

Of Conservation and Mysticism, Democracy and Things

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In its original concept this article was to be a review of events affecting conservation in the north in the decade since the Tundra Conference (Fuller, & Kevan 1970). Resolutions of the Tundra Conference urged international cooperation in research, inventory and management of resources in circumpolar regions; the setting aside of research areas; protection for threatened species of vertebrates; broadening and strengthening of ecological research in Canada; and attention to legitimate needs and aspirations of northern natives. In a message read at the opening session of the Conference the then Minister of Indian & Northern Affairs, the Honourable Jean Chrétien, referred to new regulations pertaining to land and water, and to a "broad program of hydrological and ecological research". He also expressed the hope that he would be able to establish new National Parks in northern Canada, set aside areas for long-term research (ecological reserves), and expand the research activities of the Canadian Wildlife Service. This, then, provides a framework for discussing recent developments in research on and management of renewable resources, and protection of lands and waters from exploitation. However, in my view, the really exciting developments, in Canada at least, have been in public awareness of environmental issues and our treatment of indigenous peoples. The recent publication in this Journal of Ritchie's polemic (Ritchie, 1978) that applauds increased awareness but deplores the method by which it was accomplished provides me with another platform. Since I consider this issue of overwhelming importance, I intend to devote most of this article to it.

For some time now I have been in the habit of exposing what I conceive to be my own biases before making pronouncements on environmental issues, and I propose to follow that course here. In general, I think it naive to believe that we will soon if ever achieve unanimity of opinion on complex issues such as environmental problems. I therefore respect the right, even the duty, of those whom I consider to be wrong-headed to express their views so that those views can be examined and tested in the broadest possible intellectual context. It follows from this that ideas that are found wanting, like hypotheses that fail experimental test, ought to be discarded, but it does not follow that the authors of those ideas are necessarily knaves or charlatans. I thus reject much of what Ritchie has to say without rejecting Ritchie. Indeed, I share his taste for malt Whiskey. I also admit to being the member of a Task Force who "was unfamiliar with either the tundra or the nature of seismic techniques". However, the radio interview to which Ritchie referred made neither a lasting nor a painful mark on my memory and I expect it had even less impact on the

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audience. In any event I cannot now refute the charge of "excitable babbling", nor do I consider it a matter of great import to do so. On the other hand, I steadfastly refused all invitations to become a consultant, and my modest scientific endeavours have been continuously supported by peer-reviewed grants from impeccable sources. I imply no value judgment about those of my colleagues who became consultants, but I disassociate myself from "the eager mediocrity of academics who have been, or should have been, deprived of research funding from the government agencies".

What, then, are some of the important events of the past decade?

On the research front the International Biological Program managed to carry to a successful conclusion studies in the high arctic of Canada, in the low arctic of Alaska and the U.S.S.R., and in alpine tundra in Scandinavia. The Devon Island and Char Lake studies in Canada resulted in hard data and preliminary models of one terrestrial and one freshwater ecosystem (Bliss, 1977; Rigler, 1974). I think no one would claim that they are the last word in either arctic or ecosystem studies but they have earned for Canadian biological science a measure of international respect, and they provide a base, and important lessons, for future systems-oriented research. It is indeed unfortunate that the Man and Biosphere program (MAB) failed to heed the lessons of IBP and has accomplished so little under the rubric of its northern research program both in Canada, and as far as I am aware, elsewhere. The high arctic studies confirmed what the Inuit, as demonstrated by their absence from the high arctic, already knew — productivity is low and will not support large harvests.

An international research effort aimed at providing a better understanding of polar bears was just getting underway in 1969. The research program is still in operation, and is now supported by an international treaty concerning their use and protection. Although the Tundra Conference can claim no credit for its conception, the entire program is in accord with the Conference Resolutions.

The ecological research program promised by Mr. Chrétien was christened the Arctic Land Use Research Program (ALUR). It was and is oriented toward applied research and has been a mixed bag. Some of the early studies were either largely irrelevant to land-use problems or so superficial as to be meaningless. Having served a term on the ALUR advisory committee along with Jim Ritchie, I can affirm that Jim probably did more than any other individual to raise the level of sophistication of ALUR projects. Since ALUR reports have been published (ALUR Reports) further discussion on my part would be superfluous. I would however add my vote for continued support for the land-use information map series which has assembled a great deal of information, albeit fragmentary in many cases, and made it readily available to both industry and land-use managers.

Perhaps the most controversial issue in the north has been, and continues to be, management of renewable resources, particularly animal populations. Management of northern wildlife, including fisheries, still suffers from two defects — lack of basic biological information and inadequate harvest

statistics. This statement is fully documented in three soon-to-be-published reviews commissioned by the Science Advisory Board (SAB) of the NWT. (These reports will be available from The Executive Secretary, P.O. Box 1617, Yellowknife, N.W.T.). "Pure" research, aimed at understanding processes, is conspicuous by its scarcity. I lay the blame for this sorry state of affairs at the door of the federal government on two accounts. On one hand, the Canadian Wildlife Service, far from playing an expanding role in wildlife research as promised by Mr. Chrétien, has been shuttled about from one department to another and starved of funds by the current "make or buy" policy of the federal government. On the other hand, support for university research has failed even to keep pace with inflation so that academics have had great and increasing difficulty in sustaining northern research programs in biology.

Of course, a great deal of money has been spent on applied wildlife "research" in connection with environmental impact assessments. As Ritchie pointed out, most of that effort went into determining how many animals occurred where and when. But we still do not have adequate answers to these apparently simple questions. Where the data lend themselves to statistical analyses at all, confidence limits are so wide as to render the estimates virtually useless for management purposes. Furthermore, the bulk of this work has not been published in the open literature where it can be subjected to critical review.

When the uncertainties of inventory are combined with inadequacies in harvest statistics, it is impossible to say with any confidence whether or not any stock is being overharvested by man. There are suggestions that this is so in the available records — the reported harvest of moose, for example, has undergone a steady decline over the last 15 years — but in the absence of indisputable evidence, hunters are loathe to accept restrictions on their activities. The present state of wildlife statistics is simply intolerable and makes a mockery of attempts to manage the resource.

Conservation of ecosystems as entities has benefited from two kinds of action. First, three large national parks (Kluane, Nahanni, and Auyuittuq) have been established in accordance with the hope expressed by Mr. Chrétien. In addition, several "northern national park reserves" have been withdrawn from alienation pending further study and evaluation, which will likely result in some at least of them eventually attaining a modified national park status. Although exploiters and potential exploiters will not agree, from the conservation viewpoint these two events are large and colorful feathers in the caps of the responsible ministers of Indian and Northern Affairs, primarily Messrs. Chrétien and Faulkner.

Second, the conservation of terrestrial communities (CT) subcommittee of IBP identified and described a series of sites worthy of conservation (Beckel, 1975; Nettleship and Smith, 1975) which Ritchie characterized as ". . . two disappointing catalogues of suggested reserves . . . superficial, uneven descriptions . . . with no attempt to propose management plans for those critical sites where conflict already exists or is pending." In my biased view

this totally negative attitude does a disservice to the devoted band of volunteers who carried out the surveys and have continued to defend the sites in the face of the conflicts foreseen by Ritchie. The CT subcommittee did not lightly take the decision to devote its limited funds and manpower to survey and description, and to working toward legal protection of sites, rather than to drawing up management plans. The logic of this approach is straightforward. Why devote scarce energy to drawing up management plans for an area that may never become a legal reserve? Philosophically, it is by no means certain that even the most rigorous studies lead to conservation in the absence of a political will based on the value judgment that conservation is a "good" thing. Mr. Chrétien and his successors have yet to make good on the promise of legal protection except for one site, but operationally, it is necessary to point out, proposed IBP reserves have *de facto* recognition, and additional legally protected reserves are likely to result from land claims negotiations now in progress.

I pass now to the topic of public awareness, and draw two examples from Canadian experience. The first is the formation of public interest groups, especially the Canadian Arctic Resources Committee (CARC), which has played the most prominent role. CARC really got underway with a workshop at Carleton University in 1972 and wound up its first phase with a second workshop in Edmonton in February of 1978. Proceedings of both workshops and a series of case studies illustrating resource conflicts have been published. Transactions of workshops (Arctic Alternatives 1973; Northern Transitions, 2 vol. 1978) and research reports are available from CARC, 46 Elgin St., Ottawa. In addition, CARC has sponsored studies and single-topic workshops, provided resident advisers for native groups, and regularly published "Northern Perspectives", a newsletter with articles on topics of current interest.

The second event, one that aroused widespread interest in Canada and abroad, was the Berger Inquiry and its subsequent two-volume report (Berger, 1977). Almost everyone agrees that the hearings themselves and publication of Volume 1 of the report were significant events. But significant for what? For promoters, a dashing of hopes; for natives, a raising of hopes; for local politicians, a setback in plans for increased political autonomy; for some scientists, a rejection of scientific expertise; for Ritchie, if I read him right, a threat to western philosophic and democratic traditions. My own views are on record (Fuller, 1978) and, in any case, will become apparent later on.

The responses of industry, natives, and politicians were predictable since they were based almost entirely on self-interest, but those of many scientists, especially Ritchie, are worthy of further analysis. That many scientists abandoned reason and indulged in unsubstantiated accusation is illustrated by the following quotation. Since this example is in no sense unique among the outpourings of scientists with bruised egos, but is merely one of many, I do not reveal its source.

“A special session was convened in which the caribou experts of North America were asked to explain the details of caribou ecology to the [Berger] inquiry. It became evident through their testimony that there was little agreement, and in consequence *few real facts were presented* concerning the estimated impact on the herd of building a pipeline . . . *the Judge was left to draw his own conclusions from a confused and unsubstantiated set of assertions* regarding such impacts . . . since the experts did not settle the issue of which is more critical — spring calving grounds or winter range — the Judge decided in favour of spring calving . . . although these data [of three investigators] are only limited *they clearly show* that Justice Berger significantly overstated the case against a coastal route based upon caribou” (emphases added).

The author of these remarks goes on to claim, without presenting a shred of substantiating evidence, that this decision was motivated politically, presumably in the sense of partisan politics. Would the author, and others like him, have been equally disturbed had Judge Berger decided in favour of the coastal route on the basis of the same conflicting advice? Or if he had rejected both Yukon routes on the grounds that the experts had convinced him that winter range and calving grounds were *both* essential to the future welfare of the Porcupine caribou? Surely the onus must be on the exploiters to prove “beyond a reasonable doubt” that their activities will be benign. This they clearly failed to do unless “a confused and unsubstantiated set of assertions” is accepted as sufficient proof. How then to account for the author’s reactions? Reason? Emotion? Prodevelopment bias? Political bias?

In fact, Judge Berger based his decision in part on his own assessment of the probability that the gas pipeline would be an isolated event, or merely the forerunner of other possible developments such as an oil pipeline. By steadfastly refusing to view the gas pipeline in isolation Mr. Berger incurred the wrath of those who adopted the problem-solution and never-mind-the-side-effects approach typical of the engineer. That ecologists, especially community ecologists, who are trained to think in terms of systems, should join the chorus of critics disturbs me.

The Oxford English Dictionary defines political in part as “of public affairs”, thus the decision was clearly political in a broad rather than a narrowly partisan sense. But we need to go beyond a dictionary definition. According to a political scientist (Ophuls, 1977) “ultimately politics is about the definition of reality itself” and “politics is the art of creating new possibilities for human progress”. Furthermore, one can differentiate between political systems in which “ends are subordinated to political means” (process politics) and those in which “means are subordinated to predetermined ends” (systems politics). The distinction is perhaps sharpened in the following quotation:

“As the name implies, process politics emphasizes the adequacy and fairness of the rules governing the process of politics. If the process is fair then . . . the outcome is assumed to be just — or at least the best

that the system can achieve. By contrast, systems politics is concerned primarily with desired outcomes . . ." (Ophuls, 1977)

Judge Berger's mandate was to fiddle with the rules (this he did in Volume 2 of his report.) He was pilloried because he questioned outcomes. Jobs for natives or justice for natives? What kind of north do we want? As a nation, should we continue to pursue the impossible dream of infinite growth and development or is it time to begin thinking about a new paradigm?

But even Mr. Berger did not ask two very significant questions. How much energy are we being asked to give up temporarily? And would a Mackenzie Valley Pipeline provide more energy for Canada's future than some alternative way of investing ten billion dollars (or more)? The answer to the first question seems to be about one year's total energy supply, or an amount about equal to what was flared, and thus wasted, with no concern on the part of industry, in the Turner Valley field (Gray, 1969). My own guess is that the answer to the second question is "No" unless large supplies of gas are found beneath the Beaufort Sea.

At the risk of doing an injustice to Ritchie's thought-provoking article by oversimplification, I suggest that his basic concern is set out in the following sentence: "But there are more basic flaws in the pipeline inquiry exercise, and perhaps they are expressions of a deviant trend in western society as it confronts environmental problems". He then identifies four influences that he thinks indicative of our social malaise.

First he blames modern communications technology for distortion and overdramatization "so that sober, considered judgment became impossible". The "cautious" and "tentative" conclusions of the "northern expert" did not receive the coverage of the more extreme statements made by those who shot from the hip. Two things bother me. First, the implication is that only so-called environmentalists and not the promoters ever shot from the hip. Second, if the experts can form only tentative conclusions, or none at all, as in the quotation used earlier, how should we proceed? Is it the part of wisdom to act now and hope that all will be well in the end, or should we delay our decision until the experts *can* offer a definitive opinion? In urging delay, Berger opted for the second, essentially conservative approach. Two years have now elapsed. One would like to think that northern experts are busily at work finding definitive answers to the questions that were unsolved two years ago. I see precious little evidence that this is the case. Where does the responsibility for this failure lie? With the promoters? The government? The northern experts? The environmentalists?

Second, Ritchie sees mythology, variously expressed, replacing science. I cannot agree with Ritchie's condemnation of environmentalists for ignoring "agony in stoney places" close to cities while coming to the defence of a northern wilderness that many know "only in their imagination". An extension of this argument would condemn those Torontonians who returned credit cards to Imperial Oil in protest against Village Lake Louise, even though they knew Lake Louise "only in their imagination", and even while gravel pits were destroying their own backyard. Part of the answer, I think, is

that destruction by small increments either goes unobserved or is unopposed because of the overwhelming number of examples that confront us almost daily. Observe, for example, the incremental development of the Lake Louise area that will ultimately accomplish most of what Village Lake Louise set out to do, but which presents no focus for concerted attack. Large-scale proposals cannot go undetected and they serve as such focal points. On a more subtle note, if, as seems highly probable, man is unique among living organisms in his ability to imagine unexperienced landscapes, I find nothing to condemn in those who, by the exercise of their very humanity, come to the defence of places they know "only in their imagination".

Ritchie's third point is the charge that "some colleagues in ecology" have made excursions into "social philosophy, metaphysics and mysticism" in defence of wilderness. He supports this argument with quotations from the philosopher Passmore (Passmore, 1974) without revealing Passmore's self-admitted biases — namely that he is a "human-chauvinist" who believes that mankind's only lasting memorial is civilization, specifically Western civilization. Small wonder that Passmore has little time for defending wilderness for its own sake, or for those who bolster their arguments with reference to non Western systems of belief! But this is not meant to imply a blanket rejection of Passmore who has indeed a great deal to tell us including some philosophically acceptable arguments for defending wilderness.

Ritchie asks what I take to be a rhetorical question — "Does this holistic rather than the atomistic scientific view provide any special insight into these issues?" I think this question must be considered on two levels. First, is the level of scientific methodology, and second is the operational level of solving problems in the real world. At the conceptual level, I suggest that holism and atomism are both necessary to the advancement of science and that neither is sufficient unto itself. In a recent work, an historian of science (Worster, 1977) has traced the interplay of holism (which he called organicism) and atomism (which he called mechanism) in ecology from Gilbert White to the present, and has shown that now one, now the other, has had the ascendancy. Conservationist ideas, however, have nearly always been associated with the organicists. At the operational level, both Ritchie and Passmore agree that holism is a *sine qua non*. The most important recommendation of the Task Force to which Ritchie alluded was that the Mackenzie Delta and its surroundings be the subject of a holistic study that would integrate people and resources, and Passmore (cited by Ritchie) clearly sees the need for holism — "the joint efforts of scientists, technologists, economists, statesmen and administrators" — all of whom come into action after the philosopher has "cleared away the rubbish" that impedes logical thought. But someone has to take the lead, and surely few of us are so naive as to believe that administrators or statesmen, who traditionally lead from the rear, are about to fulfil that role. Galbraith (1968) has shown with devastating clarity that traditional economics, to which most practicing economists still adhere, is based on assumptions that are demonstrably false, yet we continue to accept economic determinism. Technologists, it seems to me, solve problems posed

by others — they do not raise problems themselves, and they gloss over as “side effects” second order problems created by their solutions. This appears to leave only scientists, presumably ecologists, in the case of ecological problems, to play the leading role.

Although all of the foregoing points raise questions that radiate outward from the north, it is Ritchie’s fourth ingredient that carries the broadest implications of all. Are we really preoccupied with the “isolated present”? Are the “traditional [presumably representative] democratic techniques of formulating public policy . . . inadequate”? Ought we to reject participatory democracy? Is politicization unhealthy? I do not pretend to have answers to these heady questions, but I am sceptical of the view that ‘a hair of the dog that bit you’ is an adequate prescription for an ailing environment.

There is a growing literature on the need to find a new economic paradigm (Daly, 1973). In the political realm Ophuls (Ophuls, 1977) concluded that

“the most important prerequisite for constructive change is a *new world view* based on, or at least compatible with, the realities of the human ecological predicament . . . current political values and institutions are the products of the age of abnormal abundance now drawing to a close [the isolated present?] so that solutions predicated on scarcity would necessarily conflict with them” (emphasis added).

In almost direct conflict with Passmore, Ophuls urges that we adopt good ideas from any source and not restrict ourselves to the Western tradition. Furthermore, participatory democracy is not a new phenomenon but is fully consistent with Western tradition as the following quotation attests (Stavrianos, 1976).

“The major result of these [English, American, French] revolutions was that the people now not only participated in government but also considered it their inherent right to do so. This participatory impulse, *which has been a distinguishing feature of western civilization from its early medieval origins*, is today a central feature of the emerging new dark age . . . the long historical process of popular awakening is now reaching its culmination with the twentieth century demand for self-management in all phases of life” (emphasis added).

In direct refutation of Ritchie’s condemnation of modern communications Stavrianos goes on to say “thanks to modern mass communications media, this tendency is appearing all over the globe, in varied forms reflecting local conditions and traditions.”

Obviously, like Ritchie, I have ventured beyond my professional depth in discussing these questions, but I do so to demonstrate that not all non-scientists are unanimous in their praise of Western traditions and that there is a considerable body of opinion that holds that our current models of democratic societies are not necessarily the only, or even the best, that man is capable of inventing.

I conclude by asking “What have we learned?” Has anything really changed as a result of the Tundra Conference and the events of the past decade. Drilling for hydrocarbons continues, not only on land and man-made

islands, but from drill-ships in the Beaufort Sea, and by the time this goes to press the first off-shore well in Lancaster Sound may well have been spudded. The hazards and risks of off-shore drilling in arctic waters were discussed by Pimlott *et al.*, 1976). That their concerns were not just academic has been confirmed by Dome's experience in the Beaufort Sea — uncontrolled escape of salt water mixed with some hydrocarbons from wells drilled in 1976, and forced emergency abandonment of one well in 1978 in the face of an unexpected storm. Almost no one doubts that a blowout involving oil (but not necessarily gas) would have disastrous consequences for arctic marine life and for the physical environment. We accept such high consequence risks in other contexts almost daily if the probability of their occurrence is low enough, and if we are the direct beneficiaries. The probability of a disaster in the arctic is difficult to estimate. The industry insists that the chance of a "serious oil blowout" is less than one in a million, whereas experience in the North Sea apparently resulted in one blowout (not necessarily "serious" or involving a release of oil) for every 200 wells drilled, and 25% of the wells spudded in the Beaufort Sea have resulted in "uncontrolled flows" (=blowout) (This question is addressed in a submission by Canadian Arctic Resources Committee to the Environmental Assessment and Review Process hearings into the application of Norlands Petroleum Ltd. to drill an exploratory well into Lancaster Sound. The CARC submission is summarized in *Northern perspectives* Vol. 6 No. 8, 1978.) Furthermore, there is clearly a separation of risk from benefit in this case. Society in general, but especially northern peoples are exposed to the risks without any chance of sharing directly in the spoils should the gamble pay off. There are thus serious reasons to question whether the probability of disaster is acceptably low to those who are most at risk, but we carry on, presumably because we still believe that we can extend the petroleum age indefinitely. Ostrich-like, we refuse to accept the inescapable conclusion that if we continue to use energy at an exponentially increasing rate no new finds of hydrocarbons can give us more than an additional decade or so of breathing space before we must turn to other sources.

In spite of the warning transmitted to us by Mr. Justice Berger, every political party in the recently completed election campaign committed itself to its own version of restoring a "healthy" rate of growth to the Canadian economy. Since economic growth means, in the final analysis, speeding up the rate at which resources are converted into wastes, all growth-oriented policies are the very antithesis of conservation, whether in the arctic or elsewhere.

The Berger inquiry, with its open, informal format was succeeded by a return to secrecy in the form of the Drury Inquiry, which had terms of reference that specifically excluded public hearings. If anything came of the latter exercise, it is known only to a select few, and in any case, it is unlikely to carry much weight with the new administration in Ottawa.

The human population of the north, also following the exponential imperative, is doubling at a rate considerably faster than the world average, but local spokesmen and well-meaning southerners still insist that there is no

foreseeable limit to the ability of renewable resources to support the increasing numbers. In short, the north is a microcosm in which limits to growth are especially easy to discern, yet we refuse to face up to that reality.

I close on a biological theme, with the hope that Darwinian thinking may yet penetrate the corridors of parliament, the boardrooms of Bay Street, and the minds of citizens at large.

"I suggest that the true Darwinian spirit might salvage our depleted world by denying a favorite theme of Western arrogance — that we are meant to have control and dominion over the earth and its life because we are the loftiest product of a preordained process."
(Gould, 1979)

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