

# 1995/1996

## **Annual Report**



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### **Foothills Model Forest**

(boreal, subalpine, alpine and montane forest regions)

Weldwood of Canada Limited	
Forest Management Agreement Area	1,012,119 ha
Jasper National Park	1,087,800 ha
Crown Forest Management Units	202,962 ha
Cache Percotte School Forest	2,933 ha

**Total Land Base** 

2,305,814 ha

Sponsors:



Weldwood of Canada Limited Hinton Division Canadian Heritage Parks Canada Patrimoine canadien Parcs Canada





Natural Resources Canada Canadian Forest Service Ressources naturelles Canada Service canadien des forêts



Box 6330 Hinton, Alberta Canada T7V 1X6

Phone: (403) 865-8330

Fax: (403) 865-8266 Honourable Anne McLellan Minister of Natural Resources Room 322, West Block House of Commons Wellington Street Ottawa, Ontario K1A 0A6

May it please your Honour:

On behalf of the shareholders and partners of the Foothills Model Forest, I respectfully submit the Annual Report for the fiscal year ended March 31, 1996.

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Robert W. Udell, R.P.F. President Foothills Model Forest



### President's Message

The Foothills Model Forest had an exciting year in 1995 - 1996. This, the third full year of operation saw many changes, challenges and successes!

The Foothills Model Forest became the largest model forest in the world in September 1995 when Jasper National Park, a UNESCO World Heritage Site, joined its landbase. Thus, the Foothills Model Forest now conducts sustainable forest management research on 2.3 million hectares, or 23,000 square kilometres along the eastern slopes of the Rocky Mountains of westcentral Alberta.

Having a landbase this size allows the Foothills Model Forest the opportunity to study a great deal of interjurisdictional and trans boundary issues. Some issues of particular concern include large mammals such as caribou, ecological classification systems, fire, and insect and disease management.

The signing ceremony held to incorporate Jasper National Park provided an opportunity for the Foothills Model Forest to host the Federal Minister of Natural Resources, the Honourable Anne McLellan, for the first time. The Board of Directors and researchers thoroughly enjoyed discussing with Minister McLellan our many project successes and the future possibilities that exist with the addition of such a large land mass.

The addition of Jasper National Park was again a reminder of the dedication and enthusiasm that is found in our sponsors and partners, providing our strength in the national Model Forest Network, a program that is setting Canada apart in sustainable forest management.

Our involvement with the Chihuahua Model Forest in Mexico continues to grow and is proving to be a tremendous experience in terms of partnership building and exchanging expertise. The Foothills Model Forest Administrator has been charged by the Foothills Model Forest Board of Directors to oversee many of the day-to-day activities of the Chihuahua program. This involvement has played a valuable role in keeping the various projects on track with the hard working and dedicated staff in Chihuahua. A number of the planned projects are well underway and are now producing tangible results. We look forward to the upcoming National and International Model Forest Network meeting in Chihuahua in the fall of 1996, where the benefits of this program and the dedication of those entrusted to carry it out will be shared with the world.

As well, great progress was made in the five new wildlife research projects initiated in the fall of 1994. These studies on the red squirrel, barred owl, songbird, northern goshawk and woodpeckers will provide more information about habitat requirements for wildlife in the Foothills Model Forest.

Forestry research followed along schedule in 1995 - 1996, and continues to accumulate data that will improve forestry practices and stand productivity. A new fish and aquatic habitat inventory project began in 1995 -1996, and existing watershed projects continued on schedule.

The Foothills Model Forest recognizes the need to continue striving to find answers that will lead to the sustainability of our forest lands. Our strong desire to see this network continue will urge us towards improving on this pivotal year in the history of the Foothills Model Forest. We are looking forward to tackling the challenges and rewards that will come in 1996 - 1997.

Sincerely,

Robert W. Udell, R.P.F.

President

### **Program Overview**

The Foothills Model Forest is one of 10 model forests across Canada that make up Canada's Model Forest Network. Today the network is funded as part of the "Partners in Sustainable Development of Forests" program, administered by the Canadian Forest Service of Natural Resources Canada.

The "Partners in Sustainable Development of Forests" program was developed to demonstrate Canada's commitment to sustainable development and to maintain the health of our forests for the benefit of people everywhere.

The Foothills Model Forest, in Alberta, is now the largest model forest in Canada, and the world. The landbase includes several forest regions: specifically sub alpine, alpine, montane and boreal.

The landbase is approximately 2.3 million hectares, or 23,000 square kilometres in size. It includes all of Jasper National Park, all of Weldwood of Canada's Forest Management Area (FMA) and additional provincial (crown) lands.

The Foothills Model Forest is a non-profit corporation, founded on November 2, 1992 under Part 9 of the Companies Act of Alberta. The Board of Directors has overall responsibility for the Foothills Model Forest program and is comprised of 10 members including representatives from the sponsoring partners (Jasper National Park, Weldwood of Canada Ltd., Alberta Environmental Protection and the Environmental Training Centre in Hinton), and the Partners Advisory Committee.

An Executive Committee, comprised of local representatives from the Board of Directors who represent the sponsoring partners, meet regularly to expedite the delivery of the Annual Work Plan.

The Partners Advisory Committee is a 12 member group of elected representatives from the larger partner coalition of some 70 individuals and organizations. This group, working in conjunction with the Project Steering Committee, is responsible for helping to identify any potential information gaps that may exist in the development of work plans and making recommendations to the Board of Directors on proposed plans and activities.

The Project Steering Committee, with representation from Weldwood of Canada Ltd. (Hinton Division), the Environmental Training Centre, Alberta's Department of Environmental Protection Land and Forest Services and Fish and Wildlife Division, and Jasper National Park prepares the annual work plans, five year work plans and submissions for the annual report.

The Project Coordinator, (a full time forester seconded from the Department of Environmental Protection), in conjunction with the Project Steering Committee, is responsible for the overall coordination and continuity of the Foothills Model Forest program.

The projects and activities of the Foothills Model Forest are delivered by the full time staff members including: a GIS (Geographic Information Systems) analyst, wildlife biologist, forest operations coordinator, Jasper National Park liaison, watershed coordinator, and communications officer. Research opportunities have also been created for graduate students and research assistants from the University of Alberta, Saskatchewan and Guelph.

The Foothills Model Forest mission is: "to develop and recommend an approach to sustainability and integrated resource management through research and technology developed by means of collaborative partnerships."

The sponsoring partners and staff are committed to achieving this mission by incorporating values such as conservation, cooperation and integrated resource management into the Foothills Model Forest program.

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## Foothills Model Forest Officers

Name	Title	Principal Occupation
Ross Risvold	Chairman of the Board	Mayor of Hinton, Director Alberta Environmental Training Centre
Robert Udell	President	Manager, Forest Policy & Governmental Affairs Weldwood of Canada Limited (Hinton Division)
M <b>ar</b> sha Spearin	Secretary	Administrative Coordinator Weldwood of Canada Limited (Hinton Division)
William Craig	Treasurer	Divisional Controller Weldwood of Canada Limited (Hinton Division)

## **Foothills Model Forest Board of Directors**

Michel Audy	Board Member	Superintendent, Jasper National Park Parks Canada
James Beck	Board Member*	Professor, Forest Management University of Alberta
Frank Cardinal	Board Member	Director, East Slopes Region Fish and Wildlife Alberta Environmental Protection
Colin Edey	Board Member*	Senior Environmental Planner Nova Corporation
Jerry Sunderland	Board Member	Director, Northern East Slopes Region Land and Forest Services Alberta Environmental Protection
Dennis Hawksworth	Board Member	General Manager, Forest Resources & Lumber Weldwood of Canada (Hinton Division)
Dennis Quintilio	Board Member	Director, Forest Management Division Land and Forest Services Alberta Environmental Protection
Robert Newstead	Ex-officio Member	Model Forest Coordinator, Northwest Region Canadian Forest Service

\* Members elected by the Partners Advisory Committee

### **Activity Areas**

### Information Research and Knowledge

### **Ecologically Based Pre-harvest Planning**

Planning for successful reforestation requires the integration of both silviculture and harvest planning. This is often difficult because a large number of variables have to be considered to produce a plan that is biologically sound, environmentally acceptable and economically reasonable. Without a systematic approach, essential elements may be neglected or overlooked altogether.

An ecologically based pre-harvest planning process will provide a systematic framework to link silviculture and harvest planning to ensure timber and non-timber management objectives for the area are translated into site specific operations.

Together, Weldwood of Canada Ltd., Hinton Division, the Canadian Forest Service and Alberta Environmental Protection began the project to improve resource information and assist in implementing an ecologically based silviculture and harvest planning process, assist in improving and extending the ecological classification system for West-central Alberta, provide integration of the silviculture and harvest planning processes, and provide a framework for environmental and technical audits.

In 1993 and 1994, trials were undertaken on selected areas planned for harvest within Weldwood of Canada's Forest Management Area. A review of the pre-harvest assessment and prescription procedures and the site classification system followed. In 1996, the Field Guide to Ecosites of West-Central Alberta was completed. Weldwood of Canada now implements this tool in pre-harvest assessments and prescription processes.

### Integrated Resource Management and Sustainability

### A. Forest Wildlife and Ecology Program

The forest wildlife and ecology program applies the mission of the Foothills Model Forest to wildlife and other ecological values of the forest ecosystem. The program supports research in two project areas: determining the habitat requirements of forest dependent wildlife species in the Foothills Model Forest (e.g. elk, caribou, squirrels, owls, hawks, woodpeckers, songbirds, salamanders); and, understanding the role of disturbance in local forest ecosystems through comparison of biodiversity in forests recently disturbed by forest fire to those disturbed by clearcut logging and reforestation activities.

The following current projects are being undertaken by graduate students at the Universities of Alberta, Saskatchewan and Guelph.

## 1. Population Ecology of Red Squirrels in Different Habitats

The diversity of plant communities in the Foothills Model Forest provide different opportunities for reproduction and survival of many animal species, including small mammals such as the red squirrel. Forest harvesting causes changes to plant communities, and will therefore affect populations of animals that live in those habitats. The work begun this year will estimate the relative importance to red squirrels of three mature forest types in the foothills region (white spruce, mixedwood, lodgepole pine).

Researchers completed the first of two field seasons in 1995. His work included livetrapping, call-counts, and vegetation sampling in 12 study areas, all within 50 kilometres of Hinton. Preliminary results suggest that while squirrels reach their highest densities in white spruce habitats, reproductive rates may be greater in lodgepole pine stands than in the other two habitats. The proportion of females



Red Squirrel

breeding, and the average body weight of both males and females did not appear to differ among habitats. These results will be compared to samples obtained in 1996, to provide a dearer picture of red squirrel habitat use in the Foothills Model Forest.

#### 2. Habitat Requirements of the Northern Goshawk

Northern Goshawks are the largest forestdwelling birds of prey in the Foothills Model Forest. Studies elsewhere in their geographic range suggest that they are sensitive to harvest operations because they require stands of mature forest for nesting. They are also very secretive, and studying them is a difficult challenge.

The researcher has completed the first of two field seasons of research. The goal is to provide land managers with a description of the habitat requirements of this species. Techniques include searching for nests, observing prey delivery at active nests, and broadcasting Goshawk calls to elicit responses from nesting birds.

Fine mesh nets and live traps were used in an attempt to capture Goshawks in order to attach miniature radio transmitters to permit remote monitoring of movement and activity patterns. In 1995, two Goshawk nests were located, and three Goshawks were successfully captured. The monitoring of movements of one of these birds in and around W.A. Switzer Provincial Park will continue into the spring of 1996. Results of this project to date suggest that Goshawks in this region build their nests in large aspen trees within a variety of stand types; Goshawks forage in a range of different habitats; and, during the nesting stage, they feed primarily on small mammals. This project is also providing additional information on other large bird species in the area, including several species of hawks, in addition to owls and ravens.

## 3. Habitat Requirements of the Barred Owl

The Barred Owl is a spectacular member of the bird community of the Foothills Model Forest, and, like the Northern Goshawk, may be sensitive to harvest operations because they nest in relatively large trees.

The researcher began this research in 1995. The abundance and distribution of Barred Owls and other owl species in the Foothills Model Forest will be estimated, and information on their nesting and roosting requirements in this area will be obtained.

By broadcasting the calls of several owl species along roads at night, the researcher was able to confirm the presence of 29 Barred Owls and five other owl species (Boreal Owl, Great Gray Owl, Great Horned Owl, Northern Saw-whet Owl, Northern Pygmy Owl).

Efforts to catch Barred Owls in live-traps resulted in the capture of only one female Barred Owl. The miniature radio transmitter attached to this owl has permitted remote observation of her movements in the Solomon Creek area, and several roost sites have been located and characterized.

Preliminary findings suggest that Barred Owls use large trees for both roosting and nesting, and may prefer mixedwood stands for nesting, roosting and feeding. The addition of Jasper National Park to the Foothills Model Forest landbase gives researchers with this project the opportunity to expand sampling in 1996 to include the National Park.

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### 4. Habitat Requirements of Woodpeckers

Woodpeckers are ecologically important in forest ecosystems because they excavate cavities in trees that are used by other birds and animals, and because they prey upon a wide range of insect species, including those such as bark beetles and other insects that attack and kill trees.

Surprisingly little is known about the several species of woodpeckers in the Foothills Model Forest, so as a first step to effective conservation, researchers are working towards a better understanding of the trees and habitats used by woodpeckers for nesting, roosting and feeding.



Pileated Woodpecker

Activities in 1995 included locating woodpecker nest trees, and describing the characteristics of each tree and the surrounding habitat relative to randomly located trees and habitats. Observations of woodpecker activity along transects through different habitats will provide estimates of their relative importance to each species.

A total of 141 woodpecker nests were located in 1995 (52 Northern Flickers, 51 Yellow-bellied Sapsuckers, 25 Three-toed Woodpeckers, and 13 Hairy Woodpeckers). Flickers, sapsuckers, and Hairy Woodpeckers preferred to nest in deciduous trees (mostly trembling aspen), while the majority of Three-toed Woodpecker nests were located in coniferous trees (mostly spruce and pine). Analysis of nesting habitat characteristics and transect results are in progress.

## 5. Abundance and Distribution of Songbirds in Mixedwood Forest

Forest songbirds are of great conservation concern in Alberta and elsewhere in North America because of ongoing changes to their habitat in summer nesting areas, and for several migratory species, in their winter range in the tropics. Declines in populations of several migratory species that breed in eastern North America have been confirmed, but the cause of these declines is uncertain.

As a contribution to our understanding of this problem, researchers are studying habitat requirements of songbirds during the breeding season in the Foothills Model Forest.

The focus of the work is to compare the relative contribution of vegetation conditions and predation pressure to the reproductive success of songbirds in this region.

Field sites are located in the Lower Foothills, northwest of Edson, where harvesting over the past 30 years has added to an already complex mosaic of mixedwood forest stands.

Techniques include observations of birds during stationary point counts in six young stands harvested 25 years ago and six unharvested mature stands that originated after fires almost 100 years ago. The survival from predation of experimental eggs in both natural and artificial nests was also monitored in each habitat.

Results from the 1995 field season suggest that while young and mature stands contained a similar number of songbird species (about 30 species), some species such as Yellow-Rumped Warbler and White-throated Sparrow preferred mature stands, while other species appeared to prefer young stands. Mice, birds and red squirrels proved to be the most important predators of eggs in artificial nests, and of the 34 natural nests located, predation rates did not appear to differ between young and mature habitats.

## 6. Habitat Use and Genetic Variability of Long-Toed Salamanders

Long-toed salamanders are secretive and poorly understood amphibians in the mountains and foothills of Alberta. Adult salamanders live on land, but congregate in ponds each spring to mate and lay eggs in water, which then hatch into aquatic larvae. Because they depend on both aquatic and terrestrial habitats, salamanders may be influenced by a wide



Long-Toed Salamander

Researchers completed the second of two field seasons in 1995, during which salamander populations were sampled in a range of habitats in the Foothills Model Forest. The genetic makeup of Foothills Model Forest salamanders and other populations elsewhere in Alberta and British Columbia were also compared.

Over one thousand salamanders have been captured and based on information gathered to date, it appears that aquatic habitat characteristics are more important in determining abundance than terrestrial habitat conditions.

Laboratory analysis of salamander tissues revealed that Hinton area salamanders were genetically similar to those found in Jasper National Park and Mount Robson Provincial Park, but were distinct from those found in the Banff - Canmore area. This study provides an excellent example of the genetic diversity found in many animal populations.

### 7. Winter Habitat Selection by Elk

Elk are a socially and economically important species in the Foothills Model Forest, and require careful management in order to ensure sustainable populations. Winter is a critical period for elk, during which they occupy a mosaic of habitat conditions to meet requirements for food, and for shelter from adverse weather.

**Research** into elk habitat requirements began in a**n** a**r**ea north of Hinton in 1994, with field work being completed in 1995.

The objective of the study was to identify important habitat components of elk winter range, and to develop a model capable of predicting the location of suitable habitat both now and in the future. Locations used by elk for bedding and feeding were obtained by following 10 elk fitted with radio transmitters, and by observing other elk in the study area. Preliminary results suggest that elk are tolerant of a wide range of habitat conditions. Model development is in progress.

#### 8 Woodland Caribou Winter Range Habitat Selection In West-Central Alberta

Across Canada, wildlife and forest managers have faced conflict with trying to integrate woodland caribou habitat needs with timber harvesting activities. In west-central Alberta costly timber harvest plans for caribou range have been negotiated, but they are experimental in nature and need to be monitored.

This study will be used to develop habitat suitability indices for woodland caribou winter range in west-central Alberta. Woodland caribou distribution and habitat selection prior to timber harvest have been studied for eight years. A portion of the northern half of the range has now been harvested and, for the past three winters, the Foothills Model Forest has implemented a standard radio-telemetry helicopter relocation study to monitor caribou response to timber harvest, using 20 - 25 radiocollared animals.

A total of 340 relocations were obtained from November 16, 1995 to May 13, 1996, to add to the 800 gathered from 1980 - 1995, which includes sampling from a period prior to and after harvest activity. The results to date suggest an avoidance of cut over areas that does not appear to be influenced by snow depth, as suggested in the 1994 progress report.

There was no difference in the reproductive performance of females between the two groups in either year, with the radiocollared sample appearing to demonstrate a higher rate of productivity following the mild winter of 1994 -1995 than the previous winter. In 1995, females observed with calves in June were located again in mid September to detemine calf survival to 3.5 months. Only 18 radiocollared females were observed in both the surveys (June and September). The sample indicated a 50 per cent loss of calves at heel over that period, which is consistent with results of previous studies in the same area.

Adult mortality has been confined to winter range and has been equitably distributed between samples from both the disturbed and undisturbed range.

The ground work has now been completed. Researchers followed 37 caribou paths and marked 340 GPS locations in 1995. This was added to the 36 paths and 392 GPS locations from the previous winter. Habitat characterization was completed in August 1995 and his thesis is in progress.

### 9. Effects of Forestry Practices on Terrestrial Lichen Communities

Terrestrial lichens occur extensively across much of the Foothills region, and in some forest communities they represent the dominant ground cover. In the northwestern portion of the Foothills Model Forest, terrestrial lichens are an important source of food for woodland caribou, a threatened species in Alberta. Because certain logging practices disrupt lichen communities, there is an urgent need to develop technologies to preserve terrestrial lichens within the range of woodland caribou. The objective of this research is to estimate the immediate impacts of different harvesting and site preparation treatments on terrestrial lichen communities.

Researchers sampled lichens in three study blocks south of the Berland River near Highway

40, prior to harvesting. The species composition, abundance and spatial patterns were described. Changes to the lichen communities after harvesting and site preparation were measured last summer. The impacts of harvesting appear to differ according to whether cutting occurred in summer or winter, and whether the site was scarified or not, after cutting. Permanent marking of all sampling locations will permit longer term monitoring of the recovery of lichen communities over the next several years.

## 10. Ecosystem Response to Disturbance at the Stand Scale

Stand-replacing disturbances such as forest fire and logging affect stand structure, composition, and a diverse array of ecological processes. Although stands recover after disturbance, there is considerable evidence that recovery after fire differs from recovery after logging. Fires frequently remove fine woody material and leave coarse woody material such as tree boles intact, providing a structural legacy for the recovering stand. In contrast, clearcut logging removes all merchantable tree boles from the stand. The effects of this and other differences between fire and logging on future biodiversity and site productivity are poorly understood.

Foothills Model Forest research in the Gregg River study area, during 1995, has revealed some interesting differences in stand structure between stands recently disturbed by fire and logging. The sample design consisted of 10 pairs of plots along the northwest boundary of the 1956 Gregg River Burn, south of Hinton. One plot in each pair is located within the burn, the other is located within an adjacent stand harvested between 1963 and 1974. Estimates were obtained of the density and size of standing live and dead trees, surficial woody material, and small mammal populations.

As expected, the stands recovering after fire tended to contain more fallen logs than harvested stands. Interestingly, logs in the burned stand also tended to be higher off the ground, and had fewer plants such as mosses growing on the surface of the log. The relationship between fallen logs and small mammals such as red-backed voles appears to

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be **comp**lex, and further work is required to understand the effects of stand structure on vole populations.

## 11. Landscape Patterns of Disturbance in the Rocky Mountains and Foothills of Alberta

Forest fires are responsible for much of the natural variability in the Foothills and Rocky Mountains of Alberta. As a result of standreplacing fires in particular, forests in these regions consist of a constantly changing mosaic of age classes. Because clearcutting and prescribed fire also replace forest stands with younger stands, a better understanding of natural variability in disturbance would assist in the setting of management objectives for the size and arrangement of cutblocks and prescribed burns.

This Foothills Model Forest research project began in early 1996, and the first season of data collection will begin this summer. Historical aerial photographs will be used to identify the locations of past fires throughout the Foothills Model Forest, including Jasper National Park. Field samples of trees along the boundaries between old burns will help to determine the year of the last fire. This data will be appended to existing fire history information and incorporated into a computer GIS for display and analysis.

### **B.** Watershed Program

The Watershed Program has completed the first full year of projects. The program is guided by strategic planning recommendations from a 1994 workshop of local fisheries biologists, hydrologists and land managers. An additional workshop was held in March 1996 to outline the current status of the watershed program and receive input and direction from previous participants and additional interested individuals and organizations.

Watershed program objectives are: to develop a planning tool and provide resource information to managers to better evaluate land management alternatives for effects on hydrology, aquatic habitats and fish. Strong partnerships with our major sponsors and support from various funding agencies allowed projects to be initiated in five main areas.

- fish and aquatic habitat
- sedimentation
- hydrology
- water yield
- development of a Watershed Assessment Model (WAM)

All projects are designed to utilize and build upon existing information. Project results are formatted to facilitate use within WAM and directly in resource management decisions.

#### 1. Fish and Aquatic Habitat Inventory

Land-use activities rarely result in positive effects with respect to fish populations and aquatic habitats. Objectives of this project are to collect inventory data on fish populations and habitats; develop a sampling protocol for aquatic environments; develop a database of existing fisheries data and investigate the relationships of land-use activities on fish populations and aquatic habitats.

This information is required to properly predict, mitigate and manage effects of land-use disturbances on aquatic ecosystems. Information on fish and aquatic habitats will assist Weldwood of Canada Ltd. (Hinton Division) in access and road construction planning, harvest scheduling and operational planning. It will also provide baseline information to evaluate and monitor present and future effects of land disturbances on aquatic ecosystems as well as information that will be used to evaluate the success of past management decisions.

In 1995, specific study areas were selected based on different levels of access. Access was divided into two general categories: high access (areas that most highway vehicles could access in most weather conditions) and low access (areas where Weldwood of Canada had not developed a road system). The highest priority for inventory work was given to low access areas where road construction was planned in the next two years.



Native Rainbow Trout (Athabasca Strain)

There were 32 sites electrofished in 1995. The largest proportion of sportfish captured were rainbow trout (51 per cent) and brook trout (36 per cent). All inventory data were entered into a relational database that has been linked to the Geographic Information System (GIS) at Weldwood of Canada Ltd. (Hinton Division). This information has been shared with Weldwood of Canada (Hinton Division) and Natural Resources Service, Alberta Environmental Protection.

### 2. Fisheries Information Databases

Historical information on fish populations and habitat description of streams within the Foothills Model Forest has been entered into a relational database. This information comes from past inventories and research conducted by Alberta Fish and Wildlife, consultants and research programs such as the TriCreeks Experimental Watershed Project. Information stored on streams includes fish data, habitat data, specific reach and basin descriptions. The database can be linked to the GIS through stream name and location. The source and reference (including library location) for all information is recorded to allow original reports to be accessed.

A literature review of published and unpublished reports, summaries and reviews containing information on habitat requirements for the four sportfish species under study (Athabasca rainbow trout, bull trout, Arctic grayling and mountain whitefish) located in the Foothills Model Forest area is being completed by a consultant. The project goal is to gather existing information on habitat requirements of native sportfish into an information database and summary report. These results will help to identify key habitat parameters that can be used to monitor or predict the impacts of land disturbance on fish. Habitat requirements, life-requisite needs, sensitivity to land-use impacts and past research results will be presented. This information will be used within WAM (Watershed Assessment Model) to characterize aquatic habitat requirements.

### 3. Sedimentation Intrusion Study

Road crossings are a primary source of sedimentation and erosion into streams. Sediment intrusion (sediment which settles in the spaces of streambed gravel) may cause fish mortality by suffocating and blocking-in fish eggs and newly hatched fish, and by disturbing the small invertebrates within the spaces of the streambed's gravel.

Knowledge of the effects and the longevity of sediment intrusion is limited and standard sampling procedures are lacking. In order to protect fish populations, to evaluate industry compliance with guidelines and to evaluate enhancement programs, better information and more reliable methods need to be developed to measure sediment intrusion and its associated effects on fish habitat and populations.

Road crossings on seven small streams and five medium streams were selected for freeze-core sampling. Upstream and downstream sampling sites were paired by choosing similar substrate size and water velocity. Hollow probes were **inserted into** the substrate and filled with dry ice **as a coolant**. After 20 to 30 minutes of freezing **the frozen sa**mples were extracted. The top 10 **cm were stored** separately.

**Particle size** distribution analysis was conducted using sieving, hydrometer techniques, and sonic sifting. Additional sampling will take place in 1996. Surveys and descriptions of channel and crossing characteristics will be taken for all sites. Comparative and regression analyses will be performed to assess the predictive value of these characteristics for sediment impacts on streams.

### 4. Regional Hydrology Study

Streams and associated resources such as fish habitat may be affected by a change in peak flows, low flows, duration of high flows and the timing of discharge. The objective in developing a Regional Hydrology Study for the Foothills Model Forest is to organize and present quantitative information about streamflow arnount, timing and variability.

Past research and monitoring programs have collected streamflow data at locations throughout the Foothills Model Forest. Based on the ancept of hydrologically homogeneous regions, an area which has similar meteorologic inputs will display similar hydrologic response (output). Direct regression analyses were performed on the available hydrometric data. The hydrologic estimates evaluated were: instantaneous peak discharge; flood runoff volumes; annual flows; monthly flows and seven day duration low flows. Significant predictive relationships were established for all estimates. A lack of winter streamflow data limits confidence in the low flow estimates.

**Technical** analyses are complete and a draft **report** has been received and a user manual will **be** available in the near future. This **information** will be used to characterize the hydrology of streams within the Foothills Model Forest and will assist in planning and evaluation of management alternatives. It will also serve as a basis upon which to classify the **morphological** features of a channel and thus is **linked to** an evaluation of fish habitat, channel **configuration**, and potential sediment loading.



A winter stream showing streamflow

### 5. WRNSFMF - Water Yield Annual Yield Hydrologic Model

The hydrologic portions of the Water Resources Evaluation for Non-point Silvicultural Sources (WRENSS), initially developed by the USDA Forest Service (1980) was designed to evaluate the changes in annual hydrologic yield, in a watershed, in response to changes to the land base. This predictive methodology evaluates how different harvest practices can change the hydrologic regime. It is based on the premise that the areal distribution of snow is affected by the distribution and size of clearings (i.e. forest harvest blocks).

The Canadian Forest Service developed a computer model of the original graph-based workbook which was available in the late 1980's. The Foothills Model Forest contracted a consultant to develop a PC (MS-Access) version of this model which would accept database input and is customized for the Foothills Model Forest area and local hydrologic processes. Initial comparison of results from this model with data from the 1973 - 1974 Canadian Forest Service hydrologic research project in this area shows good predictive capability.

WRNSFMF requires relatively little information to run. Seasonal precipitation, wind speed, forest cutting, forest cover and regeneration data, growth curves for basal area and height, and watershed area are the only required input parameters. Optional information on block elevation, aspect and wind direction may also be used. WRNSFMF provides an estimate on annual water yield changes (not actual water yield). This analysis includes the cumulative effects of sequential harvest through time.

A project to develop a mechanism to link changes in annual yield to changes in peak flows is under development. Another project to run the WRNSFMF model on 15 to 20 basins within the Foothills Model Forest and evaluate estimates over the past 40 years of harvest in these areas will be completed during the summer of 1996.

### 6. Watershed Assessment Model (WAM) Development

The primary goal of WAM is to develop a system capable of evaluating harvest plans for the resulting cumulative effects on the quantity and quality of water yield in a watershed and subsequent impacts on quantity and quality of aquatic and fisheries habitat. WAM will be most efficient at the medium basin level but, based on data input, can be used at the landscape or site specific level. It will be designed as a framework for use, driven by the users specific needs and desired results and will be adaptable for input as new information evolves. Initially, WAM will be developed on a UNIX platform with an Arcview interface and later adapted to PC. Model development is just beginning, but a model option is anticipated by the end of the summer, a pilot in the fall, and prototype by January 1997.

### **C. Forestry Program**

#### **Improved Forest Practices**

### 1. Validation of Basal Diameter Ratio Competition Index for Pine-Aspen

Selecting stands for the best response to, and economic return from, release treatments is difficult because of the high cost of treatment and limited information on biological efficacy. Current treatment decisions are generally subjective and foresters need quantitative tools to assist in these decisions.

The Canadian Forest Service is conducting this study to test the application of the Basal Diameter Ratio (Navratil and MacIsaac, 1993) competition index. The BDR quantifies the level of aspen competition that best predicts lodgepole pine growth.

In 1993, initial vegetation and conifer measurements were done. In the same year, aspen within 1.8 metres of the pine crop tree was removed. In 1994 and 1995, growth response measurements were completed.

Preliminary findings show that two years after treatment, there are significant differences in radial growth response between treatments, but no differences in pine height-growth between treatments.

A second year post-treatment progress report has been completed, with the final report expected in April, 1997.

#### 2. Silvicultural Impacts of Chipper Residue Disposal

Remote chipping is a practice that is increasing in forest harvesting operations today. In many operations, the residue from the remote-chipper operation is being spread back onto the site. Little information exists on the effects of this woody debris on the forest soils, and on the growth of the crop trees.

For this project, Canadian Forest Service researchers are studying the effects of differing amounts of chipper residue on the soils, as well as on the growth of the planted seedlings. Both foliar and soil samples have been collected and analyzed for the effect on total and available nutrient levels. Seedlings are being monitored to determine if there is any difference in growth responses due to varying levels of chipper residue. Distribution patterns of current operational disposal practices are also being monitored.

## 3. Aspen Regrowth and Competition After Release of Conifers

Aspen regrowth from suckering often necessitates repeated tending treatments, which can be very costly. Little is known about how time and height of cut affects the density and growth of aspen and how these processes are in turn controlled by aspen size and age.

In this study, researchers from the Canadian Forest Service are looking at the effects of the time of year of the cut as well as the height of the cut in reducing aspen regrowth after tending. The end result will be the formulation of tending results for lodgepole pine.

Three separate areas have been selected with the treatments being completed on all of them. Remeasurement data exists from first year and up to four years after treatment. Data analysis is in progress. A report was due April, 1997, but may be delayed due to a leave of absence for a year by researchers.

### 4. Adapting Shelterwood Practices to Enhance and Protect Natural White Spruce Regeneration in Deciduous -Coniferous Mixedwoods

The mixedwoods of the boreal forest tend to revert to deciduous stands when clearcut. The maintenance of conifers in the mixedwood is important from wildlife and aesthetics perspectives, as well as for timber production.

Researchers from the Canadian Forest Service are investigating the operational feasibility of promoting white spruce "seed" regeneration in mature aspen-white spruce cover types. Shelterwood cuts of varying removal levels will be used to promote natural white spruce regeneration and inhibit aspen reproduction. Two operational trials have been established and harvested. Air temperature monitoring data-loggers have been installed on each site, and regeneration monitoring plots have been established. Two years post-harvest data has been collected, and further data collection and analysis will occur prior to delivery of the final report in late 1997.



Shelterwood site - N.E. of Hinton

### Stand Productivity

### 5. Tree Growth and Stand Yield Impacts of Basal Girding by Small Mammals in Polesized Lodgepole Pine Stands

Basal girdling (the chewing of the tree bark and cambiam near ground level) by small mammals is expected to have significant growth and yield impact in some lodgepole pine stands regenerated after clearcutting. The damage is evident on 15 - 35 year-old regenerated stands in certain geographical areas.

This study, also initiated by the Canadian Forest Service, is attempting to quantify the growth and yield impacts due to girdling by small mammals.

All field work and analysis has now been completed, with the final report being completed currently.

### 6. Soil Compaction Study

The compaction of soil by harvesting equipment is a concern in the foothill and boreal foress. A study was initiated by the Alberta Environmental Centre in May 1994 to quantify the effects of compaction on forest soils during summer harvesting and subsequent effects on conifer performance. The three objectives of the study are: 1) to model the compaction of soil resulting from skidder traffic; 2) determine the natural rate of decompaction; and 3) determine the effects of compaction on conifer survival and growth.

Five new sites were established and soil measurements taken in 1995 - 1996; soil was remeasured at the nine sites established the previous year. Weather stations were installed at all sites, and several of the original sites were site prepared, planted, and seedlings measured.

Soil wetness was the dominant factor affecting bulk density in the preliminary model of soil compaction. A significant increase in bulk density occurred on wet soil after only three skidding cycles, but no further significant increases occurred with increasing cycles. Skidding on dry soil did not result in significant soil compaction after 12 cycles. Natural decompaction of the surface soil occurred at several sites after the first winter, but was limited to the low to intermediate level of trafficking.

Completion of the third year of field work, and processing and analysis of that work is expected to be completed in 1996 - 1997. Research sites will also be maintained and managed.

#### 7. Carbon Budget Model Project

The Carbon Budget Model of the Canadian Forest Service considers the carbon associated with forest growth, soil processes, ecosystem disturbances (including harvesting) and wood products. It tracks the transfers of carbon among the identifiable carbon pools, from and to the global atmosphere, to derive an estimate of the net gain or loss of carbon by a forested area. It thereby enables the investigation of effects of changes in management and environmental factors on the forest carbon budget.

The purpose of the Foothills Model Forest study is to adapt the Canadian Forest Service Model so that it may be used to derive an estimate of the current, past and possible future carbon budgets of the Foothills Model Forest area. The analysis will provide information to help local forest managers assess the effects of plausible management strategies on the local forest carbon budget. This will be of particular value in assessing the effects of possible increases in ecosystem disturbances, such as fires and insect attack, that may be associated with climate change, and of possible management and harvesting interventions to counteract these effects.

In April 1995 a preliminary analysis of the carbon budget of the Foothills Model Forest was completed. Difficulties in analyzing the current data were found. However, these problems are now resolved, and researchers are ready to proceed with simulations and analysis. Some 15 separate simulations will be carried out, which will allow the assessment of the effects of management compared to the natural unmanaged forest. Researchers will also assess the sensitivity of the Foothills Model Forest carbon budget to: different levels of harvesting, different levels of natural disturbances, and other factors, such as errors in estimation of average soil carbon decomposition rates.

### D. Social and Economic Issues

The Foothills Model Forest lists among its goals and objectives furthering our understanding of environmental, economic, social, cultural and spiritual values; developing and coordinating processes to facilitate consensus building and dispute resolution; and, achieving integrated resource management.

The overall goal of the Foothills Model Forest socio-economic program is to identify the stakeholders of the forest and to document their values, attitudes, and perceptions regarding the sustainability of resource management in the region. It will also document stakeholders perceptions on how they and/or their group fits into the resource decision making framework. The research program will provide comprehensive documentation on, and analysis of, existing public input and involvement mechanisms, as well as a substantive historical and contemporary analysis of the social, cultural, and economic importance of the various natural resource sectors to the region. Developments in 1995 - 1996 showed that progress had been made in three areas:



Fly-fishing is a popular recreational activity in Alberta

recreation, economics, and sociology. In recreation, permit data was collected and an overview of camping was created. This stream also involved the development of a travel cost model based on permit data. Preparations for the 1996 field season were also made.

In economics, a computable general equilibrium (CGE) model was constructed using provincial data. Five sectors were included and simulations were run to examine changes in wages and demand for labour given various scenarios of change in the resource economies.

In sociology, stakeholder interviews continued

and are roughly 90 percent complete (conducted and transcribed). Also, preliminary data for the socio-demographic background report was collected. Public participation forums were attended. Final reports are expected in 1996, 1997 and 1998.

### E. Environmentally Significant Areas Study

An integrated resource management philosophy must include conservation and sustainable development. A complementary and equally essential element of sustainable development is the establishment of a network of protected areas that conserve forest biodiversity, including genetic, species, ecosystem, spatial, and temporal aspects.

The Foothills Model Forest Environmentally Significant Areas Program was devised based on three basic objectives including:

- to develop an inventory of undisturbed or relatively undisturbed ecosystems, including currently protected areas and other lands.
- to identify ecosystems and areas that may be suitable and desirable for protection and to make such recommendations to the Depart ment of Environmental Protection.
- to incorporate undisturbed protected ecosystem objectives into integrated resource management strategies.

The phased approach taken by the Foothills Model Forest program was intended to compliment not only the federal government's ecological reserves sub-program, but Alberta's fledgling Special Places 2000 initiative.

Phase one of the study involved the development of a broad preliminary inventory of areas that may have some environmental significance. This was completed in 1994.

Phase two involved the development of a complete slope-class delineation for the entire Foothills Model Forest landbase, based on slopeclass delineations used in the West-Central Guide to Ecological Classification with the intent of being able to test run the ELDAR ecological classification software on potential sites. This component was completed in the spring of 1995. The third and final phase includes the development and implementation of a process for detailed ground truthing and submission to the appropriate approval bodies for their consideration as a protected area. This will hopefully be carried out in the coming year, if the funding is available.

This project was delayed for a year, moving all deadlines into 1996 - 1997.

### F. Communications Program

There were numerous communications initiatives conducted in 1995 - 1996.

The communications officer focussed heavily on local communications. By producing advertorials in local newspapers and working with local media, the Foothills Model Forest messages were communicated to the residents of Hinton, and other surrounding communities.

As well, Foothills Model Forest staff presented material from current research projects to technical audiences from around the province of Alberta. The Foothills Model Forest display was seen at a variety of conferences and meetings, including the Sustainable Forest Management National Centres of Excellence Conference.

In order to continue effective communications with local partners, working groups were created. These working groups are intended to facilitate the transfer of research information and eventual partner feedback. The goal is to clarify and solidify partnership involvement.

As in past years, tours were a constant feature during the spring, summer and fall months. These tours provided an opportunity for a variety of local and international groups to visit and learn about the sustainable forest management research program conducted by the Foothills Model Forest.

In early 1996 a research project was begun to evaluate the effectiveness of all previous communications initiatives. Results of this research will be available in May, 1996.

#### Jasper National Park Kiosk

In the spring of 1996, the Foothills Model Forest contributed funding towards the creation of an information kiosk. The kiosk was constructed on the corner of the Visitor Centre grounds at Patricia Street and Miette Avenue.

The kiosk communicates the mutually beneficial partnership between Jasper National Park and the Foothills Model Forest.

The creation of the kiosk is part of a Parks Canada sidewalk orientation program for visitors and residents and was launched in 1995.

This venue provides the Foothills Model Forest with an opportunity to inform approximately two million visitors per year, and Jasper townsite residents, about it's efforts in sustainable forest management research.



Michel Audy,(Foothills Model Forest Board Member) and Bob Udell,(President, Foothills Model Forest) unveil the Jasper National Park Kiosk

### Auditor's Report

To the Board of Directors of Foothills Model Forest

I have audited the balance sheets of the Canadian Forest Service Fund, the Contribution Fund and the Chihuahua Model Forest Fund of Foothills Model Forest as at March 31, 1996 and the statements of receipts and expenditures for the year then ended. These financial statements are the responsibility of the management of Foothills Model Forest. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with generally accepted auditing standards. These standards require that I plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management as well as evaluating the overall financial statement presentation.

In my opinion, these financial statements present fairly, in all material aspects, the financial position of the funds as at March 31, 1996 and receipts and expenditures for the year then ended in accordance with the accounting policies described in Note 1 to these financial statements.

Hinton, Alberta

May 21, 1996

A. L. Brau

**Chartered Accountant** 

### FOOTHILLS MODEL FOREST CANADIAN FOREST SERVICE FUND BALANCE SHEET (As At March 31, 1996)

### ASSETS

	1996 \$	1995 \$
CURRENT		
Cash Accounts receivable Prepaid expense Due from Contribution Fund	30,981 73,738 22,920	92,365 6,689 81,015 <u>8,089</u>
•	127,639	<u>188,158</u>
OTHER		
Deposit	625	625
	<u>128,264</u>	<u>188,783</u>
LIABILITIES		
CURRENT		
Accounts payable and accrued liabilities Wages payable	5,228 <u>6,047</u>	21,287 <u>8,186</u>
	11,275	29,473
FUND BALANCE	<u>116,989</u>	<u>159,310</u>
	<u>128,264</u>	<u>188,783</u>

C.L. (Les) Brown Professional Corporation

### FOOTHILLS MODEL FOREST CANADIAN FOREST SERVICE FUND

### STATEMENT OF RECEIPTS, EXPENDITURES, AND FUND BALANCE (For The Year Ended March 31, 1996)

	1996 \$	1995 \$
RECEIPTS		
Government of Canada	<u>918,200</u>	<u>1,012,000</u>
EXPENDITURES		
Information, research and knowledge Integrated resource management Communications Project management and	445,715 261,839 90,118	460,055 293,830 111,903
administration (Note 2c)	<u>162,849</u>	_141,130
	<u>960,521</u>	1,006,918
EXCESS (DEFICIENCY) OF RECEIPTS OVER EXPENDITURES	(42,321)	5,082
FUND BALANCE, BEGINNING OF YEAR, AS RESTATED (NOTE 5a)	<u>159,310</u>	154,228
FUND BALANCE, END OF YEAR	<u>116,989</u>	

### FOOTHILLS MODEL FOREST CONTRIBUTION FUND BALANCE SHEET (As At March 31, 1996)

A	S	S	Ε	Т	S	

	1996	1995
	\$	\$
CURRENT		
Cash	254,541	268,830
Accounts receivable	78,024	26,011
G.S.T. receivable	5,175	
	337,740	<u>308,902</u>

### LIABILITIES

### CURRENT

Wages payable	4,282	8,090
Accounts payable	10,938	24,705
Due to Canadian Forest Service Fund	22,920	8,089
Due to Chihuahua Model Forest Fund	2,414	-
Other		1,692
	40,554	34,486
FUND BALANCE	<u>297,186</u>	274,416
	<u>337,740</u>	308,902

### FOOTHILLS MODEL FOREST

CONTRIBUTION FUND

### STATEMENT OF RECEIPTS, EXPENDITURES, AND FUND BALANCE

(For The Year Ended March 31, 1996)

	APRIL 1/95 FUND	TRANSFERS TO	TRANSFERS FROM	CURRENT YEAR	CURRENT YEAR	MARCH 31/96 FUND
	BALANCE	OTHER FUNDS	OTHER FUNDS	RECEIPTS	EXPENDITURES	BALANCE
	\$	\$	\$	\$	\$	\$
Information, Research and						
Knowledge	6 0 1 0					
Fire Benavior Projects	6,818	-	-	-	6,818	-
Stream Crossing Inventory	· •	-	-	10,134	10,134	-
Rosal Girdling by Small	· <b>-</b> ·	-	-	000	209	4/9
Mammals	-	_	_	3 280	3 200	80
Feologically Classify Forest	2 8 2 4		-	3,209	1 525	1 299
GIS Technology Transfer	8 300	_	-	7 937	7 4 2 9	· 8 808
Habitat Supply Model	500	-	-	7,237	500	0,000
Terrestrial Wildlife	56.840	(56.840)	-	· -	-	-
Northern Goshawk		-	13.000	-	13.000	
Fishery & Aquatic Habitat	·	-		32,000	18,919	13,081
Mule/White Tailed Deer	-	-	9,250	9,250	18,500	-
Neo-tropical Migrant Birds	-	-	8,000	-	8,000	-
Watershed Assessment Model -						
Development	-	-	-	23,000	2,760	20,240
Watershed Assessment Model -						
Regional Hydrology Study	25,738	(9,150)	. •	5,000	9,438	12,150
Watershed Co-ordination	-	-	9,150	-	2,389	6,761
Summer Woodpecker	-	-	9,450	14,550	24,000	-
Pleated woodpecker Study	8,065	<b></b>		13,434	_21,499	
	<u>109,085</u>	<u>(65,990</u> )	48,850	<u>119,282</u>	<u>148,320</u>	<u>62,907</u>
Integrated Resource Management						
Mammal Inventory	-	-	14.340	10,408	20.322	4,426
Environmentally Sensitive Areas			,		20,022	1,100
Study	8,749	-	-	20,000	1.607	27,142
Elk Study	921	-	2,800	· -	401	3,320
Soil Compaction, Decompaction			-			
and Tree G <b>ro</b> wth	10,231	-	-	24,200	23,420	11,011
Ecologically <b>Ba</b> sed Preharvest						
Planning	6,687	-	-	-	6,687	· _
Forest Carbon Budget Study	20,000	· -	-	-	-	20,000
Woodland Caribou	-	-	-	1,090	-	1,090
Administration	-	-	-	4,800	-	4,800
Socio-economic Study	-	-	-	31,288	34,813	(3,525)
Ecological Land Classification				18,000	<u> </u>	_18,000
•	46,588		17,140	109,786	87,250	86,264

### FOOTHILLS MODEL FOREST CONTRIBUTION FUND

## STATEMENT OF RECEIPTS, EXPENDITURES, AND FUND BALANCE (continued)

(For The Year Ended March 31, 1996)

	APRIL 1/95 FUND BALANCE <b>\$</b>	TRANSFERS TO OTHER FUNDS	TRANSFERS FROM OTHER FUNDS S	CURRENT YEAR RECEIPTS I	CURRENT YEAR EXPENDITURES	MARCH 31/96 FUND BALANCE \$
Project Management and Administration	Ψ	Ψ	Ψ	Ψ	Ψ	Ψ
General (Note 2c)	118.301	-	-	36.347	716	153.932
Interactive Systems	442	(442)				
	<u>118,743</u>	<u>(442</u> )		_36,347	716	<u>153,932</u>
Forest Resource Improvement Project						
Administrative	-	-	-	16,767	21,835	(5,068)
Bird Inventory	-	-	-	26,000	25,732	268
Pileated Woodpecker	-	-	-	12,765	12,569	196
Fish and Stream Inventory		-	-	100,000	117,307	(17,307)
Habitat Inventory	: <b>-</b>	-	-	66,250	58,427	7,823
Historical cutblock analysis	-	-	-	55,000	52,594	2,406
Lichen study			_ <u>-</u> -	22,200	_17,435	4,765
• • •				<u>298.982</u>	<u>305,899</u>	(6,917)
Communication						
Co-ordination	-	-	442	2.450	2.892	
Tour Development	-	-		2,000	1,000	1,000
Displays				1,000		!
			442	5,450	4,892	1,000
	<u>274,416</u>	<u>(66,432</u> )	66,432	<u>569,847</u>	<u>547,077</u>	297,186

### FOOTHILLS MODEL FOREST CHIHUAHUA MODEL FOREST FUND BALANCE SHEET (As At March 31, 1996)

A S S E I S	A	S	S	Ε	Τ	S
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	1996 \$	1995 \$
CURRENT		
Bank (indebtedness)	102	(4,363)
G.S.T. receivable	-	105
Due from Foreign Affairs	<b>-</b>	66,651
Due from Contribution Fund	2,414	
	2,516	62,393

### LIABILITIES

### CURRENT

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Accounts payable	1,000	63,000
FUND BALANCE (DEFICIT)	_1,516	<u>(607</u> )

2,516

62,393

### FOOTHILLS MODEL FOREST

CHIHUAHUA MODEL FOREST FUND

## STATEMENT OF RECEIPTS, EXPENDITURES, AND FUND BALANCE

(For The Year Ended March 31, 1996)

	1996 \$	1995 \$
RECEIPTS		
Government of Canada Interest G.S.T. recovery	504,600 1,300 <u>3,294</u>	500,000 767 3,509
EXPENDITURES	<u>509,194</u>	<u>504,276</u>
<u>Canadian Agent Co-ordination:</u> Administration services Audit fee Banking costs Consultant travel Consultant fees Interest costs Office operation Translation services Travel to Chihuahua Travel in Canada Workshop	$\begin{array}{r} 48,364\\ 1,000\\ 400\\ 4,789\\ \hline \\ 1,088\\ 1,437\\ 4,467\\ 14,115\\ 6,712\\ \underline{3,340}\\ 85,712\end{array}$	34,189 1,000 344 11,121 11,365 788 7,431 337 8,835 3,835 
Bosque Modelo Chihuahua: Mexicans' travel within Canada Transfers to Bosque Modelo Chihuahua Project costs - silviculture course	409,500 <u>11,859</u> <u>421,359</u> <u>507,071</u>	5,115 421,000 <u></u> <u>426,115</u> 505,360
EXCESS (DEFICIENCY) OF RECEIPTS OVER EXPENDITURES	2,123	(1,084)
FUND BALANCE (DEFICIT), BEGINNING OF YEAR, AS RESTATED (NOTE 5b)	(607)	477
FUND BALANCE (DEFICIT), END OF YEAR	1,516	<u>(607</u> )

C.L. (Les) Brown Professional Corporation

### FOOTHILLS MODEL FOREST NOTES TO FINANCIAL STATEMENTS

(For The Year Ended March 31, 1996)

### 1. INCORPORATION AND OBJECTIVES

Foothills Model Forest was incorporated in Alberta on November 2, 1992 as a non-profit company under Part 9 of the Companies Act of Alberta. The company is owned equally by Weldwood of Canada Limited (Hinton Division) and the Government of Alberta.

- a) The objects for which the company was established are:
  - to accelerate and expand new and existing initiatives in sustainable forest operations innovation, integrated resource management, decision support systems research, technology transfer and public involvement in the Foothills Model Forest;
  - ii) to support the development of multi-jurisdictional resource management strategies and programs, particularly regarding transboundary resources;
  - iii) to test and demonstrate on the Foothills Model Forest advanced technology and integrated resource management practices consistent with the principles of sustainable development;
  - iv) to use the expertise and facilities of the Environmental Training Centre to assist in the knowledge base development and transfer the knowledge gained in the Foothills Model Forest program to local, national and international resource managers and various publics;
  - v) to develop an integrated resource management strategy for the Foothills Model Forest, representing a balance of integrated resource management objectives, using consensus development techniques, with the participation of representative stakeholders; and
  - vi) to support the Foothills Model Forest in the delivery of the 5year Model Forest Plan and the Annual Work Plan.

### FOOTHILLS MODEL FOREST NOTES TO FINANCIAL STATEMENTS

(For The Year Ended March 31, 1996)

### 1. INCORPORATION AND OBJECTIVES (CONTÍNUED)

- b) Foothills Model Forest is comprised of three funds:
  - i) The Canadian Forest Service Fund

The Canadian Forest Service Fund is funded by the Government of Canada through the Department of Natural Resources. The funding is expended on the projects approved within the annual work plan.

ii) The Contribution Fund

The Contribution Fund receives cash contributions from government, industry and various partners which fund specific projects.

iii) The Chihuahua Model Forest Fund

The Chihuahua Model Forest Fund is funded by the Government of Canada through annual Contribution Agreements with the Department of Foreign Affairs and International Trade. The objective for creation of the fund was to administer Canadian government funding of the Chihuahua Model Forest Work Plan.

### 2. ACCOUNTING POLICIES

- a) Receipts and disbursements are recorded on the accrual basis.
- b) Non-cash contributions have not been recorded in these accounts.
- c) Goods and Services Tax:

Goods and services input tax credits recovered through expenditures of the Canadian Forest Service Fund are recorded as contributions to the Contribution Fund. In the current year, these input tax credits totalled \$11,572 which is included as project management and administration receipts.

### FOOTHILLS MODEL FOREST NOTES TO FINANCIAL STATEMENTS

#### (For The Year Ended March 31, 1996)

### 3. PRIOR YEAR COMPARABLE FIGURES

Prior year figures have been presented except for the receipts and expenditures of the Contribution Fund. Such receipts and expenditures have little significance as the fund represents specific funding for specific projects which are not necessarily comparable.

#### 4. ECONOMIC DEPENDENCE

The agreements for funding with the Canadian Forest Service and Chihuahua Model Forest fund are up for renewal on March 31, 1997. Failure to obtain renewal of the funding agreements may terminate these projects.

#### 5. PRIOR PERIOD ADJUSTMENTS

#### a) Canadian Forest Service Fund

As a result of the termination of the Collaborative Research Agreement for "Pre-harvest Treatment of Aspen for Reducing Brushing Expenditures", the expenditures to date were reimbursed by the Canadian Forest Services. The fund balance at March 31, 1996 has been adjusted by \$4,316 representing the cumulative amount by which expenditures as at that date were decreased. Of the \$4,316, \$2,316 is applicable to 1995 and has been charged to Information, Research and Knowledge for that year. The remaining \$2,000 is applicable to the year prior to March 31, 1995 and the balance in fund at that date has been adjusted accordingly.

#### b) Chihuahua Model Forest Fund

The Chihuahua Model Forest fund was retroactively allocated \$1,000 of the annual audit cost. The comparative figures in the Statement of Receipts, Expenditures and Fund Balance and the Balance Sheet have been restated accordingly.

A claim for refund of Goods and Services Tax was recorded twice in error in the preceding year in the amount of \$1,210. The comparative figures in the Statement of Receipts, Expenditures and Fund Balance and the Balance Sheet have been restated accordingly.

![](_page_30_Picture_0.jpeg)

![](_page_31_Picture_0.jpeg)

### FOOTHILLS MODEL FOREST

For more information, please write or call: Foothills Model Forest Box 6330 Hinton, Alberta Canada T7V 1X6

> Telephone: (403) 865-8330 Fax: (403) 865-8266 email: adminfmf@agt.net

Proj Accou	ject unt #	Project Title	# of HOURS CONT.	TOTAL \$ VALUE of HOURS	TOTAL OTHER CONTRIB.	TOTAL CASH CONTRIB.	TOTAL CONTRIB. BY PROJECT
110	100	) Project Management & Implementation					
			0.0	\$0.00	\$0.00	\$0.00	\$0.00
110	110	GIS System Administration (Operational) William Wolniewicz			\$1,000.00		\$1,000.00
		Carolyn Braun	50.0	\$2,000.00	·		\$2,000.00
		Sub- total	50.0	\$2,000.00	\$1,000.00	\$0.00	\$3,000.00
110	-115	GIS System Administration (Tech Trans.)					
		Bob Christian	80.0	\$3,200.00			\$3,200.00
		Sub- total	80.0	\$3,200.00	\$0.00	\$0.00	\$3,200.00
110	120	) Blocking/Landscape Forecasting Model					
		Sub- total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
110	125	Ecologically Classify Foothills Forest (NAIA)			¢		
		Bob Christian	40.0	\$1,600.00			\$1,600.00
		Sean Curry	40.0	\$1,600.00			\$1,600.00
		Sub- total	80.0	\$3,200.00	\$0.00	\$0.00	\$3,200.00
110	130	) Extend and Upgrade Digital Inventory					
		Sub- total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
110	135	Evaluation of ArcForest Data Model					
		Carol Doering - The Forestry Corp	10.5	\$420.00			\$420.00
		Brian Maier - The Forestry Corp	25.0	\$1,000.00			\$1,000.00
		Sub- total	35.5	\$1,420.00	\$0.00	\$0.00	\$1,420.00
110	140	) DSS for Wildfire Threat Analysis					
		Sub- total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
110	145	Regional Land Classification					
	~	Mike Wesbrook	7.5	\$300.00			\$300.00
		George Mercer	900.0	\$36,000.00			\$36,000.00
		Sub- total	907.5	\$36,300.00	\$0.00	\$0.00	\$36,300.00
		SUB - TOTAL 110-100	1153.0	\$46,120.00	\$1,000.00	\$0.00	\$47,120.00

Proje Accour	ct Project Title at #	# of HOURS CONT.	TOTAL \$ VALUE of HOURS	TOTAL OTHER CONTRIB.	TOTAL CASH CONTRIB.	TOTAL CONTRIB. BY PROJECT
110	200 Project Management & Implementation					
110	Kirby Smith - Province of Alberta mileage & mandays	37 5	\$1.500.00	\$120.00		\$1,620,00
	Sub- total	37.5	\$1,500.00	\$120.00	\$0.00	\$1,620.00
110	212 Title A of Toward Des sting on Tickey sources					
110	Dela Vitt University of Alberta	25.0	\$1,000,000			\$1,000,00
	Sub - total	25.0	\$1,000.00	\$0.00	\$0.00	\$1,000.00
	Stib - Will		\$1,000,00			<u> </u>
110	214 Genetic Diversity of Lodgepole Pine			•		
	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
110	215 Habitat Sunniv Module					
	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
110	220 Terrestrial Wildlife Habitat Research			•		
	Fish & Wildlife (Deer Project)	0	<u>00 00</u>	0.02	\$0.00	00.02
-	Sub - Wai	0.0		\$0.00	\$0.00	
110	227 Deer Project					
	Kirby Smith - Province of Alberta		\$1,200.00	<b>#0.00</b>	<u> </u>	\$1,200.00
	Sub - total		\$1,200.00	\$0.00	\$0.00	\$1,200.00
110	228 Neo - tropical Migrant Birds					
	Dr's Clark and K.A. Hobson	22.5	\$900.00	\$11,010.00	-	\$11,910.00
	Sub - total	22.5	\$900.00	\$11,010.00	\$0.00	\$11,910.00
110	229 Long Toed Salamander					
	Dr. James Bogart - caring of salamanders			\$3,795.00		\$3,795.00
	Sub - total	0.0	\$0.00	\$3,795.00	\$0.00	\$3,795.00
110	221 Summer Weednester					
110	E S. Tolfar, Canadian Wildlife Service	47.0	\$1.880.00	\$1.650.00		\$3 530 00
	Chris Spytz - Weldwood of Canada	5.0	\$200.00	\$1,650.00		\$1,850.00
	Sub - total	52.0	\$2,080.00	\$3,300.00	\$0.00	\$5,380.00
						**************************************
110	232 Red Squirrel		<b>41 6 6 6 6</b>			<b>A1 A0 0 0</b>
	Karl Larsen - Alberta Pacific Forest Industries	30.0	\$1,200.00	¢000.00		\$1,200.00
	Loan of 30 squirtel live traps - Alberta Pacific	70.0	\$1 200 00	\$900.00	\$0.00	\$900.00
	Sub - total		\$1,200.00	\$900.00		\$2,100.00
110	235 Pileated Woodpecker Study					
	Carol Doering - The Forestry Corp	0.5	\$20.00			\$20.00
	Rick Bonar - Weldwood	100.0	\$4,000.00		#0.00	\$4,000.00
	Sub - total	100.5	\$4,020.00	\$0.00	\$0.00	\$4,020.00
110	240 Watershed Administration					
	Teresa de Grosbois - Nova Corporation	34.0	\$1,360.00			\$1,360.00
	Carl Hunt - Fish & Wildlife	142.5	\$5,700.00	\$1,125.00		\$6,825.00
	Chri Spytz - Weldwood of Canada	5.0	\$200.00	<b>#</b>		\$200.00
	Glen Bergstrom - Province of Alberta	8.0	\$320.00	\$75.00		\$395.00
	Sub - total	196.5	\$280.00	\$1,200.00	\$0.00	\$280.00
110	241 Watershed Assessment Model Development	144.6	<b>66 8</b> 60.00			<i><b>#</b>6 760 00</i>
	John Taggart - Alberta Environmental Protection	144.0	\$5,760.00			\$3,700.00
	Carol Doening - Ine Forestry Corp	144 6	\$20.00	ድብ በብ	\$0.00	\$5 780 00
	Sub - total	144.3	φ3 <sub>5</sub> 700.00		30.00	φ3,700.00
						015 075 00
	SUB - TOTAL 110 - 200	638.5	\$25,540.00	\$20,325.00	\$0.00	\$45,805.00

Proje Accour	ct Project Title nt #	# of HOURS CONT.	TOTAL \$ VALUE of HOURS	TOTAL OTHER CONTRIB.	TOTAL CASH CONTRIB.	TOTAL CONTRIB. BY PROJECT
110	316 Validation of Basal Diameter Ratio CI for Pine-Aspen					
	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
110	317 Silvicultural Impacts of Chinner Residue Disposal					
110	Doug Maynard - Canadian Forest Service	75.0	\$3,000.00			\$3,000,00
	Sub - total	75.0	\$3,000.00	\$0.00	\$0.00	\$3,000.00
110	318 Aspen Regrowth & Competition after Release Conifer					
	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
110	320 Basal Girdling by Small Mammals	72.0	\$2 880 00	\$900.00	•••	\$3 780 00
	Sub - total	72.0	\$2,880.00	\$900.00	\$0.00	\$3,780.00
110	325 Shelterwood Practices Project.			·		
	Rob Stauffer - GPS Instruction (Weldwood)	8.0	\$320.00			\$320.00
	Paul Hosin (Weldwwod) -instruction pathfinder software	5.0	\$200.00			\$200.00
	Vic Leiffers - University of Alberta	45.0	\$1,800.00	\$600.00		\$2,400.00
	Simon Landhausser - University of Alberta	60.0	\$2,400.00			\$2,400.00
	Annette Constadl - University of Alberta	20.0	\$800.00			\$800.00
	Sub - total	138.0	\$5,520.00	\$600.00	\$0.00	\$6,120.00
110	330 Preharvest Treatments of Aspen					
	Sub- total	0.0	\$0.00	\$0.00	0	\$0.00
	SUB - TOTAL 110-300	285.0	\$11,400.00	\$1,500.00	\$0.00	\$12,900.00
110	705 Stratification of Foothills Forest PSP's					
	Sub - total	0.0	\$0.00	\$0.00	0	\$0.00
	TOTAL: I/R/K	2076.5	\$83,060.00	\$22,825.00	\$0.00	\$105,885.00

Proje Accou	ect nt#	Project Title	# of HOURS CONT.	TOTAL \$ VALUE of HOURS	TOTAL OTHER CONTRIB.	TOTAL CASH CONTRIB.	TOTAL CONTRIB. BY PROJECT
I	NTE	GRATED RESOURCE MANAGEMENT:				·	
220	250	Habitat Yield Curves					
		Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
							1
220	255	Elk and Timber Management Study	27.6	¢1 600 00	¢120.00		¢1 600.00
		Kirby Smith Province of Alberta	37.5	\$1,500.00	\$120.00	\$0.00	\$1,020.00
		Sub - total	37.5	31,300.00	\$140.00	30.00	\$1,020.00
220	260	Mammal Inventories Project					
		Carol Doering - Forestry Corp	7.0	\$280.00	\$52,50		\$332.50
		Chris Spytz - Weldwood	12.0	\$480.00		-	\$480.00
		Sub - total	19.0	\$760.00	\$52.50	\$0.00	\$812.50
220	<b>26</b> 5	Woodland Caribou Study					
220	205	Carol Doering - The Forestry Corp	6.5	\$260.00	\$30.00		\$290.00
		Kirby Smith - Province of Alberta (Fish & Wildlife)	0.5	\$200.00	\$36,600.00		\$36,600,00
		Nova Corporation - helicopter time			\$9,150.00		\$9,150.00
		Nova Corporation - man time	420.0	\$16,800.00	\$360.00		\$17,160.00
		Nova Corporation - accommodation			\$300.00		\$300.00
		Sub - total	426.5	\$17,060.00	\$46,440.00	\$0.00	\$63,500.00
220	270	Furbearer Trapping Success		00.02	\$0.00	50.00	\$0.00
		Sub - Wai		40.00	40.00		40.00
220	280	Ecosystem Monitoring					
		Mike Wesbrook	3.0	\$120.00	187. JEL	1	\$120.00
		Sub - total	3.0	\$120.00	\$0.00	\$0.00	\$120.00
	<u>.</u>	SUP TOTAL 220 - 200	496.0	\$10 440 00	\$46 612 50	00.02	\$66.052.50
		SOB-TOTAL 220-200	400.0	\$13,440.00	\$40,012.50	40.00	\$00,032.50
					4		
220	300	Project Management & Implementation					<b></b>
		Sub - total	0.0	\$0	\$0	\$0	\$0
220	355	Boreal Mixedwood Ecosystems					
220	555	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
							(internet)
220	360	Soil Compaction, Decompaction, & Tree Growth					
		Iain Wilson - Weldwood	10.0	\$400.00			\$400.00
		Sub - total	10.0	\$400.00	\$0.00	\$0.00	\$400.00
220	365	Foologically Based Probaryest Planning					
220	202	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
		NEW TOTAL			<i><b>40130</b></i>		
		SUB - TOTAL 220 - 300	10.0	\$400.00	\$0.00	\$0.00	\$400.00

Projec Accoun	t Project Title t #	# of HOURS CONT.	TOTAL \$ VALUE of HOURS	TOTAL OTHER CONTRIB.	TOTAL CASH CONTRIB.	TOTAL CONTRIB. BY PROJECT
220	715 Protected area PSP's					
	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
220	720 Effect of Horse Grazing Study John Groat - supply of horses DR Bailey - University of Alberta	160.0	\$6 400 00	\$2,400.00		\$2,400.00 \$6,400.00
	Snowmobile use - University of Alberta	100.0	40,100.00	\$300.00		\$300.00
	Unpaid Graduate Student Time			\$7,000.00		\$7,000.00
	Sherry Mame - Weldwood of Canada Sub - total	160.0	\$6,400,00	\$3,000.00	\$0.00	\$3,000.00
	E SAN - SO BAA	100.0	40,400.00	\$12,700.00	\$0.00	
220	725 Socio-economic Study					
	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
220	730 Industrial Forest Impacts Model					
	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
220	735 Forest Carbon Budget Study					
	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
220	740 Yellowhead Regional Working Group					
	Rick Kubian	15.0	\$600.00			\$600.00
	Sub - total	15.0	\$600.00	\$0.00	\$0.00	\$600.00
220	745 Protected Areas Study					
	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
	SUB - TOTAL 220 - 700	175.0	\$7,000.00	\$12,700.00	\$0.00	\$19,700.00
SUB - TO	DTAL: INTEGRATED RESOURCE MANAGEMENT	671.0	\$26.840.00	\$59.312.50	\$0.00	\$86,152,50

Proje Accoun	ct Pi it#	roject Title	# of HOURS CONT.	TOTAL \$ VALUE of HOURS	TOTAL OTHER CONTRIB.	TOTAL CASH CONTRIB.	TOTAL CONTRIB. BY PROJECT
С	OMMUNICATIONS/TECH	NOLOGY/PEOPLE:					
330	400 Project Managment Im Mike Voisin - Weldwood	plementation l	50.0	\$2,000.00	\$3,000.00		\$5,000.00
330	415 Peer Review and Onen	Houses	50.0	\$2,000.00	\$5,000.00	\$0.00	\$3,000.00
	S	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
330	420 Newsletters	sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
330	425 Major Signs and Broch	ures		¢0.00	£0.00	¢0.00	eo 00
330	430 Tour Development	ud - total	0.0	20.00	50.00	\$0.00	50.00
000	Peter Murphy Consulting Maggie Ellen - Provision	of truck	191.3	\$7,650.00	\$360.00		\$7,650.00 \$360.00
	s	ub - total	191.3	\$7,650.00	\$360.00	\$0.00	\$8,010.00
330	440 Speakers Bureau Maggie Ellen - Presentati	on CFS Annual Meeting			\$500.00		\$500.00
330	S	ub - total	0.0	\$0.00	\$500.00	\$0.00	\$500.00
330	445 Management 1 Falling	rograms ub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
330	450 NAIT Student Training	Exercise ub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
330	455 Junior Forest Wardens						
330	S	ub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
330	460 Video Production	ub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
<b>33</b> 0	735 Annual Report S	ub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
	SUB - TOTA	L: Communications	241.3	\$9,650.00	\$3,860.00	\$0.00	\$13,510.00

Proj Accou	ect int #	Project Title	# of HOURS CONT.	TOTAL \$ VALUE of HOURS	TOTAL OTHER CONTRIB.	TOTAL CASH CONTRIB.	TOTAL CONTRIB. BY PROJECT
570	700	Project Coordination					
		Lands and Forest Service - Rick Blackwood 1 man year			\$48,696.00		\$48,696,00
		Sub - total		\$0.00	\$48,696.00	\$0.00	\$48,696.00
570	760	Evaluation Framework					
570	/00	Colin Edev - Nova Gas Transmission	8.0	\$320.00	\$300.00		\$670.00
		Nova Gas Transmission - helicopter time	0.0	4520.00	\$5,200.00		\$5 200.00
		Sub - total	8.0	\$320.00	\$5,500.00	\$0.00	\$5,820.00
•							
		SUB - TOTAL FOR PROJECTS	8.0	\$320.00	\$54,196.00	\$0.00	\$54,516.00
490	900	Finance & Administration					
		ETC - office space, fumiture			\$30,000.00		\$30,000,00
		Ken Clark	4.0	\$160.00			\$160.00
		Sub - total	4.0	\$160.00	\$30,000.00	\$0.00	\$30,160.00
(01	015						
491	915	Board of Directors	50.0	<b>#7 0</b> 00 <b>0</b> 0			
		Marcha Spearin Weldwood	50.0	\$2,000.00			\$2,000.00
		Dennis Haudemusch Waldwood	58.0	\$2,320.00			\$2,320.00
		Beb Lidell Weldwood	85.0	\$3,400.00 \$11,680.00			\$3,400.00
		Boss Risurald - FTC	292.0	\$11,080.00			\$11,680.00
		Sub - total	735.0	\$10,000.00	\$0.00	00.02	\$10,000.00
			70010	427,100.00		40.00	\$25,400.00
491	916	Model Forest Network					
	• .	Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
491	917	Project Steering Committee					
		George Mercer	10.0	\$400.00			\$400.00
		Sean Curry	16.0	\$640.00			\$640.00
		Mike Wesbrook	7.5	\$300.00			\$300.00
		Kirby Smith	42.0	\$1.680.00			\$1,680.00
		Rick Bonar	112.5	\$4,500,00			\$4,500.00
		Sub - total	188.0	\$7,520.00	\$0.00	\$0.00	\$7,520.00
401	018	Partners Advisory Committee					
471	910	Inthe S Advisory Commutee	24.0	\$960.00	\$168.00		¢1 179 00
		Brian Majer - Forestry Corp	29.0	\$1 160 00	\$250.00		\$1,120.00
		Norm Rodseth - Trout Unlimited	30.0	\$1,100.00	\$250.00		\$1,410.00
		Sub - total	92.0	\$3.680.00	\$418.00	\$0.00	\$4,098,00
				40,000,00	<b><i>Q</i>110,00</b>	φ0.00	<b>₩</b> 1,020.00
2	SUB -	TOTAL ADMINISTRATION & COMMITTEES	1019.0	\$40,760.00	\$30,418.00	\$0.00	\$71,178.00

TOTAL IN-KIND CONTRIBUTIONS

4015.8 \$160,630.00 \$170,611.50

\$0.00 \$331,241.50

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Proj Accou	ect int #	an Anna ann an Anna Anna Anna Anna Anna	Project Title	# of HOURS CONT.	TOTAL \$ VALUE of HOURS	TOTAL OTHER CONTRIB.	TOTAL CASH CONTRIB.	TOTAL CONTRIB. BY PROJECT
		OTHER PROJECT	S					
600	960	Fish & Stream Inver	ntory FRTP					
		Gordon Stenhouse		112.5	\$4,500.00			\$4,500.00
		Dave Wallace		3.0	\$120.00		-	\$120.00
			Sub - total	115.5	\$4,620.00	\$0.00	\$0.00	\$4,620.00
600	950	Bird Inventory FRI	P					·
		Dave Wallace	•	0.5	\$20.00			\$20.00
		Chris Spytz		35.0	\$1,400.00			\$1,400.00
			Sub - total	35.5	\$1,420.00	\$0.00	\$0.00	\$1,420.00
600	<b>970</b>	Habitat Inventory F	RIP		A1 100 00			#1 120 00
		Brad Stelfox	<b>G A A A</b>	28.0	\$1,120.00	¢0.00	£0.00	\$1,120.00
			Sub - total	28.0	\$1,120.00	20.00	\$0.00	\$1,120.00
110	237	Landscane Disturba	nce					
110	237	George Mercer		810.0	\$32,400.00	\$5,000,00		\$37,400.00
		Rick Kubian		15.0	\$600.00	• •		• • •
		Mike Wesbrook		7.5	\$300.00			\$300.00
			Sub - total	832.5	\$33,300.00	\$5,000.00	\$0.00	\$37,700.00
220	205	Caminara Concorna	tion					
220.	205	Mike Weshrook	uom	7.5	\$300.00			\$300.00
		George Mercer		75.0	\$3,000.00			\$3,000.00
			Sub - total	82.5	\$3,300.00	\$0.00	\$0.00	\$3,300.00
		Casha Davaatta Kiza	Darima O			,		
		Cache Percoue Fire	Sub - total	00	\$0.00	\$0.00	\$0.00	\$0.00
			Sub - total	0.0		40.00	\$0.00	
		Ecological Reserves						• • •
			Sub - total	0.0	\$0.00	\$0.00	\$0.00	\$0.00
		TOTAL FOR OTHE	ER PROJECTS	1094.0	\$43,760.00	\$5,000.00	\$0.00	\$48,160.00
		TOTAL FOR ALL I	PROJECTS	5109.8	\$204,390.00	\$175,611.50	\$0.00	\$379,401.50