Legislation to Establish Ecological Reserves for the Protection of Natural Areas

R. T. Franson

Follow this and additional works at: http://digitalcommons.osgoode.yorku.ca/ohlj

Citation Information
http://digitalcommons.osgoode.yorku.ca/ohlj/vol10/iss3/3

This Article is brought to you for free and open access by the Journals at Osgoode Digital Commons. It has been accepted for inclusion in Osgoode Hall Law Journal by an authorized editor of Osgoode Digital Commons.
LEGISLATION TO ESTABLISH ECOLOGICAL RESERVES FOR THE PROTECTION OF NATURAL AREAS

BY R. T. FRANSON

Few today would question the need for a greater understanding of environmental forces and the effects of mankind's activities on the environment. Research ecologists must provide that understanding. Unfortunately, their ability to carry on their research is seriously hampered by the existing legal system, as the following events illustrate.

In 1965 the Water Resources Branch of the Alberta Department of Agriculture made a submission under the Agricultural and Rural Development Act proposing "that measures be taken to establish research basins for the general purpose of determining the resulting change in hydrologic characteristics in an area that is subjected to the normal type of agricultural development." In support of its proposal, the Branch pointed out that agricultural development substantially alters the natural conditions of an area, and with them the hydrologic characteristics, frequently to the detriment of the residents. "These changes bring about drainage, erosion, and flood control problems." The branch hoped that by studying the changes agricultural development caused in a watershed, ways could be found of preventing these problems from arising in the future. It was proposed that the Spring Creek Basin be used.

The proposals were approved and work went forward. Plans called for 5-10 years of calibration studies aimed at determining the characteristics of the area before any modifications took place. This would be followed by agricultural experimentation.

The project soon attracted the interest of other scientists. The scope of the project was broadened to provide a facility for multi-disciplinary research, and the Boreal Institute of the University of Alberta was appointed to act as the administrative unit for the expanded project.

At the same time, it was agreed that a "control" basin would have to be added. It would be maintained in its natural state and would be used as a standard against which to measure changes in the modified basin. The scientists felt

---

*Assistant Professor, Faculty of Law, University of British Columbia. The research described in this article was done by a research team at the Faculty of Law, University of British Columbia, under a grant from Canada Council. In addition to the author, the research team included: Dr. A. R. Thompson, Project Director; H. R. Eddy; A. R. Lucas; E. B. Peterson; D. McCrea; and D. Sperry. The author wishes to acknowledge, with gratitude, the debt he owes each of the team members.

2 Water Resources Division, Alberta Department of Agriculture, Watershed Research —Spring Creek Basin, Submission to A.R.D.A. (1965) at 2. A copy of the research proposal is on file at the Faculty of Law, University of British Columbia.
3 Id., at 1.
that initial calibration of the modified basin would not be an acceptable substitute for a control basin because "departures of annual weather and other environmental patterns from 'normal' values" might be too great to allow safe inferences to be drawn.

By January of 1969, $300,000 had been spent in construction of access roads and the installation of meteorological, hydrometric, and other metering stations. Scientists interested in the project had spent a good deal of time and effort studying and selecting sites for the control basin and planning their research efforts.

Then in April of 1969, the chairman of the executive committee was forced to write: what had been a promising multidisciplinary research project now faces real difficulty. It is just recently that we have learned that most of the surface as well as sub-surface rights in the area have been leased either to forest products or petroleum companies.

Under their leases, these companies were free to develop the area and, in the process, so alter the hydrology of the area as to destroy the usefulness of research being carried out by project members.

The misfortune of the Spring Creek Project resulted, in part, because the legal system has not yet recognized ecological research as a valid land use deserving of some protection, and, at the same time, has accorded priority to resource exploitation in all undeveloped areas. In order to encourage the governments of Canada to provide protection for ecological research sites a research team was established at the University of British Columbia Faculty of Law under the direction of Dr. A. R. Thompson.

The effort was closely coordinated with Canada's participation in the International Biological Program (IBP). IBP comprises 55 nations that have agreed to establish a worldwide inventory of natural areas on which scientific research may be carried out. The Canadians participating in this program

4 G. H. La Roi, Proposal for the Establishment of the Simonette Ecological Reserve (1969) at 6. Copy on file at the Faculty of Law, University of British Columbia.

5 Minutes, Meeting of the Principals and the Executive Committee of the Spring Creek Basin Project, April 10, 1969. Copy on file at the Faculty of Law, University of British Columbia.

6 One of the steps the scientists took was to contact the oil and gas companies involved. "The petroleum industry [showed] a cautiously cooperative attitude [but refused to] guarantee that petroleum exploration and other operations will not damage or destroy on-going research study, unless government regulations are instituted and enforced." The minutes of the Science Committee of the Spring Creek Basin Project for July 2, 1969.

A brief suggesting legislation based on an Indiana act, Ind. Acts 1967, c. 266, Ind. St. Ann. 60-888, was submitted to the government. To date, no action has been taken.

7 The International Biological Programme (IBP) is "a world-wide plan of research concerned with 'the biological basis of productivity and human welfare'". G. F. Peterken, Guide to the Check Sheet for IBP Areas, IBP Handbook No. 4, (1967) at 1. We are concerned primarily with the work of one of seven sections of IBP, the section dealing with the Conservation of Terrestrial Communities (IBP-CT). The section has defined its task as: "The establishment of the necessary scientific basis for a comprehensive world programme of preservation and safeguarding of areas of biological or physiographical importance for present and future scientists." Peterken, supra, at 2.

See also F. M. Nicholson, Handbook to the Conservation of the IBP, IBP Handbook No. 5 at 7 (1968).
wished to go beyond the objectives of IBP and provide legal protection for those areas included in the inventory. Areas thus identified and protected would be known as ecological reserves.

Our research team hoped to provide the Canadian Committee of IBP with the legal assistance it would need to achieve long term protection of its ecological reserves. Our plan was to collect such model statutes as could be found in Canada, the United States, and Great Britain, study the results obtained under these statutes, and draft a model statute for adoption in those provinces that did not have any legislation covering the area.

This paper is therefore an attempt to outline the legal needs of the research ecologist and present a framework for legislation to meet these needs. It is also an attempt to provide some insight into the development of the ecological reserves legislation enacted in British Columbia in response to IBP's suggestions.

WHY CREATE ECOLOGICAL RESERVES?

Surprisingly, IBP scientists could not agree on what a natural area was, let alone what it should be used for. However, there was general agreement among scientists that ecological reserves were urgently needed to provide outdoor laboratories where ecological research would be possible. Environmental forces are so complex and interrelated, that they cannot be studied in artificial laboratories. Nothing less than direct observation of natural processes will suffice. Moreover, the genetic information stored in existing species may be quite valuable. A unique habitat may be the result of a combination of environmental factors, the understanding of which could be "the key to major progress in the control of the environment".

---

8 The British Columbia legislation and the role our project team played in its development are discussed below. See text, infra at notes 68-85.

9 This impression has been gained from a series of meetings with the scientists forming the CT section of the Canadian Committee of the International Biological Programme (CCIBP-CT), and with scientists working on the Research Natural Areas Program in the United States.

10 Wild and primitive species are needed to continue breeding pathogen resistant strains of agricultural crops since the pathogens themselves are continually adapting. See, e.g., I.A. Watson, "The Utilization of Wild Species in the Breeding of Cultivated Crops Resistant to Plant Pathogens," in O.H. Frankel and E. Bennett, *Genetic Resources in Plants* (1970) at 441-57; O.H. Frankel & E. Bennett, "Genetic Resources," id. at 7-17. As modern cultivating techniques are expanded the natural sources of wild and primitive stocks are disappearing. "There is therefore an a priori case for urgent measures to protect and preserve valuable primitive and wild gene pools which are threatened with extinction." *Id.*, at 9-10.

11 D. Stamp, *Nature Conservation in Britain* (1969) at 70. Sir Dudley Stamp points out that understanding environmental factors can be of immense practical importance: "Thus the rough grazing of much of our remaining common land has reached a certain stage in development towards a forest..., and is maintained in that stage by grazing animals. If an urban authority takes it over as a recreational area and the grazing animals are removed, ... it is likely to pass into a useless thicket or scrub. Many authorities are only now learning ... that ... perhaps the only way of maintaining land as they want is to farm it."
Unfortunately, available natural areas are disappearing at an alarming rate, and once gone cannot be re-created. Steps must be taken now to preserve those sites that have scientific importance. Moreover, as is illustrated by the unfortunate events surrounding the proposed research at Spring Creek Basin, long-term protection must be afforded such sites. Not only does ecological research often take a long time to complete, research sites become more valuable the more they are studied because information is accumulated concerning the site. Thus, the researcher who is focusing on a particular environmental force may use the information developed by other researchers concerning other environmental forces operating in the study area.\textsuperscript{12}

While there was general agreement among scientists on these points, there was no obvious consensus concerning other questions that needed to be answered before legislation and regulations could be drafted. The nature of the problem can best be illustrated by considering a question concerning the management of an ecological reserve. Because of changes in the world outside a reserve, it can no longer be assumed that nature will operate in the same way as it has in the past. For example, prairie grasslands were maintained by natural fires.\textsuperscript{13} Without such fires the grasslands would soon become choked with larger shrubs. Because of fire control on adjoining lands, natural fires can no longer be counted on to control shrub growth in a grassland reserve. Fires that had once started on adjoining land and swept over the reserve area will no longer occur. Moreover, the buildup of shrubs in the reserve will result in more fuel being available than would have been available in the past. Consequently natural fires may have different effects than in former years making it necessary to control natural fires on reserve lands in order to protect surrounding lands.\textsuperscript{14}

The question is clearly posed: should the manager of a grasslands ecological reserve burn the area periodically? The question was important to us because the legislation we drafted had to reflect the wishes of the scientists. In addition, we hoped to provide draft sets of regulations for use by the governmental officials charged with overseeing ecological reserves programs. It is currently the statutory and historical duty of the forest services, among others, to fight fires. It seems doubtful that this could be overcome without clear legis-


\textsuperscript{14} The Metolius Research Natural Area in Oregon provides an example of the problem. “Fire scarred ponderosa pine and the absence of dominant, old-growth Douglas-fir and grand fir indicate ground fires periodically burned nearly all portions of the tract prior to initiation of fire control programs about 1910.” J.F. Franklin, C.T. Dyrness, and F.C. Hall, \textit{Federal Research Natural Areas in the Pacific Northwest ML-1, ML-3} (review draft 1971). During a tour of the area in May, 1971, Dr. F.C. Hall, U.S. Forest Service, Portland, Ore., pointed out that the young ponderosa pines were moisture starved because no fires had occurred to thin them out. He further stated that it would be impossible to introduce fire now because too much fuel had accumulated.
relative directions establishing the legitimacy of prescribed burning for ecological reserves.\textsuperscript{15}

Another unresolved issue concerned the scope of the program. Were the reserves to be used solely for research purposes, or could they be used for educational programs? Might some educational uses be allowed, for example, graduate programs, and some be disallowed, for example primary school education? While most of the scientists seemed to favor development of educational uses,\textsuperscript{16} some were opposed because they feared that educational uses would lead to demands for recreational use that could destroy sensitive ecosystems that would be included in the reserve system.\textsuperscript{17}

Our task as draftsmen was therefore complicated by the fact that no consensus emerged on many of the issues that were raised. Consequently, it was necessary to provide an institutional means by which the necessary decisions could be made well in advance of crisis situations.

EXISTING ECOLOGICAL RESERVES PROGRAMS

One of the initial phases of our research involved gathering model legislation from areas having established ecological reserves programs. Many programs

\textsuperscript{15} The following provision should be adequate:

(1) The Advisory Committee may, with respect to any ecological reserve, prepare a management plan which shall set forth the purposes for which the reserve was designated and the particular features that are to be preserved.

(2) The management plan may divide the reserve into zones, and with respect to each zone, or if the reserve is not zoned, with respect to the entire reserve, shall indicate

(a) whether the natural area will be allowed to develop towards climax stage without management;

(b) if the natural area is to be held at a successional stage, the stage desired and the management techniques that will be applied;

(c) whether research that may impair the natural area for a period of time may be permitted;

(d) the kinds of non-research activities that may be allowed by permit;

(e) whether fencing is required; and

(f) the kinds of physical facilities, such as roads or buildings, that may be permitted.

(g) such other terms and conditions of use as are consistent with the purposes for which the reserve was designated.

(3) A management plan prepared in accordance with this section shall become effective when filed with the Administrator.

(4) Without prejudice to the generality of the foregoing, the management techniques specified under subsection (2) (b) may include prescribed burning, grazing, cutting, mowing and hunting.

\textsuperscript{16} Based on his experience with Nature Conservation in Great Britain, Sir Dudley Stamp observes that a “nature trail” can help protect a reserve from the public. “Visitors by following the trail will be led away from areas where protection and quiet are essential to the maintenance of rare species. Because the public are afforded this access to the most interesting spots, there is less likelihood of resentment when certain parts of the reserve are prohibited.” D. Stamp, \textit{supra} note 11 at 183.

\textsuperscript{17} See, e.g. F.F. Darling & N.D. Eichhorn, \textit{Man & Nature in the National Parks} (1969) at 52-53. As Darling and Eichhorn observe: “Even the purest of nature lovers has physical weight and boots on his feet.”
are already in existence. For example, as of November 1968, a total of 126 National Nature Reserves had been created in Great Britain, covering a total of 258,385 acres.\(^{18}\) In the U.S.S.R. there are over 90 State Nature Areas, or zapovedniks, covering 17 million acres.\(^{19}\) They contain examples of all the main physiographic regions of the country and are protected against all kinds of human activities, allowing long-term investigations of natural processes to be carried out without interference. The Federal Government of the United States has established a system of ecological reserves, called Research Natural Areas, that now contains over 300 reserves.\(^{20}\) Many state governments have also established ecological reserves programs.

The legal framework used to establish ecological reserves systems vary widely from jurisdiction to jurisdiction. In Great Britain, natural areas are acquired and protected by a Crown corporation, the Nature Conservancy.\(^{21}\) The Conservancy is also responsible for undertaking research on its sites. By contrast, the Research Natural Areas in the United States were created by the administrative agencies charged with managing the federal lands. No legislation has been passed to specifically authorize the program or define the effects of designation as a Research Natural Area.\(^{22}\)

Perhaps the most useful models, from the point of view of Canada, are programs in the United States. Several states have enacted legislation aimed at creating a system of protected natural areas.\(^{23}\) Typically, the legislation provides for acquisition and management by a state agency, and also for designation of lands that are privately held but dedicated to ecological reserve purposes.\(^{24}\) The legislation declares that the reserves are to be held in trust\(^{25}\) and that they can be devoted to other uses only after a finding of imperative and unavoidable public necessity.\(^{26}\) This finding may be made by the department that manages the reserves only after a public hearing. Thus, the legislation serves two purposes: (1) a department of state government is charged with the responsibility of acquiring and protecting natural areas; and (2) private owners are afforded the means of dedicating their lands to scientific purposes with the assurance that they will not be interfered with until there has been a finding of unavoidable public necessity.

\(^{18}\) D. Stamp, supra, note 11 at 218-19.

\(^{19}\) V.A. Borissoff, Soviet System of Protected Natural Areas (June, 1971), 45 National Parks & Conservation Magazine at 8, 10.

\(^{20}\) U.S. Federal Committee on Research Natural Areas, A Directory of Research Natural Areas on Federal Lands of the United States of America (1968) at 3.

\(^{21}\) For the history in nature conservation in Great Britain see D. Stamp, supra, note 11 at 7-69.

\(^{22}\) See note 73, infra, and accompanying text.


\(^{24}\) E.g., 11 Burns Ann. Ind. Pt. 1, § 60-888e (Supp. 1971).


Although several of these statutes contain many of the elements that would be necessary for a soundly run ecological reserves program, they cannot simply be imported to Canada. Too many differences exist between the two countries. In the United States the federal government manages most of the remaining undeveloped public lands. In Canada, the provinces do. In the United States the concept of a governmental body holding land in trust for the people is well established. In Canada it is virtually unknown. Finally, one of the most important differences is that natural areas are in much shorter supply in the United States than in Canada. Consequently, politicians in the United States should be expected to be more willing than their counterparts in Canada to commit existing natural areas irrevocably to the purpose of scientific study. It seems unlikely that Canadian Governments would be willing to surround ecological reserves with as iron-clad protection as the state and federal governments of the United States might be willing to use.

EXISTING CANADIAN LEGAL FRAMEWORK FOR ECOLOGICAL RESERVES

To fully appreciate the legal needs of an ecological reserves program in a federal system like Canada's, it is necessary to pause and reflect about the land itself. What the scientists wish preserved are habitats and plant communities. Valuable examples can occur anywhere, along a railroad right-of-way, in a highly urban area, on the side of an inaccessible mountain, over valuable mineral or oil deposits, in important commercial stands of timber, or in a desert that is of interest to no one but ecologists. The lands on which they occur can be owned by the Crown, by private companies, or individuals, or by quasi-public agencies like a hydro authority. They can be encumbered by leases, mineral exploration licences, and many other legal interests. To be fully adequate, ecological reserves legislation must deal with the full variety of circumstances that can exist.


28 There are some exceptions. For example, the National Parks Act, R.S.C. 1970, c. N-13, s. 4, provides:
"The parks are hereby dedicated to the people of Canada for their benefit, education and enjoyment, subject to the provisions of this Act and the regulations, and such Parks shall be maintained and made use of so as to leave them unimpaired for the enjoyment of future generations."
The Creston Valley Wildlife Management Area Act, S.B.C. 1968, c. 14, s. 3(1), provides:
"The Creston Valley Wildlife Management Area is hereby reserved, set apart, and established for the purposes of wildlife conservation, management, and development, and shall be held by the Crown in right of the Province in trust for those purposes."

29 One of the purposes of this phase of our research was to learn something about the problems that might arise in the management of an ecological reserves program. The development of significant interest in reserves programs in the United States is a relatively recent occurrence. Consequently, very little experience has been gained in the management of such programs. Greater experience has been gained in Great Britain. The British reports have been particularly helpful in indicating the importance of preparing a management plan for each reserve. See, e.g. D. Stamp, supra, note 11 at 72-79, 179-83.
It is convenient to discuss those sites that exist on Crown land separately from those that exist on private land. Where the sites are located on Crown land, ecological reserves could be created in most provinces without any additional legislation. In some cases, the power of the Cabinet or one of the Ministers to reserve lands could be relied upon. In others, the parks acts could be used. However, once created these reserves would have little protection. Moreover, existing legislation provides no assistance to those charged with the responsibility of deciding what sites are deserving of protection.

The first problem is that most Crown land is already encumbered. For example, in British Columbia, very little commercial timber exists that is not already the subject of some licence or cutting allotment. While there is no constitutional constraint prohibiting the government from taking these interests without compensation, by long-established tradition the holders of these interests must be paid before their rights are expropriated.

Existing encumberances are only part of the problem. Under most existing legislation there is nothing to guarantee that land designated as an ecological reserve will not subsequently be encumbered by a mineral lease, a cutting licence, or some other interest. Administrators assert that it is unlikely that this would happen but admit that all the reservation means is that the official who is asked to make a subsequent disposition would normally consult with the official in charge of the ecological reserves program before he issued any licence or permit. The conflict would then be ironed out within the administrative structure. However, officials do admit that “reserves” are sometimes overlooked.

Some statutes also authorize acts that could be disastrous to a reserve. For example, if timber has been seriously infested by insects, forestry officials may order that it be cut and removed. Since one of the purposes of ecological reserves might be to study the course of such insect infestations the statutory provision authorizing cutting is inimical to an ecological reserves program. Many other examples of this sort could be cited. In some cases, private

---

30 Lands and Forest Act, R.S.N.S. 1967, c. 163, s. 13; Crown Lands Act, R.S. Nfld. 1952, c. 144, s. 17; Public Lands Act, R.S.A. 1970, c. 297, s. 10(e); Crown Lands Act, R.S.M. 1970, c. C-340, s. 7(1)(d); Lands Act, S.B.C. 1970, c. 17, s. 11; Provincial Lands Act, R.S.S. 1965, c. 48, s. 20(1)(1); Loi des terres et forêts, S.R.Q. 1964, c. 92, s. 20.

31 Recreation Development Act, S.P.E.I. 1969, c. 45, s. 7; Provincial Parks Act, R.S. Nfld. 1952, c. 49, ss. 4, 5, 9; Parks Act, S.N.B. 1961, c. 14, ss. 3(2), 1(d); Provincial Parks Act, R.S.N.S. 1967, c. 244, ss. 4, 6; Provincial Parks Act, R.S.O. 1960, c. 314, s. 3(b); Provincial Parks, Protected Areas, Recreation Sites and Antiquities Act, R.S.S. 1965, c. 54, ss. 3, 4.

32 This is more likely to be the case for reserves created under the lands acts than it is for those created under parks acts. However, even park boundaries have been shifted to accommodate mineral and timber development, See note 45, infra.

33 R.S.B.C. 1960, c. 53, s. 127(1).

34 For example, Manitoba's Noxious Weeds Act imposes an absolute duty on the Crown and private land holders to eradicate certain weeds, R.S.M. 1970, c. N-110.
corporations have rights to licences on Crown lands that have not already been developed.\textsuperscript{35}

Sites located on private lands could be protected in two ways. First, the government could acquire them either by negotiated purchase or expropriation. Generally expropriation powers are broad enough to include acquisition for the purpose of creating an ecological reserve.\textsuperscript{36} In such cases, the legal situation would be the same as described above for other Crown lands.

The second means of protecting lands held by private parties would be for them to retain ownership and manage the lands as ecological reserves. Alternatively, the lands could be dedicated to the purpose of scientific study and conveyed to a trustee for management. While there are no incentives provided for making this dedication at least the lands would probably not be taxable.\textsuperscript{37} However they would face the same threats outlined above for Crown lands with the additional threat of expropriation by the Crown and by many quasi-public corporations.\textsuperscript{38} Since mineral rights have usually been reserved

\textsuperscript{35} E.g., An Act Respecting the Granting of Certain Crown Lands in Labrador to Canadian Javelin, Ltd., For the Construction of a Pipeline S. Nfld. 1970 No. 90, s. 3(1):
“Subject to subsection (2), the Government will grant to Javelin upon reasonable terms and conditions by lease or license such Crown land not then irrevocably granted... to any third party...”

\textsuperscript{36} E.g., Public Works Act, R.S.O. 1960, c. 338, s. 13:
“The Minister may, for and in the name of Her Majesty, purchase or acquire, and, subject as hereinafter mentioned, may without consent of the owner thereof enter upon, take and expropriate any land that he deems necessary for,
(a) the public purposes of Ontario...”
The provision in the British Columbia Department of Public Works Act is more typical, R.S.B.C. 1960, c. 109, s. 9(1):
“The Lieutenant-Governor in Council, for and in the name of Her Majesty, may acquire and take possession of any land... the appropriation of which is in his judgment necessary for
(a) the use, construction, or maintenance of any public work or building...
(e) the purpose of establishing a reserve for the protection of any animals, birds, or fishes.”

See also Provincial Parks Act, R.S. Nfld. 1952, c. 49, s. 8; Expropriation Act, R.S.N.S. 1967, c. 98, s. 3; Expropriation Act, R.S.P.E.I. 1952, c. 53, s. 1(a); Expropriation Act, R.S.N.B. 1952, c. 77, s. 2(1); Expropriation Act, R.S.M. 1970, c. E-190, s. 3; Provincial Parks Act, R.S.S. 1965, c. 44, s. 8; Forest Reserves Act, R.S.A. 1970, c. 146, s. 7.

\textsuperscript{37} In British Columbia, for example, Municipal authorities could probably tax reserves in organized areas. See CCH British Columbia Tax Reporter Par. 20-200. However, most reserves are likely to be located in unorganized areas of the province and would be exempt from provincial land taxes under the Taxation Act, R.S.B.C. 1960, c. 376, s. 24(1)(w), as amended, S.B.C. 1966, c. 51, s.2 if owned by a nonprofit organization. In Ontario, it appears that such an organization might qualify under both the Assessment Act, S.O. 1968-69, c. 6, s. 3-14, which deals with organized areas of the province, and the Provincial Land Tax Act, S.O. 1961-62, c. 111, s. 3(1)8, which deals with unorganized areas.

\textsuperscript{38} E.g., British Columbia Hydro and Power Authority Act, 1964, S.B.C. 1964, c. 7, s. 18(6); West Kootenay Power and Light Company Limited Act, 1897, S.B.C. 1897, c. 63 s. 29. In British Columbia alone there are “well over 30,000 bodies or persons who, in theory, have expropriation powers...” Law Reform Commission of British Columbia, Working Paper No. 6, Expropriation (1971), 48.
to the Crown, the mining laws apply and the land could be staked by a mining company.39

MODEL ECOLOGICAL RESERVES LEGISLATION

Although reserves could be created under existing legislation we decided that additional legislation was necessary to provide adequate protection. We decided early in the project not to attempt to actually draft the act. Our principal reason was that each legislature prefers its own style of drafting. Our objective was to provide descriptions of the sorts of provisions that would be required in each province. Examples of certain key provisions were to be drafted merely to give the legislative draftsmen a more precise idea of what we had in mind. What follows is an outline of the essential provisions of ecological reserves legislation.

In order to assure that Canada's ecological reserves program is well coordinated it would seem logical to place reserves under the jurisdiction of the federal government, much like the National Parks. However, since most of the available public land is now managed by the provincial governments, a scheme modelled on the National Parks program would require extensive federal-provincial negotiations every time a reserve is created. This would result in delays in the creation of reserves,40 and these areas must be protected now or be lost forever.

Thus, in general structure, the program will primarily be the responsibility of the provincial governments. Most of the reserves are expected to be created by the provincial governments from their own Crown land. The federal government will play the same role in the territories where it manages the Crown land.41 South of 60 it may play a coordinating role and provide some financial support for the program.42

---

39 E.g., Mineral Act, R.S.B.C. 1960, c. 244, s. 12, as amended S.B.C. 1962, c. 39, s. 11.

40 Negotiations leading to the establishment of the Pacific Rim National Park took over one year, during which time logging companies extracted timber from the area "with the result that some of the land has been completely logged." R. Robinson, Legal Problems in the Protection of Recreation Values (1971), 6 U.B.C. L. Rev. 237 at 246.

41 The Territorial Lands Act, R.S.C. 1970, c. T-6, s. 18 provides:

The Governor in Council may
(a) upon setting forth the reasons for withdrawal in the order, order the withdrawal of any tract or tracts of territorial lands from disposition under this Act;...
(d) set apart and appropriate territorial lands for the use of forest experimental areas, national forests, game preserves, game sanctuaries, bird sanctuaries, public shooting grounds, public resorts or for any other similar purpose;

The steps that would need to be taken to create reserves were considered at length during the Conference on the Arctic International Wildlife Range held in Whitehorse, Y.T., on October 21-22, 1970. Proceedings of the Arctic International Wildlife Range Conference (1971), 6 U.B.C. L. Rev. 1 at 51-58, 89-90. At that conference it became clear that residents of the territories are opposed to the withdrawal of any lands unless it is made clear that they will pass to the territory when it becomes a province. See id., at 90. As a practical matter, this means that the Territorial Councils must be consulted before reserves are created.

42 In general, the Government of Canada should play a leading role in encouraging communication between the provinces. Coordination between the regional IBP panels has been provided by CCIBP-CT. This committee will cease to exist after IBP ends in 1973. At the very least, the federal government should provide the financial support necessary to establish a national coordinating committee to continue the work of CCIBP-CT.
Ecological reserves legislation can conveniently be divided into two separate parts. The first part presented here deals with reserves created on Crown lands. The second part deals with reserve sites located on private lands. This part is essential even in provinces holding abundant Crown land because unique habitats may not exist on Crown land. More specifically, the second part deals with the creation of a charitable trust to acquire and manage land, and conduct ecological research, and the means by which reserves established on private lands might be afforded protection against such threats as expropriation and taxation.

1. Reserves created on Crown Land

The part of the legislation dealing with Crown lands should:

(a) provide for the acquisition, and designation of lands for the program;
(b) provide protection against arbitrary removal of reserved lands from the program, or entrenchment;
(c) exclude the operation of other statutory powers that would be inimical to the program;
(d) create opportunities for coordination of the provincial program with the programs run by other provinces, the federal government, and private organizations;
(e) provide the means for obtaining continuing scientific input for the resolution of questions concerning the management of the reserves; and
(f) provide for the management of the reserves.

Certain of the functions outlined above present no difficult problems. For example, the operation of other statutory powers on reserves can easily be eliminated by an appropriately worded section. A comprehensive, but fairly routine survey of other statutes is all that is required by the draftsman. Section 5 of the B.C. Ecological Reserves Act is typical of the sort of provision that is required:

5. On the coming into force of this Act, any area thereafter established as an ecological reserve under this Act shall be immediately withdrawn and reserved from any further disposition that might otherwise be granted under the provisions of any Act or law in force in the Province, including, without limiting the generality of the foregoing, dispositions under the Land Act, Forest Act, Grazing Act, Water Act, Mineral Act, Placer-mining Act, Coal Act, Petroleum and Natural Gas Act, 1965, Water Resources Act, or Mines Rights-of-way Act.

Section 5 deals with powers of disposition. In addition, of course, it is necessary to exclude or modify the operation of statutes like those mentioned above that may empower public officials to take some action on reserved lands.

43 Ecological Reserves Act, S.B.C. 1971, c. 16. The term disposition is defined very broadly and includes "every act of the Crown...by which the Crown...permits the use of land, mines, minerals, coal, petroleum, natural gas, timber, and water" S.B.C. 1971, c. 16, s. 1(a).

Our project team had the opportunity of submitting a brief to the B.C. Government prior to passage of the Act. See text at notes 66-83 infra. It is a measure of the favored status of B.C. Hydro that only the British Columbia Hydro and Power Authority Act, 1964, S.B.C. 1964, c. 7, s. 18(c), has been left out of section 5.
For example, section 127(1) of the *B.C. Forestry Act*[^44], which gives forest service officials the power to order cutting of insect-infested timber, should not apply to ecological reserves in its current form. Perhaps the best solution in such a case is to require that forestry officials consult with those responsible for the ecological reserves program before taking any action. The other solution would be to exclude the operation of all other statutes. This might have the disadvantage of making it difficult to meet some emergency like forest fire, and therefore might be very unpalatable to government officials.

Our greatest concern, and the greatest concern of the scientists, was how to provide some guarantee of permanent protection, or some entrenchment, for the reserves. Since other land uses like mining often offer much more immediate economic gain there will remain a danger that important areas will be removed from the reserve system whenever it is economically or politically expedient for the government in power.[^45] If this happens long-term experiments could be lost. The scientific and economic benefit of being able to conduct research on sites that have been well studied could be lost. And most important, a unique habitat could be lost.

How much permanent protection to give a reserve is a difficult question. There is a temptation to demand that areas be entrenched beyond the power of one government to remove. This could be done by having the reserves established under a provincial-federal agreement requiring consent of both governments before any areas could be removed.

Our project team believed that this would make the program too rigid. First, circumstances can change making areas less valuable as reserves than when they were created. For example, a forest fire can remove the plant associations that were the *raison d'être* for establishing the reserve. Or subsequent research may prove that the plant association is not ecologically important. Or, other uses of the land may become so valuable that continued use as an ecological reserve is not in the public interest. Second, too stringent protection of the reserves might make it more difficult to create them in the first place. Our interviews with governmental officials indicated some reluctance to create reserves that could be removed only with great difficulty. The officials often cited in support of their position the difficult negotiations that surround the creation of a national park.

Another means of providing relatively permanent protection is to include a statutory declaration that the lands are held in trust for the purpose of ecological research. This simple means of protecting the reserves has been

[^44]: *Forest Act*, R.S.B.C. 1960, c. 53, s. 127(1). For other examples see note 34, *supra*, and accompanying text.

[^45]: The provincial parks program of British Columbia provides some unfortunate examples of this phenomena. By altering park boundaries, the provincial Cabinet has reduced the total park area from 11 million acres in 1945 to 6½ million acres in 1970. R. Robinson, *Legal Problems in the Protection of Recreation Values* (1971), 6 U.B.C. L. Rev. 237 at 244. Mr. Robinson cites other examples including the operation of a mine in Strathcona Park near Buttle Lake and logging in the same park.
used frequently in the United States.\textsuperscript{46} It would have the advantage of impressing on the civil servants administering the program the importance of their responsibilities. More importantly, however, it might open up a means for members of the public to sue in court to protect the reserves if officials became dilatory in their duties.\textsuperscript{47}

Our project team did recommend the adoption of the trust device to the government of British Columbia. However, because this would provide very stringent protection it may be undesirable for some of the reasons discussed above. Moreover, the device is very uncommon in Canada making it unlikely that any Canadian government would accept it\textsuperscript{48} and making it difficult to predict whether the declaration of trust would, in fact, give rise to any public rights of action.

At the other end of the spectrum, we felt that more protection was required than would exist if the minister responsible for the program could simply issue orders removing lands from the system. There would be some protection, of course, because any minister and the bureaucracy under him will fight to preserve his territory.\textsuperscript{49} However, while the agency administering the program can be expected to have powerful territorial instincts, the decision to fight or not fight may often be made on the basis of the strength of the opponent and not on the basis of the scientific merit of the reserved land being disputed.\textsuperscript{50}

Our project team felt that an appropriate level of protection could be achieved by requiring that any decisions to remove lands from the reserve

\textsuperscript{46} See note 25, supra.

\textsuperscript{47} There is some danger, however, that courts would hold that an individual has no \textit{locus standi} to sue to enforce the trust because he has not been harmed any more than any other member of the public. See A.R. Lucas, \textit{Legal Techniques for Pollution Control: The Role of the Public} (1971), 6 U.B.C. L. Rev. 167 at 172 and nn. 23-25.

\textsuperscript{48} The B.C. Government rejected our suggestion despite the fact that the provision we suggested was drawn from another B.C. Act, the \textit{Creston Valley Wildlife Management Area Act}, S.B.C. 1968, c. 14, s. 3(1):

"The Creston Valley Wildlife Management Area is hereby reserved, set apart, and established for the purposes of wildlife conservation, management, and development, and shall be held by the Crown in right of the Province in trust for those purposes."

The project was a joint Federal-Provincial undertaking and the Federal government undoubtedly demanded that the trust provision be included as part of the price for its participation.

\textsuperscript{49} The U.S. Research Natural Areas Program was established without specific legislation. Consequently there is no guarantee of permanent protection. Nonetheless, since the U.S. Forest Service began reserving natural areas in 1928 very few natural areas have been lost. Personal communication from Dr. Robert E. Buckman, Chairman, Federal Committee on Research Natural Areas, during the Conference to Review Research Natural Areas, May 10-13, 1971.

\textsuperscript{50} The point was brought home with some force during a tour of the Persia M. Robinson Research Natural Area, May 11, 1971. The area is the subject of an outstanding and apparently valid Indian claim. During a discussion of the subject not one member of the review committee, which included the top federal officials responsible for the RNA program, could suggest valid scientific reasons for preserving the area as a reserve. Yet, there was general agreement that it would set a very bad precedent to let go of the area without a fight.
system be made by the cabinet after consultation with an advisory committee. This dovetailed nicely with another of our recommendations; namely, that the minister responsible for the ecological reserves program should be required to appoint an advisory committee to aid him in the management of the program. We felt that the committee was needed not only to provide permanency for the reserves, but also to provide the institutional means for resolving the difficult questions that the scientists are still quarreling about relating to appropriate reserve uses and management techniques. To accomplish these objectives, the majority of the committee should be drawn from outside the public service. Its responsibilities should include advising the minister concerning areas for inclusion in the system, scientific research to be undertaken or allowed on the reserves, and any other matters that seem appropriate to the members of the committee or the minister. To further protect the reserves the committee should be empowered to hold public hearings and should be assured, in the legislation, an adequate budget to allow it to publicize the ecological reserves program.51

These provisions should protect the reserves in several ways. First, any decision to remove the lands can be made only after consideration by a responsible, high-level political body. Second, the most favourable case for the reserve will undoubtedly be placed before that body by the advisory committee. Finally, the advisory committee should be in a position to mobilize opinion in support of its view. It could do so in several ways. It could publicize its position by holding public hearings or by issuing press releases and reports. Or, it might prefer to operate behind the scenes and rely on other groups to muster public support for the reserve. Because the community of interested scientists is so small, members of the advisory committee are also likely to be members of professional societies and conservation organizations. When threats affecting the reserves arise they can convey this information to the societies they belong to and a campaign can be mounted in that manner. Finally, individual members can bring pressure to bear on governments by resigning.

The creation of advisory committees seems to be politically acceptable to most governments. Precedents abound.52 Interestingly, little published information exists on how well these agencies actually perform their functions.53 However, from what little is available, and from correspondence with individ-

51 Our brief to the B.C. Government contained no reference to funding of the program because the scientists responsible for IBP-CT in British Columbia asked us not to mention the issue. They had received information from sources close to the government indicating that the legislature would not pass the legislation if it looked like it would cost any money at all. It is worth noting that $20,000 was made available in fiscal 1972-73.

52 E.g., Provincial Parks Act, R.S.A. 1970, c. 288, s. 6; Historic Sites and Objects Act, R.S.M. 1970, c. H-70, s. 16; Provincial Parks Act, R.S.N.S. 1967, c. 244, s. 9; Provincial Parks Act, R.S.O. 1960, c. 314, s. 3(c); Parks Advisory Council Act, R.S.S. 1965, c. 403.

One of the best provisions is contained in Alberta's new Wilderness Areas Act, S.A. 1971, c. 114, s. 2.

53 A rare reference to the subject occurs in a note in the Notre Dame Lawyer. Note: Land Use Controls in Historic Areas (1969), 44 Notre Dame Law. 379 at 397-404. The note describes some of the activities of the Board of Architectural Review of Winston-Salem, North Carolina, and the Historic Districts Commission of Nantucket Island, Massachusetts. Both boards seem to have been quite successful; however, as the author noted, popular support of the board's objectives is vital to its effectiveness. Id., at 400.
duals who have served on such committees, it appears they have been reason-
ably successful. Although on occasion committees appear to have been able to
win head-to-head battles with governments, the more usual, and, over the long
haul, successful appear to have a very low profile. Apparently they gain the
trust of governments and develop a close working relationship. In case of any
serious problem, individuals convey information to outside organizations so the
battle can be fought without jeopardizing the relationship between the govern-
ment and the advisory committee.

The advisory committees should also serve other functions. By judicious
choice of their membership it should be possible to provide the means for
coordinating the province’s program with the programs of other provinces,
the federal government, and private groups. For example, in provinces where
the Nature Conservancy is active one of its members should be appointed to
the advisory committee.

One of the most important functions of the advisory committee will be
providing the responsible minister with advice concerning the program. Among
the questions on which he will need advice are the following: What areas should
be included in the reserve system? What sort of research should be permitted
on the reserves? Should researchers be allowed to conduct destructive
research? Should they be allowed to conduct research on vegetative manage-
ment techniques such as controlled burning? Should the vegetation on the

54 One such example was provided by Harold Miossi, chairman, Morro Bay Parks
Advisory Committee, California. He states that the Committee’s starkest confrontation
with the Parks Department concerned dune-buggy use of Morro Bay Sandspit that was
destroying the vegetation and the dunes. He writes:

“Here I would say our impact was in having continuing meetings and public-
hearings — because we are totally without authority — which actually created
a great panoply of public opinion. This... impelled the Park Administration to
begin closing down the spit.”

55 For example, Dorothy Varian, a member of the Castle Rock Advisory Committee,
California, writes:

“As far as I can judge, our Committee, per se, has little direct influence on the
governmental agencies in Sacramento. Our activities do influence the area manager
and the District Superintendent, and the projects we have generated support the
budget and personnel allocations requested by the District Superintendent... But
I don’t think we, as a Committee, have much weight in major decisions ...
Where we can be influential is through the pressure which can be brought to bear
by the organizations with whom we are affiliated....
Consequently, I believe our effectiveness in influencing legislation or agency policy
decisions depends more on the support the individual committee members generate
outside the committee, rather than by the committee itself.”
Letter to Donald Sperry, July 22, 1971. It should be noted that it is often more important
to influence many “minor” decisions than it is to influence a few “major” decisions.

Mrs. Varian’s letter goes on to explain how motor vehicles were excluded from the
camping areas of Castle Rock State Park due to the Advisory Committee’s influence on
the Superintendent.

56 Some ecological research can be highly destructive. For example, it is sometimes
useful to determine the mass of vegetation in the study area. This might entail removing,
cutting up, and weighing a large tree, roots and all. There are some alternate facilities
for such research. For example, the Canadian Forestry Service operates four Forest
Experiment Stations covering approximately 156 square miles.
reserves be managed. Should the reserves be zoned or classified according to the research activities that are permissible on parts of the reserve. What classifications would be appropriate?

To encourage the formulation of answers to these questions ecological reserves legislation should empower the advisory committee to formulate a management plan for each reserve. The management plan would set forth the purposes for which that reserve was created and the management techniques, such as burning, grazing, cutting, or mowing, that would be used to preserve the ecological features of interest. It might also divide the reserve into zones specifying the kinds of research and educational use that could be undertaken in each zone.

It is envisaged that the minister will set the broad management policy for the reserves with the advice of his committee. The actual management of the reserves should be made the responsibility of some department of the public service. This will involve approving permits for use of the reserves, erecting fences on some occasions, constructing trails, and so on. The most logical candidates are the lands departments and the parks departments. After some discussion, we decided that it would be best to leave this question to the governments of the provinces. There seemed to be little point in alienating potential allies from the very first by suggesting that their department was inappropriate.

As has already been indicated, considerable debate continues among scientists concerning the appropriate uses and means of managing the reserves. Consequently, the legislation must include broad regulatory powers. For example, the regulations should make it clear that the Minister can either allow or prohibit such manipulative techniques as controlled burning on the reserves. Some consideration should also be given to how areas will be selected, acquired, and reserved for research, education, and recreation.

There was general consensus among the scientists we worked with, and among those administering the U.S. Research Natural Areas Program, that a management plan would be necessary for each reserve. The literature is in agreement. See, e.g. E.M. Nicholson, Britain's Nature Reserves (1957) at 20; S.A. Cain et al., "Preservation of Natural Areas and Ecosystems; Protection of Rare and Endangered Species," in Use and Conservation of the Biosphere, Natural Resources Research (1968) X, UNESCO, at 143-53; D. Stamp, Nature Conservation in Britain (1969) passim.

The provisions our research team drafted to meet this need are reproduced supra, note 15.

The issue was the subject of heated debate, both among the members of our research team and among the scientists taking part in IBP. The following points were made: (1) if the reserves are administered by the parks departments the public and the civil servants may confuse them with parks. Consequently, damaging recreational development may take place. (2) The staff of lands departments are trained to think of exploitation of the resource, and are easily available to lobbies working for logging and mining companies. Consequently, the ecological reserves program might not receive effective protection. And (3) the parks departments generally have more experience managing natural areas.

Our research goal never was to draft an ideal act for the creation and management of ecological reserves; it was to get the best act we could enacted. Consequently, much of our research effort was directed at determining what was politically feasible. So far we have met with officials from eight provinces. See infra, note 83. Many of our proposals have been colored by their reactions.

The provisions we suggested to the British Columbia Government are on file at the University of British Columbia Law Library.
if that is necessary, and designated for inclusion in the reserve system. It is assumed that sites will be selected by the management authority with the active participation of the advisory committee. Designation as a reserve could be accomplished in just the reverse manner from removal. Or less could be required. Our discussions with officials of the B.C. Government indicated that they preferred to require the same formalities for both creation and removal of a reserve. Consequently, it seems most likely that the creation of a reserve will require an order of the Cabinet after it has received a report of the advisory committee. If this is the case it would be advisable to give the Minister the power to protect a proposed site temporarily while it is being considered by the Cabinet.

Finally, the legislation should provide some guidance to those administering the program concerning its objectives. The preamble and statement of purposes contained in the B.C. Ecological Reserves Act are particularly good:

WHEREAS the Province of British Columbia is favoured with a wide variation of climate and topography resulting in a multiplicity of biogeoclimatic zones:
And whereas it is considered highly desirable in the public interest to set aside and reserve areas of Crown land representative of distinctive ecosystems for present and future scientific study
And whereas it is the intention of this Legislature that one hundred such areas be selected and reserved for this purpose by the end of the year 1975
Now, therefore, Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows: —
2. The purpose of this Act is to reserve Crown land for ecological purposes, including
(a) areas suitable for scientific research and educational purposes associated with studies in productivity and other aspects of the natural environment;
(b) areas that are representative examples of natural ecosystems within the Province;
(c) areas that serve as examples of ecosystems that have been modified by man and that offer an opportunity to study the recovery of the natural ecosystem from such modification;
(d) areas in which rare or endangered native plants and animals in their natural habitat may be preserved; and
(e) areas that contain unique and rare examples of botanical, zoological, or geological phenomena.

2. **Reserves Created on Private Land**

It is unrealistic to assume that all habitats deserving of protection can be found on unencumbered Crown land. In the southern part of Ontario and Quebec, and in the Maritimes, very little undeveloped Crown land remains. Moreover, in the western provinces some unique habitats are not to be found on Crown land. Consequently, ecological reserves legislation should provide the means of protecting habitats that are on private land.

One means is to give the government the power to expropriate any interests in land for ecological reserve purposes and the power to accept gifts conditioned on use as an ecological reserve. In some provinces these powers already

---

61 See text accompanying notes 50, 51 supra.
62 S.B.C. 1971, c. 16.
63 For example, the B.C. Government was unable to find unencumbered Crown land containing an undistributed sample of yellow pine for some time.
exist. Where they do not they should form a part of any ecological reserves legislation. After land has been acquired by government it can be protected by the legislation discussed above.

However, these provisions are not adequate in themselves. Governments may be quite unwilling to pay out money to acquire a reserve, and some individuals who might be willing to commit their lands to ecological research may, for political reasons, be quite unwilling to donate the land to government. Thus, to increase the probability of creating an adequate number of reserves it is advisable to provide some private means of protecting natural areas. At this time only partial protection is available. The individual can convey his lands to an organization such as the Nature Conservancy, which is committed to the preservation of lands in their natural state. But, as has been pointed out above these lands would be subject to expropriation.

The needs of an ecological reserve program can be simply met by providing an exemption from expropriation for qualified reserves. The word "qualified" is particularly important. Certainly the government would be unwilling to grant a blanket exemption to any lands declared to be held for ecological research or education purposes. Therefore, some means must be provided whereby the government can, after receiving an application from the owner, formally designate privately held lands as ecological reserves if it concludes that they fit within the program. Title and management functions would remain in the owner. The legislation should also provide that lands so designated could not be expropriated unless some appropriate public body found expropriation to be in the public interest after a public hearing. Naturally, such legislation would have to be enacted at both the federal and provincial level.

It may also be advisable to create a Crown corporation like the English Nature Conservancy, to raise money and acquire land. Individuals might be more willing to donate money or land to such an organization than to governments. The organization might be more useful than purely private organizations because it could receive public money and its manner of operation could be specified by the legislature. Donations to such an organization could be made tax exempt. Moreover, as a public institution it could gain more stature and acceptance than a purely private organization.

Perhaps the most important reason for creating a Crown corporation is that it could be given the responsibility of conducting ecological research. Those involved with the Nature Conservancy in England feel that this has been a very vital function performed by the conservancy. Sound management of reserves often requires a greater understanding of ecological forces than now exists. So does selection of sites for inclusion in the reserve system.

---

64 See supra, note 36.
65 The term Nature Conservancy as used here refers to the private, non-profit organizations bearing that name in the United States and Canada. They should be distinguished from the British Nature Conservancy. See supra, notes 18 and 21 and accompanying text.
66 The system being suggested here is very similar to ones being adopted in the United States. See, e.g. 7 Iowa Code Ann. c. 111B (Supp. 1971).
67 See D. Stamp, supra, note 11, passim.
It seems sound to suggest that society will profit most from the creation of ecological reserves if it also creates an institution to conduct and fund ecological research. But why a separate Crown corporation? Why not the department that will manage the government reserves? The answer to these questions is to be found in the nature of the public service. Public servants are under continual pressure to meet day-to-day problems. Only at the highest levels are they free to question established policies and plan for the future. And even when they are, much of their time is taken up by the crises of the moment. The structure of the public service, and the behavior of its members are all products of this way of life. It is hardly the place to expect academic scientists interested in what is sometimes remote speculation about the workings of the environment to flourish. It is far more realistic to create an institution the structure of which can be adapted to the research role it is expected to play.

LEGISLATIVE DEVELOPMENTS

By 1970, the B.C. Government had become convinced that legislation was necessary to provide for ecological reserves, and we were invited to submit a brief. The brief we submitted contained our proposals relating to the establishment of ecological reserves on Crown lands.

To appreciate the circumstances against which our brief was presented, it is necessary to know some of the history of the Ecological Reserves Program in British Columbia. The program was largely the result of the efforts of two men: Dr. A. F. Szczawinski, Botanist of the Provincial Museum, Victoria, B.C., and Dr. V.J. Krajina, Professor of Plant Ecology, University of British Columbia, and IBP regional co-chairman. It appears that over a long period of time they were able, by informal discussions, to interest the Honourable Ray Williston, Minister of Lands, Forests, and Water Resources, in their program.\(^{68}\) As a result a meeting was held in Victoria late in 1965 between Dr. Krajina, the Minister, and Dean J. A. F. Gardner, of the University of British Columbia Forestry Faculty. Shortly after this meeting the Minister indicated his approval, in principle, of the ecological reserves program and promised to put the program into action.\(^{69}\) Further meetings were held in 1966 and 1967 and areas were surveyed for possible inclusion in the reserve system. Most of the field work was done on a volunteer basis by university scientists or government scientists who happened to be in the area of one of the proposed sites. In 1968 a committee was established containing members of government and some of the scientists. It was chaired by David Borthwick, Deputy Minister of Lands. From that time the committee has developed policy for the program, made recommendations concerning which areas should be included, and so on. These proposals have been carried forward to the Minister by Mr. Borthwick who has taken over the day-to-day management of the program. The first reserves were set aside in spring of 1969. At this writing 43 reserves have been created.

The first reserves were established by what B.C. officials called a "map reserve". Essentially, the areas to be reserved were simply outlined on the

---

\(68\) Personal Communication from A.F. Szczawinski.

\(69\) Fifth Rept. on the National Research Council International Biological Programme, No. 8-1-68 (British Columbia) (Jan. 25, 1971) (copy on file at University of British Columbia Faculty of Law).
department of lands maps and labeled “reserved”. Although there was no legislative authority for this procedure it was the department’s practice to refuse subsequent requests for other dispositions of lands reserved in this manner.

The system used in British Columbia demonstrates quite clearly that a program like the ecological reserves program can be started without specific authorization. The events in British Columbia very closely parallel those in the United States where a well developed ecological reserves program is in existence. Like the B.C. Program, the program seems to have been the result of the efforts of a few men. In this case they were officials of the government. They were instrumental in convincing the Secretary of the Interior that reserves should be created. An interdepartmental committee was created, and reserves were established. The following is the explanation offered for the legal authority of the program:

The National Park Service, through the Secretary of the Interior, is charged with the responsibility of maintaining the natural integrity of national parks and national monuments for the benefit and enjoyment of this and future generations. The legal basis of this responsibility is found in specified acts establishing individual areas and broad acts such as the Antiquities Act of 1906; the National Park Service Act of 1916; the Historic Sites Act of 1935; the Wilderness Act of 1964; and the Environmental Quality Act of 1969. The above acts have been reinforced by the ... convention between the United States of America and other American Republics entitled "Nature Protection and Wildlife Preservation in the Western Hemisphere".

Neither program has received any funding during its development.

Not surprisingly, after a program such as the ecological reserves program is started it gathers its own head of steam. At a meeting held in Oregon in 1970 to review the U.S. Research Natural Areas Program much of the discussion centered on legislative authorization and funding for the program. When the Land Act of British Columbia was re-enacted in 1970 it contained a provision authorizing the map reserve.  

---

70 Personal Communications. The reserves were apparently created by order of the Deputy Minister of Lands after the action had been approved by the Land Use committee of the Cabinet. Letters were sent to Dr. Krajina advising him of the action and, if the land was surveyed, letters were sent to the local Land Commissioner advising him of the Reservation.

71 See, supra, note 20 and accompanying text.


74 Glasgow’s letter to the Hon. H.M. Jackson, supra note 73, also points out the need for funding and legislative authorization for the program.

75 Land Act, S.B.C. 1970, c. 17, s. 12:

"The Minister may, for any purpose that he considers advisable in the public interest, withdraw Crown land from disposition under this Act, and he may amend or cancel such disposition."
Against this background we submitted a brief early in 1971 to the B.C. Government calling for ecological reserves legislation along the lines outlined above. The brief did not contain any references to funding because our "clients" were afraid that it would scare the government off. Nor did it contain any provisions relating to the creation of reserves on private land.

The legislation that was enacted bears some similarities to the legislation we proposed but is much more simple in design. After a preamble and definition section the Act contains a section stating the purposes of ecological reserves. This is followed by two sections allowing the Cabinet to establish reserves or remove lands from reserves. Section 5 removes reserved land from any dispositions under other acts. Section 7 gives the Cabinet the power to make regulations, and section 9 gives the Minister the power to appoint an advisory committee.

The act differs from the model we proposed in two important respects. First, it does not require the appointment of an advisory committee and, consequently, does not require the Cabinet to consult with the advisory committee before lands are removed from the reserve system. Thus, the legislature declined to provide even the modest assurance of long-term protection that would have been afforded by the advisory committee's ability to marshal arguments and opinion in favour of retention of reserves that become threatened by more immediately profitable uses. However, it should be pointed out that an advisory committee was established and that a majority of its members are drawn from outside the Public Service.

The second respect in which the act differs from the proposal presented to the government is that the power to issue regulations under the act is less restricted than the power proposed in our brief. The limitations contained in

---

76 Ecological Reserves Act, S.B.C. 1971, c. 16, s. 2. The provision is reproduced in the text at note 62, supra.
77 S.B.C. 1971, c. 16, s. 3:
The Lieutenant-Governor in Council may, by notice signed by the minister and published in the Gazette, establish ecological reserves of Crown land.
S.B.C. 1971, c. 16, s. 4:
The Lieutenant-Governor in Council may, by notice signed by the minister and published in the Gazette, add to, or cancel in its entirety, or delete any portion of an ecological reserve established under section 3.
78 S.B.C. 1971, c. 16, s. 5. The provision is reproduced in the text at note 43 supra.
79 S.B.C. 1971, c. 16, s. 7.
80 S.B.C. 1971, c. 16, s. 9.
81 See text accompanying notes 45-55 supra. However, it should be pointed out that an advisory committee was established and that a majority of its members are drawn from outside the Public Service. The committee has not yet met officially, but a larger working committee that has existed on an ad hoc basis since the program began continues to hold meetings.

The committee includes representatives from the following governmental agencies: B.C. Forest Service, Department of Lands, Department of Water Resources, Department of Recreation and Conservation, and the Department of Mines and Petroleum Resources. In addition it includes: two ecologists from the University of British Columbia; a law professor from the University of British Columbia; an ecologist from the University of Victoria; an ecologist from Simon Fraser University, and a representative of the Council of B.C. Forest Industries.
the brief were intended to encourage the formulation of a management plan for each reserve and to assure that the advisory committee would be involved in its formulation.\textsuperscript{82}

CONCLUSION

The International Biological Program has had some successes in Canada. Legislation has been passed in British Columbia and reserves are being established. Reserves are also being established in Ontario and Quebec. Active discussions between IBP representatives and government officials are taking place in other provinces, and it seems reasonable to hope that these will lead to the creation of ecological reserves in some of these provinces. In the process, university ecologists and government officials have established contacts with each other that are bound to have beneficial effects beyond the International Biological Program.

However, the reactions of both public servants and industry representatives to IBP indicate that much more must be done to assure the success of the program.\textsuperscript{83} Indeed, they warn that dangers may be ahead for our national parks program. For example, many of the provincial officials and industry representatives whom we interviewed seemed hostile to the national parks program. In discussing ecological reserves programs they often expressed the fear that such programs would, like the national parks program, withdraw large blocks of land from use by natural resources oriented industries. They strongly favoured multiple-use management strategies to those now followed by our National Parks Service. Substantial support for this viewpoint was also found within the National Parks Service itself.

As sources of energy and building materials become scarce demands for multiple-use management strategies for our National Parks are bound to increase. Moreover, few of the public servants we interviewed seemed to recognize the need for excluding exploitive uses from a small area to preserve some wilderness for recreation, research, and education.\textsuperscript{84} What are the prospects for ecological reserves programs and even for our national parks program? It would seem that unless more is done to convince the public of the values of wilderness preservation the prospects are not bright.

To appreciate fully the biases of existing land and resource management policies it may be helpful to examine the response to IBP more closely. The demands being made by IBP are trivially small. The National Parks occupy less than one percent of the total land area of Canada, and ecological reserves pro-

\textsuperscript{82} See supra, note 57 and accompanying text.

\textsuperscript{83} These impressions are based on interviews with government officials in the following provinces: British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia, Ontario, Prince Edward Island, Quebec and Saskatchewan. Our visits to each province were usually several days in length, during which time we had the opportunity of meeting with the local IBP committee and with the Deputy Ministers charged with responsibility for natural resources and parks.

\textsuperscript{84} The danger in multiple-use management strategies is that industry always has better access to the ear of the resource manager than recreationalists by virtue of the fact that it is better organized. Therefore, multiple-use management of a park may easily become management for industry. See R. Robinson, \textit{Legal Problems in the Protection of Recreational Values} (1971), 6 U.B.C. L. Rev. 237 at 242-46.
grams proposed by IBP are estimated to require somewhere between 1/100 to 1/10 of the land area now set aside as National Parks. Yet, even in British Columbia where legislation has been passed and forty-three reserves have been created, IBP is meeting heavy opposition. Mineral interests argue that either reserves should not be created until the underlying mineralization is determined or the reserves should not be closed to exploration. On the face of it, the argument seems reasonable enough. Obviously it would be beneficial to know all the uses of land before it is committed to one use. However, in the process of finding out what mineralization exists its potential for ecological research is likely to be disturbed. Moreover, determination of the mineral potential of the site may be expensive and very time consuming. In the meantime the site is available for all other uses, many of which could be highly destructive. The only workable alternatives are either not to allow mineral exploration at all or to allow it under tight regulation that will prevent harm to valuable experiments or the ecological features that the reserve was created to protect. However, since even the latter alternative means that in some cases exploration will be impossible or very expensive, mineral interests object.

Lumber interests have been less hostile. In fact, the Canadian Institute of Forestry, a society mostly made up of professional foresters, adopted a resolution at its annual meeting in October, 1971, encouraging the reservation of a number of natural areas representing examples of all significant forest and forest-related vegetation in Canada. However, other interests within the lumber industry do not agree. As the British Columbia program moved into its second year under the Ecological Reserves Act, IBP requested reservations of sites that were more remote than those it was able to survey during its first year of operation. These tended to be larger than those requested earlier and some included stands of timber of commercial quality. IBP's requests were opposed vigorously by the Council of Forest Industries and were sharply trimmed. As a result very little timber of commercial quality has been included in ecological reserves. The largest reserve created during the second year is reported to be about 2,000 acres, about twice the size of Vancouver's Stanley Park. If ecological reserves programs are to be successful it will eventually be necessary to create some reserves of about 10,000 acres in order to preserve some entire watersheds or other ecological units.

It seems, therefore, that land and resource management policies will continue to favour established exploitive uses for some time in the future, not merely to the extent that more land area is committed to these uses than to other uses, but to the extent that exploitive uses have first and preemptive call on all parcels of land. This is not sound policy. To assure that wilderness, research, and educational resources are preserved for the future, areas must be set aside where these uses are given top priority. To help achieve this objective scholarly work in Canada must be focused more sharply on the values of wilderness preservation. Lawyers and legal scholars can, and must, assist by examining the biases of the legal system, by helping to overcome these biases by providing assistance to groups like IBP, and, most importantly, by revealing and interpreting these biases to the public.

85 The National Parks Program has accomplished this objective to some extent for recreational and educational uses. However, see text accompanying note 84, supra.