

# Technical Support Group

## Annual Report

**1996 - 1997  
Fiscal Year**

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*Preface*

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I am pleased to provide you with the Technical Support Group's Annual Report for the fiscal year ending March 31, 1997. This will be the last year of reporting under the section name Technical Support Group.

Respectfully submitted,



John Stevenson  
Manager, Technical Support Group

August 1997.

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## *Technical Support Group*

### Introduction

The Technical Support Group (TSG) consists of individual sections whose primary goal is to provide operational and technical support services to the Research Program.

One of these sections, Biometrics, is located at Branch headquarters in Victoria. Other sections of the group are the Cowichan Lake Research Station at Mesachie Lake; the Kalamalka Research Station at Vernon; the Red Rock Research Station near Prince George; and the Glyn Road Research Station, which includes the Analytical Chemistry Laboratory, located in Victoria. The relationship of these sections is shown in the following chart.

The Forest Renewal Plan (FRP) provided for additional support, by way of staff, at the analytical chemistry laboratory, at the Cowichan Lake Research Station and in the Biometrics Section at headquarters. In addition, some improvements were made to our research station operations by way of some minor capital/maintenance initiatives. These are detailed in each Station's section of this report.

At the end of the fiscal year the Technical Support Group was amalgamated with the Finance and Administration Section as a result of government-wide restructuring and the retirement of **Gail Archibald** as Manager, Finance and Administration. As a result, this will be the last year that this report will use the section name Technical Support Group. Next year's report will reflect the new section title Finance and Support Operations. Government-wide restructuring resulted in the early retirement and/or departure of several of our staff located at our research stations. These changes are mentioned in each activity report.

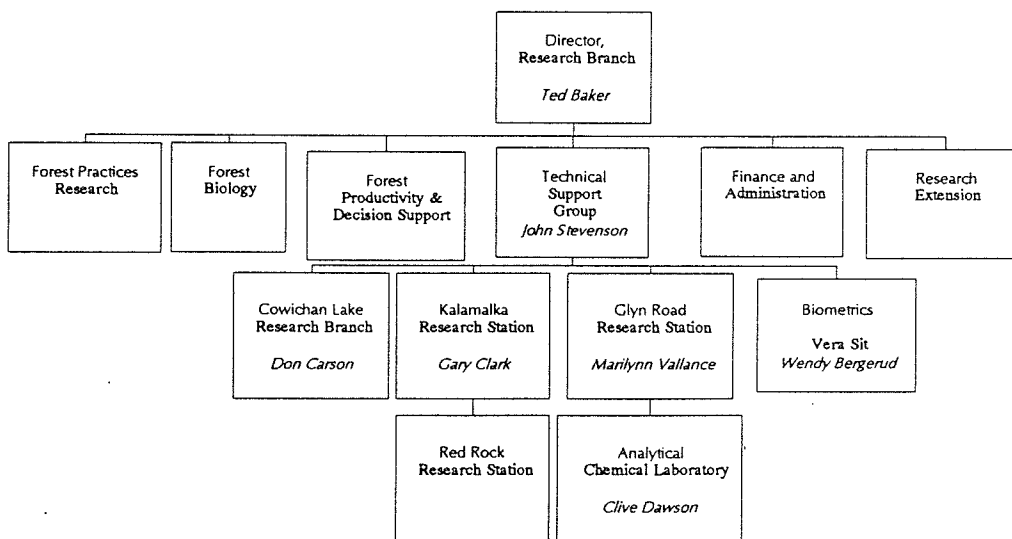


FIGURE 1. Organization of TSG within the Research Branch

## Staff and Budget

During the fiscal year, the group employed a regular staff comprised of 32.75 full-time equivalents (FTE's), and managed a budget and approved operating expenditures totalling \$354,015 (base) non-inclusive of salaries and benefits.

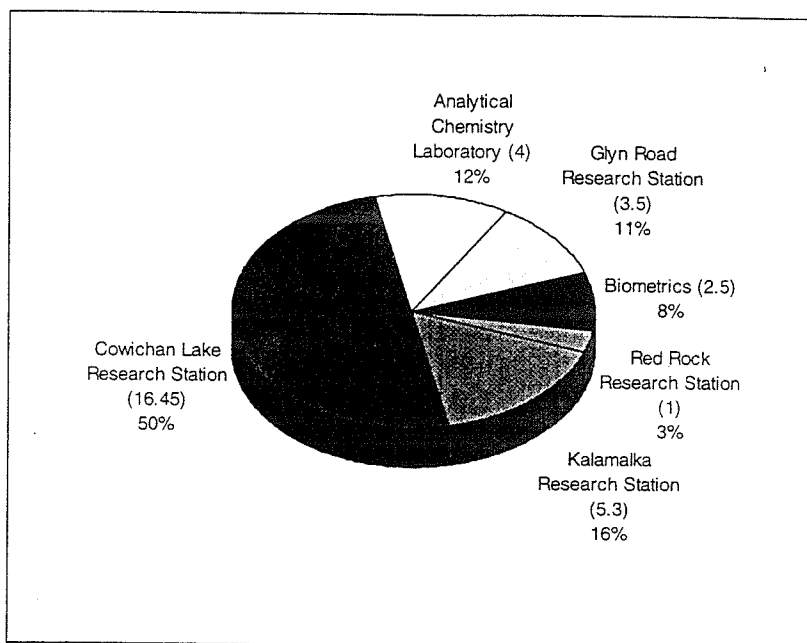


FIGURE 2. Technical Support Group staff (by section)

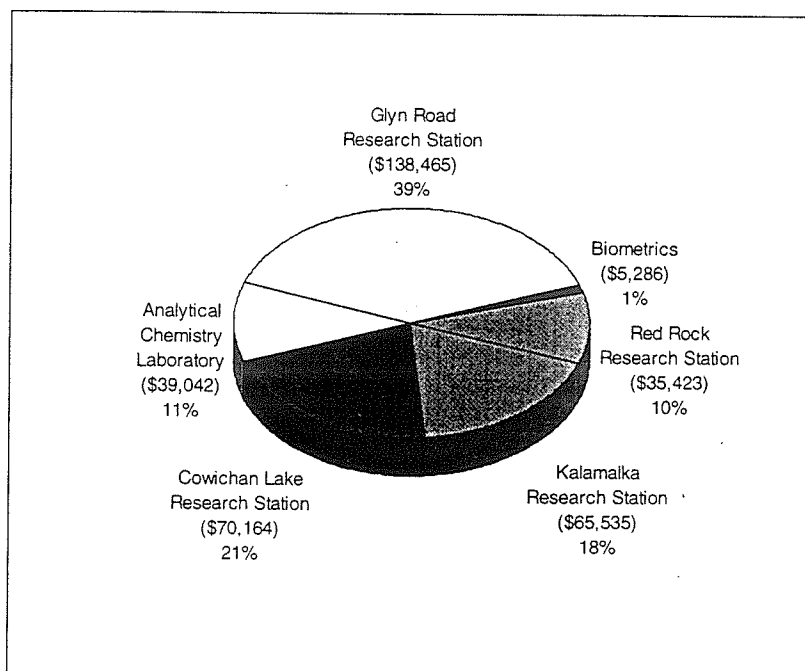


FIGURE 3. Technical Support Group base expenditure (by section)

## *Biometrics*

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*The Biometrics Section continued to provide the Research Program with consultative statistical support services through meetings, the writing of reports, and the technical review of reports and working plans. Frequent consulting sessions took place. One Biometrics Handbook, three pamphlets and an article in a statistical journal were published.*

### **Service to Clients**

The Biometrics Section has three permanent members, **Wendy Bergerud**, **Vera Sit** and **Peter Ott**. **Vera** went on maternity leave in the middle of November. **Susan Chen** joined the Section in January to replace **Vera**, and will be with us until the end of August. Funding restrictions precluded travel this year and on-site visits to the research stations and regional offices were cancelled. Consulting services were maintained via meetings, e-mail, phone and FAX. The section reviewed 37 working plans and reports.

Consulting projects included comments on the *Biodiversity Handbook*, the inventory audits issue for the Timber Supply and Inventory Branches, and an adaptive management study. **Peter** has joined the Spatial Analysis Project Working Group. He will be helping to determine the error propagation in the spatially explicit timber supply models. **Wendy Bergerud** has been working with **Dr. Bill Reed** to revise the Bayesian Statistics chapter in the book entitled *Statistical Methods for Adaptive Management Studies*. **Susan Chen** has summarized some information on Mixed ANOVA Models. The section has a WEB page and **Peter** is our representative on the WEB site working group (the Websters).

### **Training Courses and Meetings**

**Vera** and **Wendy** attended a two-day workshop on *Risk Assessment and Decision Analysis*. **Wendy** presented a one-day course on *Categorical Data Modelling* in Victoria in May. **Vera** and **Peter** attended a two-day workshop at Lake Cowichan Research Station on *Coarse Woody Debris* and **Vera** joined the working group. **Peter** attended the annual Statistical Society of Canada conference in June, 1996 at Waterloo, Ontario. **Vera** worked with **Pasi Puttonen** to organize seminars and a one-day workshop on *Research Methods*. **Vera** worked with **Brian Nyberg** to present a symposium on adaptive management with talks to be given by the authors of the chapters in *Statistical Methods for Adaptive Management Studies*. Regrettably, funding restrictions necessitated its cancellation. **Wendy**, **Peter** and **Vera** attended the opening meetings of PIMS (Pacific Institute of Mathematical Sciences) and listened to several interesting talks. **Wendy** took a one-day course on EXCEL. **Peter** participated in the Temperate Rainforest Ecology Course at Bamfield, helping students with their research projects. **Peter** presented the statistical material at SIBC on December 4, 1996 at Green Timbers Nursery. **Peter** participated in a workshop on Caribou Habitat Suitability Modelling in Revelstoke in March. **Wendy**, **Peter** and **Susan** attended the Pacific NW Statistics Meetings at UVic on April 18, 1997. **Wendy**, **Vera**, **Peter** and **Susan** all attended MSEExchange courses.

### Major Accomplishments

The seventh handbook, *Introduction to Logistic Regression Models* by Wendy Bergerud was published this year using FRDA funds. Wendy Bergerud had an article entitled *Displaying Factor Relationships in Experiments* in the August 1996 issue of *The American Statistician* and one entitled *An Educational Approach to Consulting* published in *Liaison*, a magazine of the Statistical Society of Canada (SSC). Vera Sit and Brenda Taylor have been editing a book entitled *Statistical Methods for Adaptive Management Studies* with chapters written by eminent local statisticians: Amanda F. L. Nemeec, Carl J. Schwarz, G. John Smith, Richard D. Routledge, Judith L. Anderson, William J. Reed, Randall M. Peterman and Calvin Peters. This book is now in the review phase and is expected to be published next year.

Wendy Bergerud produced two new pamphlets, while Peter Ott produced one. Several more pamphlets are currently in production.

Six new Biometrics Information Pamphlets were produced by Wendy Bergerud, and over 300 individuals are currently on the mailing list.

A series of four statistics seminars were presented. Invited speakers included Peter Ott, Alice Shelly, Tony Hamilton, Fred Hovey and Gay Bradshaw. The seminars were well received. Attendance included staff from the Ministry of Forests, Ministry of Environment, Forestry Canada, private consultants, students and faculty members of the Department of Mathematics and Statistics at the University of Victoria. All four seminars were video-taped for circulation.

Together with the Systems Section, a consultant was retained to evaluate three statistical packages: SAS, Systat and Excel. The results from the evaluation were used for making recommendations on a ministry standard statistical package.

## Cowichan Lake Research Station

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*The Cowichan Lake Research Station provided technical services to Ministry of Forests, Canadian Forest Service, and forest industry personnel. These services included the culture and maintenance of progeny test stock, production of root stock, seed extraction and cleaning, germination testing, the production and shipping of stecklings for operational and research plantations, and grafting for tree improvement. In addition, the camp provided accommodation, meals and tours to numerous government staff members, visitors from many parts of the world, and to the public.*

### **Service to Clients**

The Cowichan Lake Research Station provides labour and technical expertise, as well as facilities and services, to support research program objectives for the Research Branch, Silviculture Practices Branch, Canadian Forest Service, Forest Renewal BC, universities and forest companies.

Services to the various breeding programs included grafting weevil resistant spruce candidates; producing root stock for 1997 selections; extracting and cleaning seed; germination tests and seedling production. CLRS produced and shipped Yellow-cedar stecklings; maintained hedges for the production of Cy cutting material; and provided facilities and services for the Western White Pine program including grafting, transplanting and container and field stock culture. Staff are also involved in the collecting, processing and growing of native shrubs for the Duncan District's stream rehabilitation and slope stabilization projects.

### **Staff**

Roger Slaby retired at the end of October as the Tree Improvement Technician, with Luanne Palmer taking over his duties on seed and pollen handling and Ian Cairns looking after the preparation for sowing. Les Pilcher, who has helped in the cookhouse and nursery for 29 years took advantage of the early retirement package. They both will be missed by the staff.

### **Training Courses and Meetings**

Meetings and workshops attended by the staff included: Tina Ogg and Keith Bird completed their Level 3 First Aid course. The Station hosted the B.C. Seed Orchard Staff group meetings in June and the IUFRO barbecue and tour in August. Don Carson and Susanne Daviau attended the Western Forest Conservation Nursery Association meeting in Salem, Oregon and Ian Cairns, Luanne Palmer, Roger Slaby and Don Carson attended a one day seed workshop in July.

*Cowichan Lake Research Station cont.*

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**Acquisitions and Improvements**

Some of the improvements to the station this year included the completion of a new greenhouse for **John King's** and **Charlie Cartwright's** breeding program. **Al McDonald** worked out a system using a tank to provide water for the misting system in greenhouse 3. The water tank truck was traded for a hyab which was used in the disassembly of the snow damaged greenhouses.

**Major Accomplishments**

Surviving the snowstorm of December '96 with the loss of only two greenhouses was fortunate. More than 6,228 grafts were shipped with over 10,635 grafts completed this year. **Luanne Palmer** was asked to graft and propagate the "golden spruce" after it was cut down in January in the Queen Charlottes. The yellow-cedar cutting production program for both operational and research use, provided over 115K stecklings, 130K shipped, and material for 285K cuttings sent for operational production by other producers. Seedlings and cuttings were produced for a number of projects and breeding, pollen and seed extraction services were also provided. Over 84 ha of gene archives at the Mesachie site and the North Arm site were maintained and clonebank expansion included the addition of 143 new clones with the planting totalling 651 ramets in the clonebanks. An additional 1.7 ha of land was partially cleared for new clonebank selections. Over 4,300 scions were collected from 335 clones of nine species for research branch and seed orchard managers.

The camp provided over 2,787 nights of accommodation and approximately 9,704 meals were served to the Research Branch, Forest Service, government agencies and schools, staff and students. The staff conducted tours for over 1,100 visitors from Japan, Germany, China, Scotland, Sweden, France, and the USA, as well as students from SFU, Camosun, Malaspina, Kwantlen, Langara, and CNC colleges, Elder Hostel programs, and other interested groups and individuals.

## *Kalamalka Research Station*

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*The Kalamalka Research Station provided technical services/support, work facilities, and the use of specialized equipment for a number of Ministry staff who carry out a number of research-related activities on-site or at its satellite operations.*

### **Service to Clients**

Support services provided by the Station included: clerical service, telephone and counter reception, mail service, provision and replacement of stationery supplies; use of a meeting room and offices.

Propagation, plantation maintenance, plantation establishment, and site development for further expansion of resident programs continue to be a primary objective.

A number of off-site clients, with the assistance of TSG staff, used the specialized facilities and equipment to meet their specific objectives.

Kamloops regional research staff and the South Zone Nursery Administration staff frequently used growth chamber and super deep freeze equipment as well as the headerhouse for a variety of tests.

### **Training Courses and Meetings**

A native plant propagation workshop was staged at the facility for the Federal Department of Fisheries and Oceans for a number of their technical staff. The facility was also opened to the B.C. Christmas Tree Growers Association for a one-day workshop on Christmas wreath making.

Our conference room was booked by various groups for seminars, meetings, training sessions, tours, Forestry Week poster judging and award presentations, and a host of other purposes.

### **Acquisitions and Improvements**

An automatic irrigation system was designed and installed just east of the lathhouse. This was done to enhance our ability to provide more growing areas for new research trials.

A replacement vehicle for a large tandem axle transport, which is used to move equipment/machinery between research stations, orchard operation sites and satellite sites such as our Barnes Creek installation, was provided.























