

**DAVID F. POLSTER**  
**Plant Ecologist**

**EDUCATION / AFFILIATIONS**

B.Sc., (Honours) Biology, University of Victoria, 1975  
M.Sc., Plant Ecology, University of Victoria, 1977  
R.P.Bio., Registered Professional Biologist (#148)  
Former President, Canadian Land Reclamation Association  
Treasurer, Society for Ecological Restoration, B.C. Chapter  
Life Member, Canadian Nature Federation

**EXPERIENCE**

Mr. Polster has considerable experience in planning and conducting plant ecological investigations for park developments, hydroelectric developments and mine impact assessments. He has been responsible for planning and implementing reclamation programs for major mines, linear developments, forest sites, gravel pits and industrial developments.

Mr. Polster has been instrumental in the development of innovative revegetation programs for major industrial developments. He has pioneered the use of soil bioengineering solutions for the treatment of steep and/or unstable slopes in Western Canada. Mr. Polster has been responsible for development of innovative vegetation management programs for the transportation sector. Mr. Polster is qualified to provide professional revegetation and erosion control prescriptions, and road deactivation prescriptions for forest lands.

1985 **POLSTER ENVIRONMENTAL SERVICES LTD.**, Duncan  
to Plant Ecologist  
date

Responsible for planning and conducting reclamation programs for major industrial developments and mines in Western Canada. Reclamation plans were developed as part of environmental impact mitigation strategies for BHP Diamonds Inc. NWT Diamonds mine, CP Rail's massive Rogers Pass Project, Gulf Canada's Mount Klappan Coal Mine, British Columbia Hydro and Power Authority, Parks Canada, University of British Columbia, British Columbia Telephone Company's Lightguide Transmission System, Equinox Resources and Sumac Mines. Reclamation assessments, field trials and annual report production have been conducted at the Cassiar Asbestos Mine, Mount Klappan Coal Mine, BHP Island Copper Mine and as part of CP Rail's railway upgrading program. Mr. Polster served as environmental supervisor for the Roger's Pass Project where he was responsible for all aspects of environmental protection, impact mitigation and liaison with Parks Canada. Mr. Polster has been responsible for the direction and preparation of permit applications for gravel pits, quarries and industrial developments in B.C., Alberta, Ontario and Manitoba. Vegetation assessments have been carried out for Cominco Ltd., Fording Coal Ltd., and the Wilderness Advisory Committee. Mr. Polster has served as environmental coordinator for the \$1.3 billion Vancouver Island Highway Project.

Mr. Polster has been responsible for the development of innovative bioengineering treatments for a variety of difficult sites. Mr. Polster has applied his expertise in vegetation ecology to the development of reclamation systems that utilize natural successional processes in the reclamation of difficult sites. He has designed and supervised installation of bioengineering systems for the revegetation of the Point Grey cliffs at the University of B.C., the Capilano Reservoir slide, TimberWest slides, Pacific Forest Products slides, Campbell Group slides, Interfor Clayoquot Sound slides, slides in the San Juan drainage as well as a variety of railroad and highway sites. Mr. Polster has worked with geotechnical engineers to provide cost-effective solutions to slope stability problems.

1981 **NORECOL ENVIRONMENTAL CONSULTANTS**, Vancouver  
to  
1985 Plant Ecologist

Responsible for technical co-ordination and planning of reclamation programs for major coal and metal mine developments and other industrial and municipal developments. Responsibilities included site mapping, vegetation/wildlife habitat studies, and reclamation planning for Fording Coal's Eagle Mountain Project, Sage Creek Coal's proposed mine, Quinsam Coal's proposed mine, mine extensions for Westar, and Crows Nest Resources, and development of a reclamation program for the treatment of acid generating mine wastes for Equity Silver Mines' operation near Smithers. Mr. Polster represented industrial clients at numerous public hearings.

1977 **TECHMAN ENGINEERING LTD.**, Calgary  
to  
1981 Plant Ecologist

Responsible for reclamation activities related to industrial project development in B.C., Alberta and Ontario, including reclamation planning, test plot design, establishment and assessments for Baymag Mines Ltd., Elco Mining Ltd., Gregg River Resources Ltd., Sukunka Coal Mines, Manalta Coal Ltd., Onakawana Developments Ltd., Luscar Ltd. and Alberta Power Ltd. Mr. Polster was responsible for preparing the technical aspects of a Manual of Species Suitability for Reclamation in Alberta for Alberta Environment. Plant ecological analysis, community mapping and species identification were conducted for a range of park, mine and industrial developments, including B.C. Hydro, Elk Island National Park, Elco Mining and Gregg River Resources.

1972 **UNIVERSITY OF VICTORIA**, Victoria  
to  
1977 Student

As a graduate student from 1975 to 1977, Mr. Polster completed a thesis entitled "Plant Communities of the Alpine and Meadow Areas of Southeastern British Columbia". During his undergraduate years, Mr. Polster worked as a summer student for the Royal B. C. Provincial Museum on botanical collections along the Stewart - Cassiar and Alaska Highways, in the Kootenays and completed an undergraduate thesis on talus slope vegetation on the Liard Plateau. He collected and dissected small mammals for a study of trichinosis in wildlife for the West Kootenay Health Unit, and was involved in a feasibility study for alpine park planning in the Earl Grey Pass area of B.C.

**Environmental Studies, Reclamation / Restoration and Soil Bioengineering Experience  
Polster Environmental Services Ltd.**

Dates	Client	Project
1977 - 1979	Elco Mining Ltd.	Designed reclamation program for proposed 5 million t/yr coal mine in Elk Valley, SE Coal Block and developed an award winning reclamation program for 40 ha of exploration, including bioengineering stabilization of Elk River banks at an exploration road crossing.
1978	Elk Island National Park	Vegetation Study Sampled, classified and mapped the vegetation of Elk Island National Park near Edmonton.
1978	Manalta Coal Ltd.	Conducted reclamation trials at the proposed Onakawana lignite mine near James Bay in northern Ontario. A reclamation plan was prepared that recommended the use of native peat materials as a soil amendment for vegetation growth on the mine spoils.
1978-1979	B.C. Hydro	Liard and Stikine and Iskut Projects Sampled, classified and mapped the vegetation of the Liard, Stikine and Iskut River basins as part of an impact assessment being prepared by B.C. Hydro for proposed hydroelectric schemes involving these rivers and their tributaries. The project involved mapping over 3 percent of the total land area of British Columbia.
1979 - 1980	Alberta RRTAC	Technical author, Manual of Plant Species Suitability for Reclamation in Alberta.
1979	Gregg River Resources	Conducted field work and prepared vegetation sections of impact assessment as well as a detailed reclamation plan for proposed open pit coal mine.
1979 - 1980	BP Exploration Canada Limited	Establishment and evaluation of reclamation trials including cuttings tests at the Sukunka Coal property, NE Coal Block.
1980	Fording Eagle Mountain	Studies Assessed the vegetation / wildlife interactions on Eagle Mountain in preparation for a major expansion of the Fording Coal Mine.
1982	Equity Silver Mines Ltd.	Preparation of reclamation plan to deal with acid rock drainage and restoration of site productivity. Key elements included treatment of soils with high metals contents and isolation of acid generating wastes.

- 1983 Quinsam Coal Limited  
Preparation of detailed reclamation plan for open pit coal mine on Vancouver Island near Campbell River. Detailed test plots were established to support the contention that the mine could be reclaimed to provide productive forest growth. Inter-planting forest trees with legumes was used to enhance growth of the trees.
- 1982 - 1989 CP Rail, Roger's Pass Project  
Development of reclamation plans and supervision of reclamation work for \$500 million tunnelling project through Glacier National Park. Extensive use of wattle fences, live pole drains and other bioengineering techniques helped to reduce project costs and mitigate project disturbances.
- 1982 - 1985 CP Rail, Lake Louis Grade Revision  
Designed reclamation plans and supervised reclamation work for double tracking and grade reduction project from Lake Louise to Stephens (Kicking Horse Pass). Live pole drains and cuttings were used to stabilize saturated silts.
- 1984 - 1994 Gulf Canada Resources Limited  
Design and supervision of award winning reclamation programs for proposed Mount Klappan anthracite mine near Dease Lake, including the use of wattle fences for stabilization and revegetation of angle of repose waste rock dump slopes.
- 1984 Marathon Reality  
Development of an award winning reclamation plan for Reflection Lake gravel pit, Golden, B.C.
- 1985 Brinco Mining Limited, Cassiar Division  
Development of reclamation plans for tailings pile including use of bioengineering for stabilization of steep slopes.
- 1985 - 1994 CP Rail, Ballast Quarry/Pit Reclamation Plans  
Preparation of reclamation plans for ballast quarries at Hawk Lake, Ont.; Dymont, Ont.; Sudbury, Ont.; Walachin, B.C.; and Swansea, B.C. and ballast pits at various locations throughout the prairies.
- 1986 - 1988 CP Rail, Harrowby Hill Project  
Design and supervision of reclamation program for major change in alignment to move off unstable shales, Assiniboine River valley near Russell Manitoba. Bioengineering was used to stabilize weeping slopes and to armour drainage ditches.
- 1987 - 1989 University of British Columbia  
Development and supervision of bioengineering systems to stabilize Point Grey cliffs. Over 4,500 linear meters of wattle fences and other bioengineering structures (live pole drains) were installed.
- 1988 CP Rail, Red Deer Track Relocation  
Preparation of reclamation plans for track relocation project, including wattle fences for stabilization of steep fill slope above a creek.

- 1988 BC Tel Fibre Optics Line, Jasper to Vancouver  
Design and supervise reclamation program for major fibre optics line. Bioengineering work was used to stabilize sandy slopes at Jackman (near Valemont) and a wet cut slope in Mount Robson Park.
- 1989 B.C. Hydro (Klohn-Crippen)  
Design of special reclamation techniques (wattle fences, live pole drains and special seeding) for shale cut slope at Site "C" on the Peace River.
- 1989 CP Rail, Oldman River Track Relocation  
Design of reclamation program, including bioengineering for track relocation project associated with Oldman River Dam construction.
- 1989 - 1990 Private Residences, Victoria  
Bioengineering work was conducted at four private residences in the Victoria area to stabilize unstable slopes.
- 1990 - 1991 Parks Canada  
Design of bioengineering systems and supervision of installation for difficult sites on Trans Canada Highway and Mount Revelstoke road in Glacier and Mount Revelstoke National Parks.
- 1990 - 1992 B.C. Hydro (Golder Associates Ltd.)  
Design of bioengineering system for control of sedimentation from marine clay slope on Alouette Spillway Project, supervision of installation and post-construction monitoring.
- 1990 - 1995 B.C. Hydro, Balfour Borrow Pit  
Development of restoration plans and supervision of reclamation work on a till scarp in the Balfour Borrow Pit, Hugh Keenlyside Dam, Castlegar. Work included installation of live pole drains and live gully blocks for stabilization.
- 1990 - 1991 Pacific Coast Energy  
Design and supervision of reclamation work, including bioengineering (live pole drains, wattle fences, live bank protection and live silt fences) on watercourse crossings for Vancouver Island section of the Vancouver Island Gas Pipeline.
- 1994 – 1995 Whitehorse Copper Mine  
Design of revegetation plan for large (125 ha) tailings pond. Supervised implementation of reclamation work. Conducted assessments of growth and prepared reports.
- 1995 Greater Victoria Water District  
Design of reclamation concepts for Sooke Reservoir expansion including systems for shoreline protection.

- 1995 NWT Diamonds Ltd.  
Design of reclamation, decommissioning and closure plan for Canada's first major diamond mine. Innovations included the "donut" waste dump where the outside could be built and reclaimed in the early years of mining thus avoiding impacts on caribou herds that pass the mine area annually.
- 1995 Oyama Gravel Pit (Thurber Engineering Ltd.)  
Preparation of a reclamation plan for proposed gravel pit in Oyama, B.C.
- 1995 - 1996 Greater Vancouver Regional District  
Design and supervision of bioengineering projects to stabilize landslides in the Capilano Watershed. Work involved over 1,000 linear meters of wattle fences and live pole drains.
- 1995 - 1996 TimberWest Forest Limited  
Design and supervision of reclamation programs for landslides and unstable sites in Beaver Cove, Nanaimo Lakes, Johnstone Strait, Honeymoon Bay and Rosander Block. A total of over 1,000 linear meters of wattle fences and live pole drains were installed.
- 1995 - 1996 International Forest Products Limited  
Development of deactivation prescriptions for 27 km of forest roads in Clayoquot Sound (Shark Creek) including bioengineering prescriptions for 11 landslides. Design of bioengineering systems for 95 landslides and tormented gullies in the Lost Shoe, Thunderous, Muriel Ridge, Catface and Little Toquort areas of Clayoquot Sound. Supervised installation of bioengineering systems and trained workers (IWA members).
- 1995 - 1996 San Juan Watershed Restoration Project (Iverson Forest Management)  
Design and supervision of restoration works for Hemmingsen, Mosquito, Modeste and mainstem San Juan areas. Work to date has included supervision of a native crew and installation of 1,317 modified brush layers (2,600 linear meters of bioengineering).
- 1995 - 1996 Pacific Forest Products Limited  
Design and supervision of bioengineering installation for treatment of landslides on private lands, Cowichan Woodlands. A total of 185 linear meters of wattle fences and live pole drains were installed.
- 1995 - 1997 The Campbell Group (John Hancock Insurance)  
Design and supervision of bioengineering installation for treatment of landslides and slumps on private lands in the Gordon River and Cowichan Lake area. A total of 367 linear meters of wattle fences and live pole drains were installed.
- 1995 - 2002 Island Copper Mine  
Preparation of revegetation strategy for large open pit copper mine on Vancouver Island. Obtained plant materials, conducted annual assessments and prepared annual reclamation reports.
- 1996 MacMillan Bloedel Limited (Acres International Limited)  
Design of restoration program for Theodosia River WRP. Work included bioengineering designs for major forest landslides.

- 1996 Ducks Unlimited  
Development of a manual for shrub management including the use of bioengineering systems for shrub propagation.
- 1996 Weyerhaeuser Canada Ltd. (Golder Associates Ltd.)  
Design and supervision of bioengineering systems for stabilization of landslides in the Willis Creek area. A total of 149 linear meters of live pole drains and 47 linear meters of wattle fences were installed.
- 1996 Pacific Forest Products Limited (D. Tripp Biological Consultants)  
Assessment of riparian reclamation, including bioengineering, in Gold River watershed.
- 1996 Sechelt Creek Power Project (Nelson Environmental Services)  
Design and supervision of bioengineering system to stabilize creek bank which had become de-stabilized due to project development.
- 1996 - 1999 B.C. Ministry of Highways  
Environmental Coordinator for \$1.3 billion Vancouver Island Highway Project. Design of bioengineering systems for treatment of unstable highway slopes. Developed innovative reclamation programs for specific sites.
- 1996 B.C. Ministry of Forests  
Development and presentation of a course on steep slope safety (Duncan Forest District). Assessment of Chapman Creek landslides and development of bioengineering solutions (Powell River Forest District). Assessment of landslides (Chilliwack Forest District)
- 1996 Redfern Resources, Tulsequah Chief Mine  
Development of a reclamation plan for proposed base metal mine in Northwestern B.C. including soil sampling and analysis, substrate development, revegetation and scheduling.
- 1996 - 1997 Englishman River Aggregates  
Preparation of a reclamation plan for proposed gravel pit in the Parksville area.
- 1996 – 1997 International Forest Products Ltd.  
Develop restoration prescriptions for landslides and unstable gullies in the Lost Shoe – Thunderous, Little Toquart, Catface Mountain, Muriel Ridge, and Shark Creek areas of Clayoquot Sound. Supervised restoration work in Lost Shoe – Thunderous area.
- 1997 Ministry of Forests  
Rehabilitation assessment for landslides in the Nahatlatch River, Spuzzum Creek and Mowhokam Creek areas of the Chilliwack Forest District. Design of bioengineering solutions for treatment of road associated landslides. Supervision of work.
- 1997 Western Forest Products  
Inspection of landslide sites in Sombrio watershed and general bioengineering prescriptions for treatment.

- 1997 Cowichan Valley Regional District  
Design of a reclamation program for a proposed landfill site utilizing a seal, composted dry land sort wastes and natural forest soils.
- 1997 Canadian Pacific Railway Company  
Design of reclamation program for proposed new line of railway near Lacombe, Alberta.  
Preparation of responses to Canadian Transportation Agency information requests
- 1997 – 1998 Westmin Resources Ltd.  
Design and development of revegetation prescriptions for soil cover test plots to treat acid generating / high metals tailings materials.
- 1997 – 1998 International Forest Products Ltd.  
Design of bioengineering prescriptions for landslides and unstable slopes in the Malksope River drainage. Treatments to include over 4,000 modified brush layers, 240 live gully breaks and 120 m of live bank protection.
- 1997 – 2002 Ministry of Forests  
Development and presentation of a course (BC Forestry Continuing Studies Network) on soil bioengineering that is offered throughout British Columbia. Development of demonstration sites in each forest region showing bioengineering principles.
- 1999 Talisman Energy Inc.  
Design, contract tendering and supervision of bioengineering project in Chetwynd area including 250 live smiles, 200 m of live pole drains and 500 m of wattle fences. Treatments were designed to stabilize failing cut slopes.
- 1999 Hecate Strait Streamkeepers  
Design and supervision of bioengineering project for Chinukundl landslide on the Queen Charlotte Islands.
- 1999 Tsawout Indian Band  
Design and supervision of restoration work on sewer pipeline. Work included planting of over 300 sword ferns and 400 trees (cedar and alder).
- 1999 - 2000 Ainsworth Lumber Co. Lillooet Mill  
Preparation of riparian restoration plan for along the Seton River in Lillooet. Design called for pocket planting, brush layers and live staking as well as planting rooted plugs. Supervision of initial installations in spring of late 2000. Further work is planned for the spring of 2001.
- 2000 Ministry of Forests  
Preparation of section on bioengineering for “Resource Road Rehabilitation Handbook: Planning and Implementation Guidelines” WRP Technical Circular No. 3.

- 2000 Ministry of Environment Lands and Parks  
Revegetation prescriptions and supervision of portions of China Beach Provincial Park. Successional reclamation treatments were used to revegetate an old gravel pit, a garbage dump and an old sawmill site.
- 2000 Thurber Engineering Ltd.  
Development of soil bioengineering prescriptions for unstable slopes in Mount Douglas Park, Victoria, B.C. Plans were prepared for unstable Quadra sand slopes.
- 2000 City of Nanaimo  
Restoration design for Neck Point Park and trail stabilization suggestions for Northfield Creek area. Designs include pocket plantings to out-compete broom and blackberry and wetland restoration.
- 2000 Ainsworth Lumber Co. Yalakom FSR  
Prepared bioengineering design for steep unstable slopes along the Yalakom River. Designs included 415 modified brush layers and planting of 400 rooted plugs.
- 2000 Clayoquot Wilderness Resort  
Design of restoration system for sites disturbed during previous logging. Plans included planting with pioneering species as well as establishment of kinnikinnick on the tops of rock cuts.
- 2000 Atco Lumber Co.  
Designed and supervised installation of bioengineering systems to treat troublesome cut slopes above Nelson, B.C. A total of 77 modified brush layers, 44 m of live pole drains and 100 live stakes were installed.
- 2000 Eskay Creek Mine  
Rare species assessment and soil erosion assessment for proposed 6 km tailings discharge pipeline.
- 2000 Christy Point Apartments Ltd.  
Preparation of shoreline restoration plans for treatment of riprap area and mud flats adjacent to apartment complex. Plans call for planting of salt marsh species as well as pocket planting in the riprap.
- 2000 Regional District of Bulkley-Nechacko  
Assessed three sites along the Bulkley River to determine the effectiveness of soil bioengineering solutions to bank erosion. Presented a brief seminar on the use of soil bioengineering for treatment of eroding sites.
- 2000 - 2001 University of British Columbia  
Preparation of revegetation designs and contract tender for gully area adjacent to Cecil Green House. A total of 2,000 m of wattle fencing, 60 m of live pole drains and about 225 live stakes were installed. Acted as environmental monitor and supervised bioengineering work.

- 2001 Fisheries Renewal BC  
Designed and provided overall supervision of bioengineering work on Stoltz Claybank along the Cowichan River. A 10 person native crew was trained and installed live stakes, wattle fences, live gully breaks and live pole drains.
- 2001 Forest Renewal BC  
Prepare a “Restoration Species Manual for the Pacific Northwest” to include 225 species that can be used for restoration purposes with a short write-up on the taxonomy, range, growth form, ecological characteristics, tolerances and preferences and restoration considerations.
- 2001 Ministry of Environment, Lands and Parks  
Prepared Streambank Restoration Manual providing details of restoration methods that can be used to treat damaged streambanks, constructed habitat and other riparian sites in need of treatment.
- 2001 City of Regina  
Designed and supervised installation of a demonstration bioengineering system to treat the eroding dikes along Wascana Creek in downtown Regina. A system of emergent aquatic vegetation was used to solve wave erosion problems while a diversity of woody species were used on the dikes.
- 2001 Small Harbours Branch, DFO  
Developed conceptual treatments for environmental enhancement of French Creek Harbour including a drainage treatment system using a created wetland, breakwater riparian revegetation and visitor amenities.
- 2001 Terrestrial Ecosystem Restoration Program, MWLAP  
Preparation of “Guidelines for Effective Ecosystem Restoration”. This web based product is designed to give people involved in ecological restoration a foundation of the basic components of an effective project.
- 2001 - 2002 Terrestrial Ecosystem Restoration Program, MWLAP  
A major report entitled “The Role of Invasive Species Management in Terrestrial Ecosystem Restoration” was prepared for use by those engaged in various aspects of ecosystem restoration.
- 2002 Parry’s RV Park and Campground, Parksville  
Installation of live palisades and live staking on the bank of the Englishman River to protect the bank from erosion. About 200 live palisades were installed along a section of riverbank that was actively eroding.
- 2002 Wolverine Coal Project Reclamation Plan, Western Canadian Coal Co.  
Reclamation plans were prepared for a major proposed coal mine in the Northeast Coal Block near Tumbler Ridge. Plans entailed soil salvage and use and revegetation to restore land use values primarily associated with wildlife use of the land.