forest - 5 year Plan



- Forestry Reserve 105D14-041
(Gunnar Nilsson & Mickey Lammers Research Forest)
- Research Areas (description below)
- Proposed Research Areas
- Kwanlin Dun First Nation Interim Protected Land Selection
- Ta'an Kwach'an Council Land
- Existing Access Roads
- Interpretive Trails
- ? Educational Initiatives
Department of Education, Yukon College, and Department of Environment are interested in establishing a cooperative initiative to create an Experiential Science Centre within the Research Forest. In conjunction with the educational initiative an Interpretive Centre for public use will be established.

Forestry Research Areas

- A** INFRASTRUCTURE:
Quonset Hut, water well, irrigation, electricity, fire training camp and jump tower.
- B** LODGEPOLE PINE PROVENANCE STUDIES:
Established 1974. International co-operative to study suitability of lodgepole pine from YT, BC, Alberta and Alaska for best growth in Yukon. Measured every 5 years up to 100 years.
- C** AGRICULTURAL TEST SITE:
Established 1988. Research and demonstration site for testing crop variety, new technology and innovative farming practices. 50 year life expectancy.
- D** FIRE WEATHER STATIONS:
Established 1975. 50 year life expectancy. Weather measurements collected daily during fire season to monitor weather patterns. Used to determine local fire weather indices.
- E** TREE & SHRUB HARDINESS STUDY:
Established 1975. Constant monitoring. 73 tree species monitored for suitability in Whitehorse area. Used in community projects sponsored by Tree Canada Foundation and Yukon Government.
- F** PINE THINNING STUDY:
Established 1983. Four sites measuring pine regeneration after 1957 fire. Remasured every 5 years. Life expectancy of 80 years.
- G** GENETICS TESTING:
Established 1985. International study to measure site suitability of pine and larch from northern Canada and Sweden. Alaska Bureau of Land Management and University of Alaska, a Swedish University and forest companies have interests. Measured every 5 years up to 100 years.
- H** ACID RAIN NATIONAL EARLY WARNING SYSTEM:
Established 1987. Data collected & analyzed every 5 years. Tied to a series of national sites and is the only Yukon site. Tracks air born pollutants by tagging and resampling individual trees.
- I** NATIONAL VEGETATION & INVERTEBRATE DECOMPOSITION STUDY:
Established 1992. Examination of decomposition of invertebrates and vegetation. Part of a national study of 21 decomposition sites. Data collected continuously.
- J** SUB-ALPINE FIR, SPRUCE AND PINE SEEDLING ARCHIVE:
Established 1997. Seedlings rotated on a regular basis. Reforestation programs to study growth & survival of various seed lots, stick types and species. Life expectancy tied to other reforestation projects.
- K** WHITE SPRUCE PROVENANCE STUDIES AND CLIMATE CHANGE PROJECT:
Planned Establishment - 2004/05. Research forest site. 1 of 5 sites in Yukon. White spruce seedlings to be planted 2005/06. Used for seed zonation and climate change projects. Proposed partners include NWT Forestry, Alberta Environment, University of Alaska, BC Ministry of Forests, and Alaska Bureau of Land Management.
- L** REPAIR & CONSTRUCTION OF RESEARCH FOREST FENCE:
Trees from site K used for fence construction. Project on hold pending outcome of Agriculture Association application.
- M** SPRUCE PROVENANCE TRIALS:
Clearing of site for establishment of Spruce Provenance Trials. First trial to be established will be white spruce, black spruce to follow.
- N** SELECTION HARVEST/THINNING TRIAL:
Selection Harvest/Thinning Trial to be established in one of the flood plain sites below the escarpment. This study will require co-ordination with the Wildlife Branch on Impacts of Harvest on Small Mammals and Migratory Song Birds.
- O** SECOND THINNING OF LODGEPOLE PINE THINNING TRIAL:
Second Thinning of Lodgepole Pine Thinning Trial. This will be done within the existing trials.
- P** SPECIES LIST:
Species List of all species of trees, shrubs, flowers and grasses including lichens and mosses. Partners will be sought to conduct census on wildlife and birds which frequent the Research Forest including nesting song birds and water fowl with a possible migration census (spring and summer song birds).
- Q** SMALL MAMMAL STUDY:
Department of Environment is interested in conducting small mammal research within interior wetland area.
- R** SHREW RESEARCH:
Department of Environment is interested in a co-operative research initiative by conducting shrew research in connection with the pine thinning trials already underway through the Forest Management Branch.

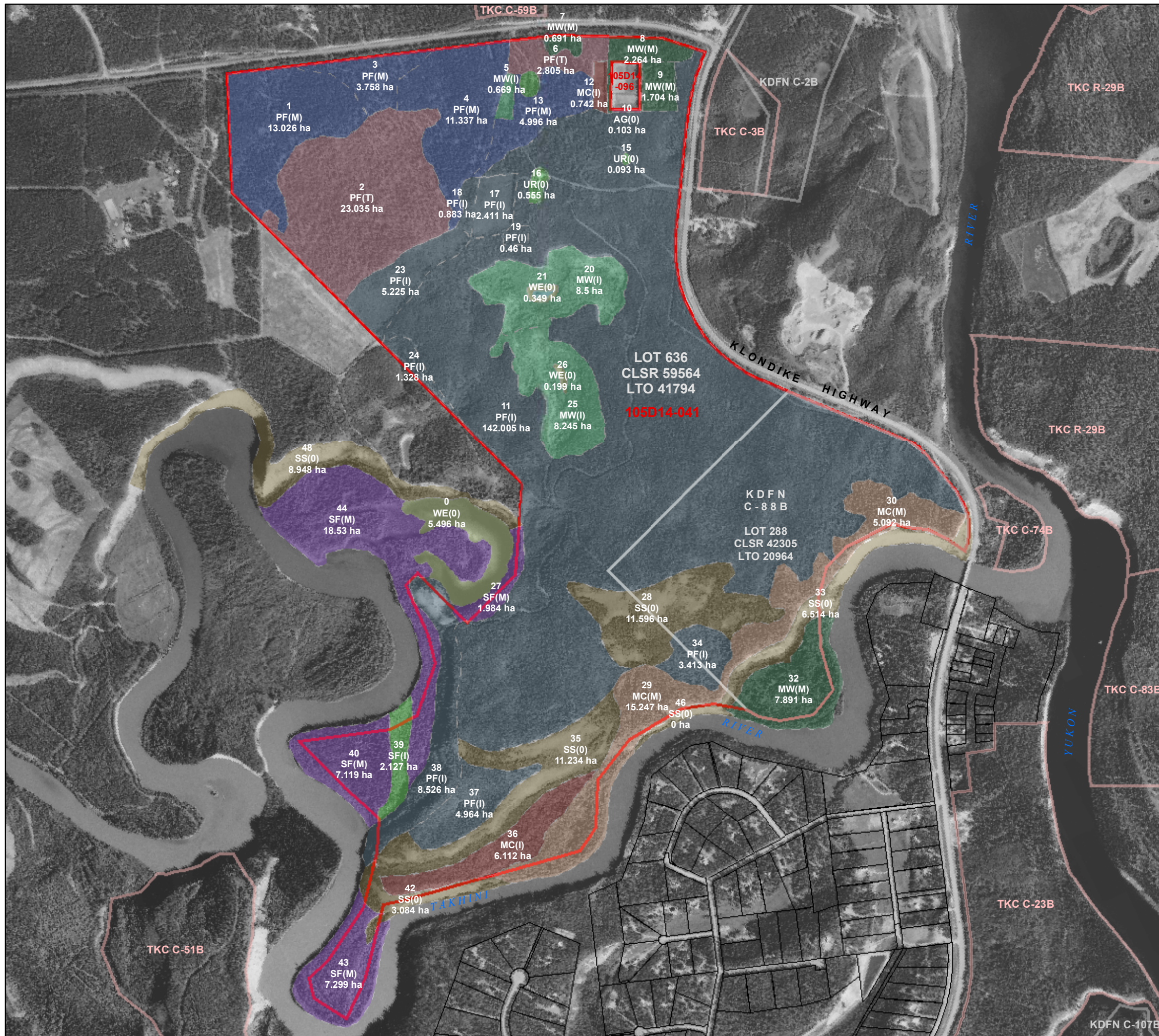
Research Forest Feasibility Review

- Forestry Reserve 105D14-041
(Gunnar Nilsson & Mickey Lambers Research Forest)
- Kwanlin Dun First Nation Interim Protected Land Selection
- Ta'an Kwach'an Council Land

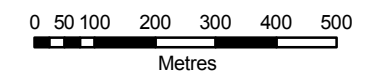


Forest Type

- MC(I) - Immature Spruce Feathermoss**
Immature Spruce Feathermoss (SF), mainly spruce with feathermoss ground cover. Here this type has a higher percent of pine within the stand. Ht - 5m, Age - 20 yrs, CC 30%
- MC(M) - Mature Spruce Feathermoss**
Mature Spruce Feathermoss (SF), mainly spruce with feathermoss ground cover. Here this type has a higher percent of pine within the stand. Ht - 14m, Age - 70 yrs, CC 40%
- MW(I) - Immature Aspen Bearberry**
Immature Aspen Bearberry (AB) ecosystem. Mainly aspen with pine and spruce intermixed. Ht - 7m, Age - 30 yrs, CC 20%
- MW(M) - Mature Aspen Bearberry**
Mature Aspen Bearberry (AB) ecosystem. Main species aspen and pine with some spruce intermixed. Ht - 14m, Age - 75 yrs, CC 30%
- PF(I) - Immature Pine Forest (single storey)**
Immature Pine Grass (PG) forest. Ht - 5m, Age - 30 yrs, CC 50%
- PF(M) - Mature Pine Forest (single storey)**
Mature Pine Bearberry (PB) forest, single storey (uniform - one age group). Ht - 15m, Age - 80 yrs, CC 40%
- PF(T) - Mature Pine Forest (two storey)**
Mature Pine Grass (PG) forest with regen (two age groups): mature trees (veterans) with regen average age of 40 yrs with average height of 5m. Fire margin. Ht - 12m, Age - 80 yrs, CC 10%
- SF(I) - Immature Spruce Lichen**
Immature Spruce Lichen (SL), drier site with spaced spruce (white spruce), pine and aspen frequently part of this type. Ht - 3m, Age - 20 yrs, CC 40%
- SF(M) - Mature Spruce Feathermoss**
Mature Spruce Feathermoss (SF), mainly spruce with feathermoss ground cover. Ht - 16m, Age - 95 yrs, CC 25%
- SS(0) - Exposed Soil**
Exposed Soil (ES), usually on south facing dry exposed surfaces, where vegetation doesn't readily establish due to disturbances, i.e. erosion (wind, water).
- UR(0) - Urban/Rural**
- AG(0) - Agriculture**
- OW(0) - Open Shallow Water**
- WE(0) - Wetland**



1:12 500 scale



Research Forest



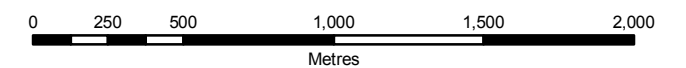
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- Trails



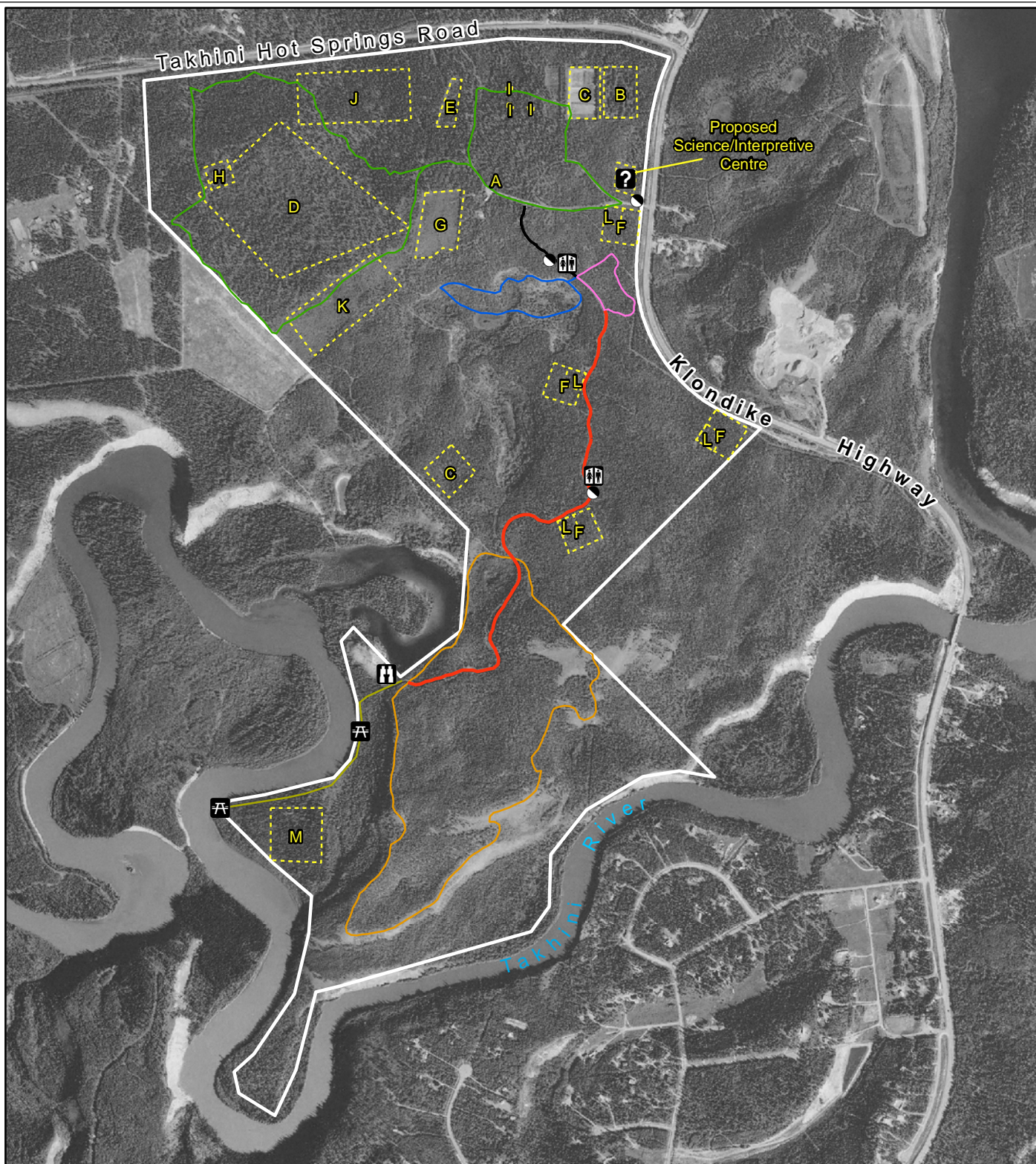
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Trees from site K used for fence construction. Project on hold pending outcome of Agriculture Association application.

1:30 000 scale



Gunnar Nilsson Mickey Lammers Research Forest



- Information
- Out House
- Picnic Area (to be completed 2010)
- Viewing platform
- Turnaround Points
- Connector Route 1 (287m)
- Connector Route 2 (1591m)
- Elders Trail (420m)
- Kettle Lake Trail (978m)
- Lowland Route (732m, To be completed for 2010)
- Upland Route (3188m)
- Forest Science Loop (5022m)
- Forest Research Areas
- Research Forest Boundary

- A** INFRASTRUCTURE
- B** LODGEPOLE PINE PROVENANCE STUDIES
- C** AGRICULTURAL TEST SITE
- D** COMMUNITY (BOREAL FOREST) ECOSYSTEM MONITORING PROJECT
- E** TREE & SHRUB HARDINESS STUDY
- F** PINE THINNING STUDY
- G** GENETICS TESTING
- H** ACID RAIN NATIONAL EARLY WARNING SYSTEM
- I** NATIONAL VEGETATION & INVERTEBRATE DECOMPOSITION STUDY
- J** WHITE SPRUCE PROVENANCE STUDIES AND CLIMATE CHANGE PROJECT
- K** SPRUCE PROVENANCE TRIALS
- L** SECOND THINNING OF LODGEPOLE PINE THINNING TRIAL
- M** PROPOSED RESEARCH TRIAL IN MATURE WHITE SPRUCE ON FLOOD PLAIN SITE

Map Compiled By:
GIS Section
Forest Management Branch
Energy, Mines and Resources
Government of Yukon
<http://www.emr.gov.yk.ca/forestry/>
456-3999



1:16,500



Projection: UTM Zone 8 Datum: NAD 83

