

Pacific Northwest Tree Improvement Research Cooperative

Program Description
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Department of Forest Science
Oregon State University
Corvallis, Oregon 97331

PURPOSE AND SCOPE

The purpose of the Pacific Northwest Tree Improvement Research Cooperative (PNWTIRC) is to conduct genetics and breeding research on Pacific Northwest tree species with the goal of providing priority information that will enhance the efficiency of tree improvement efforts. Emphasis is on region-wide problems dealing with major coniferous species. The PNWTIRC is concerned with both tree breeding and mass production of genetically improved materials. The intent is to complement and supplement research by other organizations in the region and to avoid duplication. Another important objective of the Cooperative is to foster communication among tree improvement workers throughout the Pacific Northwest.

HISTORY

The PNWTIRC developed from concerns that research efforts were not adequately keeping pace with the rapid expansion of applied tree breeding programs. In March of 1982, an ad hoc committee was formed with representatives from four private companies and Oregon State University (OSU). Their mission was to evaluate the need for additional research and to explore methods of organizing tree improvement research in the region.

Based on an informal survey of regional tree improvement research and the results of a questionnaire by the Northwest Seed Orchard Managers Association, the committee concluded that additional tree improvement research was needed to augment ongoing programs. Furthermore, the committee concluded that the formation of a research cooperative was the best way to meet this need. It was recognized that further delay in acquiring needed information would only lead to inefficiencies in breeding programs and loss of revenue.

A proposal for a cooperative centered at OSU was developed by the ad hoc committee and circulated among forestry organizations in October of 1982. Extensive review of the proposal occurred over the next six months, culminating at a public forum in Corvallis on March 18, 1983.

Because the response to the proposal was enthusiastic, the PNWTIRC was officially established on July 1, 1983. Members have included representatives from public agencies and private companies in western Oregon, western Washington, and coastal British Columbia (see current Annual Report).

OPERATIONAL AREA

The operational area of the PNWTIRC includes western Oregon, western Washington, coastal British Columbia, and northern California.

ORGANIZATION

The PNWTIRC is based at Oregon State University and is led by a faculty member in the Department of Forest Science (see current Annual Report).

There are four membership categories: Regular, Associate, Contractual, and Liaison. Regular, Associate, and Contractual members are forest landowners and managers who support the Cooperative by contributing an annual membership fee and in-kind support (e.g., study sites, labor, equipment, and materials) (Table 1). Landowners and managers of any size may participate as Regular members. Organizations with fewer than 100,000 acres may participate as Associate members. Associate members pay half the annual fee of Regular members and are expected to provide less in-kind support. Contractual members contribute annual fees that are lower than they would contribute if they participated as either Regular or Associate members (i.e., depending on their acreage). These annual fees are negotiated on a case-by-case basis. Although Liaison members do not pay annual fees, they advise the Cooperative and provide a link to other tree improvement organizations in the region.

Members participate in the Cooperative through representation on the Policy/Technical Committee. This committee advises the Cooperative Director on decisions concerning the activities, direction, size, and support of the program. It also identifies research problems, establishes priorities, and assists in the planning, implementation, and evaluation of studies.

Every Regular and Associate member has voting representation on the Policy/Technical Committee. Contractual and Liaison members contribute to discussions on key matters but have no voting rights. Specific responsibilities of the Director and members of the Cooperative are listed in Table 2. Each Regular, Associate, and Contractual member signs a formal Memorandum of Agreement or Participating Agreement.

Each Regular, Associate, and Contractual member provides annual fees to the Cooperative through the OSU Forest Research Laboratory (Table 1). Regular members are expected to provide additional in-kind support consisting of study sites, labor, equipment, materials, etc. Associate and Contractual members are encouraged to provide in-kind support. The amount and type of in-kind support is specified in the individual research work plans.

The Policy/Technical Committee reviews the Cooperative's organization, fees, and achievements yearly.

RESEARCH PLANNING

The activities of the Cooperative are guided by a written plan that is produced every five years. Each Five-Year Plan includes: (1) a list of research projects to be worked on during the five-year period; (2) a plan of action including timetables for the initiation, progress, and completion of research projects; and (3) budgets and estimates of in-kind contributions for each project.

The Five-Year Plan is reviewed yearly by the Policy/Technical Committee to determine the need for mid-course modifications such as addition or deletion of projects. An amount equal to 10% of the total annual fees is designated each year as a contingency fund to help cover fiscal emergencies (e.g., loss of a member) and to allow the initiation of short-term projects that are not included in the Five-Year Plan.

During the fourth year of the five-year period, a new Five-Year Plan is developed using the following procedure:

1. The Policy/Technical Committee names a Five-Year Plan Committee composed of members from the Policy/Technical Committee.
2. The Five-Year Plan Committee reviews the Cooperative's accomplishments over the past five years and makes recommendations to the Policy/Technical Committee on any operational or structural changes that might be needed. This Committee also helps the Cooperative Director develop the Five-Year Plan.
3. The Policy/Technical Committee develops a list of specific research projects and evaluates their importance (priority) for the next five years.
4. Using this list of specific projects and priorities, the Director and the Five-Year Plan Committee develops alternative plans of action and budgets for consideration by the full Policy/Technical Committee.
5. The Policy/Technical Committee meets to make final decisions on the Five-Year Plan.

RESEARCH APPROACH

Because of the wide variety of tree improvement programs in the Pacific Northwest, it is difficult to find research problems that are of equal interest to all PNWTIRC members. Therefore, the PNWTIRC research program consists of a suite of individual research projects that reflect a broad range of interests and needs. The administrative costs of all major research projects are borne by all contributing members. In contrast, active participation and in-kind contributions will vary by project. The Cooperative may also undertake subprojects that are financed by additional project-specific contributions from a subset of the members. More details on these approaches are given in Table 3.

Specifics on individual research projects can be found in the PNWTIRC Annual Reports. Although PNWTIRC research has focused exclusively on Douglas-fir, studies on other tree species will be undertaken if they are judged high priority.

REPORTS AND DATA

Results from Cooperative research projects are non-proprietary. Once the data have been analyzed, interpreted, and properly reviewed, they become public information. All information is reported as quickly as possible. The Cooperative produces two types of formal reports:

1. **Project reports** – Project reports consist of information from Cooperative research projects that is published in newsletters, proceedings, scientific articles, extension bulletins, etc.
2. **Annual reports** – The annual report includes a membership list, recent accomplishments, overview of research projects, publications, and a summary of financial support.

The contents and authorship of project reports are specified in the work plans. Nonetheless, the Forest Research Laboratory has the right to edit and report all results of PNWTIRC studies which in its judgment should be reported to the public. Preliminary results are communicated to Cooperative members through meetings and interim reports. Interim reports are provided to PNWTIRC members and key scientific colleagues for their review and comment. Because these reports often contain preliminary data and conclusions, their distribution is restricted.

Copies of PNWTIRC data sets are stored in a data bank maintained by the Director. A Cooperator may request data from installations on the Cooperator's own land, or from all installations included in the research project. When a Cooperator requests data that was collected from someone else's land, the origin of the data will be concealed. Non-PNWTIRC data that are loaned to the Cooperative will not be released to any third party without the Cooperator's permission.

FUNDING

PNWTIRC funds come from two main sources: (1) the Oregon State Legislature supports the Cooperative through their contributions to the Forest Research Laboratory at OSU, and (2) Regular, Associate, and Contractual members contribute annual membership fees.

State funds are used for the Director's salary (0.6 FTE), office and laboratory space, incidental supplies, secretarial help, and other support staff. State funds may also support research technicians, graduate students, and other operating expenses.

Annual membership fees are used for the salaries of other permanent and part-time employees, graduate students, supplies, equipment, and travel. The Policy/Technical Committee reviews the Cooperative's budget on a yearly basis and sets the fee schedule. Beginning July 1, 2004, all annual fees will be subject to an indirect cost rate of 10%. This rate may change in the future, but will always be at or below one-half of the OSU off-campus indirect cost rate, which is currently 26%.

Funding for Cooperative research can also be obtained via contracts, research grants, fellowships, scholarships, or gifts from individuals or philanthropic organizations.

TERMINATION OF PARTICIPATION

A Cooperator may cease or restrict participation in the Cooperative including, without limitation, the right to stop transmittal of funds and to halt further use of study sites and other logistical support, provided notice is given in writing at least 60 days in advance. The Forest Research Laboratory (FRL) may cease or restrict its participation in the Cooperative if adequate financial and logistical support from Cooperators is not forthcoming or if it is in the best interest of the FRL. The FRL must notify the Cooperators in writing at least 60 days prior to such action.

Table 1. PNWTIRC Membership Categories and Fee Structure.

Regular Members (\$8,000)

Annual membership fees and in-kind support – Regular members contribute an annual membership fee and in-kind support (e.g., study sites, labor, equipment, and materials).

Acreage requirements and voting privileges – Regular members include organizations that own, lease, or manage 100,000 acres or more of forestland in the Pacific Northwest. Organizations with more than 500,000 acres may purchase one additional membership for each additional 500,000 acres. This additional membership is subject to approval by two-thirds of the Regular members of the Policy/Technical Committee. Each Regular membership entitles an organization to one vote on the Policy/Technical Committee.

Associate Members (\$4,000)

Annual membership fees and in-kind support – Associate members pay half the annual fee of Regular members and are expected to provide less in-kind support.

Acreage requirements and voting privileges – Associate members include organizations that own, lease, or manage fewer than 100,000 acres of forestland in the Pacific Northwest. Associate members have one vote on the Policy/Technical Committee.

Contractual members (fees are variable)

Annual membership fees and in-kind support – Contractual members contribute individually negotiated annual fees that are lower than those required for the equivalent Regular or Associate membership. Contractual members are expected to provide less in-kind support than do Regular members.

Acreage requirements and voting privileges – There are no acreage requirements for Contractual members. Representatives serve on the Policy/Technical Committee, but have no voting rights.

Liaison Members (no fees)

Annual membership fees and in-kind support – Liaison members contribute no annual fees or in-kind support.

Acreage requirements and voting privileges – Representatives serve on the Policy/Technical Committee, but have no voting rights.

Fee Payment

The Cooperators may change future annual membership fees at the annual meeting. Invoices for annual membership fees are issued on July 1 of each year. Payments are due as described in the relevant *Memorandum of Agreement* or *Participating Agreement*. Beginning July 1, 2004, all annual fees will be subject to an indirect cost rate of 10%. This rate may change in the future, but will always be at or below one-half of the OSU off-campus indirect cost rate, which is currently 26%.

Table 2. Responsibilities of the Tree Improvement Research Cooperative.

The Cooperative Director:

1. Provides overall leadership and coordination for PNWTIRC activities.
2. Helps the Policy/Technical Committee set research priorities.
3. Plans and designs studies which meet the practical needs of the Cooperators, yet conform to the standards of scientific experimentation.
4. Prepares and obtains agreement on work plans that include (a) clearly stated objectives, (b) procedures, (c) sound statistical methods and experimental design, (d) a budget listing both sources of income and planned expenditures, (e) responsibilities of participants including the establishment of experiments, data acquisition and analysis, and authorship of publications. In addition, because subprojects will involve the participation of only a subset of the cooperators, subproject work plans must also clearly state the applicable policies for intellectual property rights and confidentiality.
5. Supervises the implementation of work plans to ensure that: (a) experiments are implemented as specified in the work plan, (b) experiments are appropriately maintained, (c) data are appropriately collected, (d) data are appropriately analyzed, (e) data and/or results are disseminated to members in a timely fashion.
6. Manages and maintains the data sets derived from PNWTIRC studies.
7. Leads the analysis and interpretation of research results.
8. Publishes and distributes the results of Cooperative research projects and provides the technical guidance needed to translate the research findings into practice.
9. Prepares an annual report summarizing the accomplishments of the Cooperative.
10. Prepares and administers the annual operating budget of the Cooperative and hires and supervises the personnel needed to carry out research projects.
11. Schedules and moderates annual meetings of the Policy/Technical Committee including approving annual budgets, presenting annual reports, and reviewing research projects.
12. Seeks research funding from non-PNWTIRC sources when appropriate.

Each Regular, Associate, and Contractual Member of the Cooperative:

1. Provides a representative on the Policy/Technical Committee.
 2. Provides financial and in-kind support.
 3. Fulfills the responsibilities outlined in the approved work plans including such things as installing and maintaining field studies and collecting data.
 4. Provides guidance on program direction and emphasis, level of support, compatibility with other research programs, technical questions, and other general issues.
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Table 3. Approach to research.

1. Research is defined on a project basis.
 - a. Major projects are projects that (1) require a substantial amount of financial and/or in-kind resources and (2) are mostly financed by annual membership fees or grants.
 - b. Subprojects are projects that (1) require a substantial amount of financial and/or in-kind resources and (2) are mostly financed by contracts or additional project-specific contributions from a subset of the members. These subprojects may be specific, short-term projects conducted by individual scientists or graduate students, or projects carried out by one or more of the Cooperative members.
 2. All Cooperative research projects must be approved by the Director. In addition:
 - a. For major projects and subprojects, at least two-thirds of the voting members of the Policy/Technical Committee must approve the work plan.
 3. For each project, the responsibilities of each member will be described in the work plan. Participation by one member might entail establishing and maintaining a study plot, whereas another member might simply provide expertise.
 4. Work plans for major projects and subprojects will include (a) clearly stated objectives, (b) procedures, (c) sound statistical methods and experimental design, (d) a budget listing both sources of income and planned expenditures, (e) responsibilities of participants including the establishment of experiments, data acquisition and analysis, and authorship of publications. In addition, because subprojects will involve the participation of only a subset of the cooperators, subproject work plans must also clearly state the applicable policies for intellectual property rights and confidentiality.
 5. Researchers from non-member organizations may be invited to participate in, and perhaps direct, particular projects.
 6. Because the intent of the Cooperative is to complement research by other organizations in the region and to minimize duplication, research projects will be initiated only after consultation with and review by researchers having expertise in the area of interest.
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