The Conservation Movement's Ethic and Praxis:

The Heart, Mind and Soul of Ontario's

Fish and Fisheries Policies and Practices since 1867, or Earlier?

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In 1922, within Publication No. 1 of the Ontario Fisheries Research Laboratory, OFRL, Series, UofToronto Professor Benjamin Arthur Bensley included the following paragraph:

The distinction often made between theoretical and applied or economic considerations is generally recognized as purely a matter of convenience in description. There is, however, a relation between investigation of an economic kind or purpose and practical or administrative measures. In Canada, as elsewhere, various questions, partly of revenue, partly of control of exploitation of natural resources, wastefulness, and many other measures having to do with natural wealth, gave rise long ago to regulative measures, and more recently to a public movement in the direction of conservation. More intricate perhaps than in other fields, because of the elusiveness of wild life and the obscure factors upon which the success depends, the problems of conservation as applied to living resources were recognized as involving scientific knowledge of an exact kind. .... Measures of conservation as applied to the fisheries, including under the term also regulatory legislation, which has or ought to have a similar effect, consist broadly in striking a reasonable balance between forces of exploitation and those of natural and artificial replacement. ... Its value [i.e. of scientific investigation] consists in the analysis of all factors physical, chemical and biological, and drawing in attention to particular factors the neglect of which may result in ineffective practice or futile legislation.

B. A. Bensley then provided a review of earlier research, implicitly in aid of the Conservation Movement related to fisheries, in North America and in Europe.

Please note Bensley's use of the term 'economic'. I infer from the context of the present paragraph and as used elsewhere in his 'plan' that he includes much more than quantitative financial values in the term 'economic'. "Economy", as in the "economy of nature" was even used back then in a way that we might now use "ecology", or "ecogeny" in my own case.

Note also the "balance between forces" that Bensley invokes implies "sustainability", I infer. The literature about fisheries in our GLBasin, especially during the first half of the 20th Century, often includes discussions about "balance". When one applies hermeneutic analytical skills to such text a conjecture may emerge that the term is a code word for an ethic and praxis of the Conservation Movement.

In a 1928 booklet titled "The Game Fishes of Canada" B. A. Bensley ended his introduction with the following paragraph:

Of late thoughts of a graver kind have come to us. Will the great fishing areas of Canada withstand the drain of excessive fishing. Many signs are in evidence that they will not. Fortunately, Canadian waters generally, and with few exceptions, still abound in game fishes, so that only thoughtlessness or indifference can do much damage for perhaps years to come. Fortunately also, throughout North America, the lesson of the "fished out" water has been well learned. The intelligent sportsman will in all probability not be found wanting when seized of the fact that, for a brief period of vacation time, conservation is his most particular business. There is satisfaction in the assurance that while we have none to waste or wantonly destroy we have plenty for all. It would indeed be well if we were to take to heart the remark of a certain experienced northern guide who, when remonstrated for not pulling in a snagged fish hand over hand, said simply "Even a fish has rights."

For me, Bensley's texts sketch a kind of benchmark for Ontario in the early1900s in the long history of a complex policy and practice, or ethic and praxis, that has been labelled with the term 'conservation' in our part of the intellectual-scientific world since at least the 1600s.

Decades ago Stephen Bocking introduced innovative personalities in the history of 'aquatic sciences' in and near the Great Laurentian Basin from around 1900. In retrospect, I infer that those personlities were conservationists, implicitly if not explicitly. There is more of that kind of history to be documented retrospectively.....

Wikipedia on line has numerous informative essays related to: the Conservation Movement, its ethic and praxis including practical application to valued natural features; its origins that may have dated to thousands of years ago; its indigenous occurrence everywhere in the world including among the Anishinaabek and Haudenosaunee a millennium ago in the environs of Geneva Park; its persistence as a default policy within humanity unless suppressed by extremists of various kinds; etc.

Generations later in the 1970s, the "Strategic Plan for Ontario Fisheries" -- in the context of "Adaptive Management" and an "Ecosystem Approach" that emerged in the Great Laurentian Basin in the early 1970s -- may be understood to be a sequel to the plan of the 1920s as sketched by Bensley. I understand that these 1970s initiatives were latter-day manifestations of the "Conservation Movement" as expanded to ecosystems of larger scale than heretofore.

My comments here in turn may be consistent with those of the paper by Kevin Reid and Tom Nudds elsewhere in this 2016 meeting's program.
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Meaningful aside: In the late 1800s a Bensley family owned a cottage on Go-Home Lake an hour west of Geneva Park; there is now a Bensley Island on Go-Home River. Nearby is Loudon Lake, named after W. J. Loudon, author of a book dated 1910 about smallmouth bass based on four decades of experience angling bass in the Georgian Bay region. A colleague of Bensley at UofT, he was a numerically-inclined physicist with an interest in the bass's preferred habitat of cool flowing water. His book doesn't include age and growth data on the bass, perhaps because the 'scale method' had not yet been

mastered in Ontario; see Wikipedia's "Estimating the age of fish" on line. A free download of a copy of Loudon's book that was once owned by B. A. Bensley is available online. So read it as a harbinger of an ecosystem approach, maybe...

Perhaps the Go-Home watershed could be recognized as a cradle for Ontario's emergent version of a Conservation Movement as related to fish and fisheries. Ask Will Knight about that...
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A simplistic analysis of the Conservation Movement infers that it is a millennia-long evolutionary happening in which (a) capture and removal of organisms for selfish utilitarian purposes and (b) caring for and preserving similar organisms together with their homes or habitats for altruistic reasons are balanced sustainably. I infer that it is an ancient ethic and praxis and may itself manifest evolution by natural selection.

In our culture, selfish and altruistic predilections are not parcelled out at birth in equal measure to different individuals. Nowadays we hear a lot about individuals who manifest a surfeit of selfishness; e.g., the top 0.1% of Americans who own about half all the 'property' of the USA. Some might think that St. Francis of Assisi manifested a surfeit of altruism; didn't his friend St. Clara deserve to be entertained in a decent way? A version of a Conservation Movement in a particular time and place may not reflect fully a golden mean between extractive exploitation and caring preservation of particular taxa of living things. Here "golden mean" may be read as Aristotle's "desirable middle between extremes".

In practice effects of a combination of these two selective meta-factors play out in complex ways that exceed the capabilities of linear analytical methods for explication. Linear analytical reductionism was once taken to be the gold standard of scientific methodology. No longer...

A complex cluster of features of living phenomena is that they: remain open to ingress of resources and egress of wastes; have self-organizing propensities; emerge autogenously as holonically-nested ('hierarchic') structures with linkages; manifest discontinuous sequences of birth, reproduction and death; etc. Being alive as a human entails minimal efficacy in participating in such living phenomena. The people of the Conservation Movement in the Great Laurentian Basin, say, manifest such praxis in their stewardship activities.

Thus the Conservation Movement in general coheres with the processes of evolution of living taxa by natural selection in which both selfishness and altruism play vital roles: a bipolar pragmatic strategy which also balances consequentialist and deontological ethics in sustainable ways.

Currently the study of evolution by natural selection, with the theory of evolution often attributed inaccurately only to Darwin, has finally reached a stage where empirical studies are shunting ideological platforms aside. There have been noisy ideologists on both the pro-evolution and the anti-evolution sides.* Now empirical scientists are finding

that both selfish and altruistic activities by organisms of a taxon help with the adaptive and selective processes that are part of natural adaptation and evolution.

*I have no hope that disinterested scientific research will ever provide convincing evidence, pro or con, on the issue whether a Divine Being actually created reality as we perceive it now only ten minutes ago but with all the memories and historical evidence in place to make it look like it has existed for some 13.4 billion years. An omnipotent and omniscient Divine Being could presumably pull off such a trick maybe even with omnibeneficient consequences. On that issue I declare bemused agnosticism.

The Conservation Movement manifests bipolar ethical features whether it relates to: isolated representative ecosystems with their fish in refuges or parks; aboriginal artisanal fisheries; angler recreational fisheries; vocational commercial fisheries; intensive aquaculture fisheries; or all five as an interactive, spatially-overlapping complex as in Ontario (?). Of course, the conservation practices must relate also to the homes or habitats of such taxa in each set. Any living thing modifies its immediate surroundings into a habitat suited in part to itself, so a living thing is inevitably an eco-phenomenon. Here "eco" implies a living organism in complex interaction with its home as external environment shaped to suit its own needs. At fine resolution there is no distinct spatiotemporal boundary between what is inside and what is outside a living thing.
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During the past two centuries our ages-old bi-polar strategy, within our Conservation Movement striving for a pragmatic balance, has often been subverted into a tilt toward uni-polar ideological fundamentalisms. Thus Thomas Huxley's version of natural selection acting mainly through Mutual Harm has supported an ideology of so-called free-market capitalistic ideology with extractive exploitation. Meanwhile Peter Kropotkin's version acting mainly through Mutual Aid has supported an ideology of planned communistic ideology with suppression of personal freedom. Both may have started with half truths and then transformed them into extreme fundamentalisms not supported by a science of living things.

In the 20th Century we experienced vast struggles between ideologues on the two extremes sketched above: Mutual Harm with Imperialistic Capitalism and Mutual Aid with Imperialistic Communism. An extremist invoked one or the other of the selfish vs altruistic polarities to the virtual exclusion of the other. The closer such extreme ideologues approached their respective ideals, the more disastrous were the political and practical consequences. Instead the Conservation Movement invokes a pragmatic golden mean with adaptive ethic and praxis.

Another meaningful aside: In about 1868 an application for a position on the UofT faculty by T. H. Huxley was turned down and a Presbyterian preacher and amateur naturalist who was related to the Province's premier got the job. In about 1900 Peter Kropotkin came to visit UofT and interacted with some professors of the Go-Home network. UofT participants in the Conservation Movement apparently did not get involved in the ideological noise between cadres of biased Darwinists, and an implicitly balanced version of such evolution was taught unemotionally as conventional science. I have recently learned that the Chair of the Zoology Department who hired me in 1957

had tried unsuccessfully to rid the Department of all copies of Darwin's "On the origin of Species". When Fred Fry retired years later, he gave me a dog-eared copy of Darwin's book with a grin that I failed to appreciate at the time.

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A feature of natural ecosystems, and especially of aquatic ecosystems, is that none of the natural features are bounded by straight lines as in Euclidean geometry. Humans, whose actions are informed in part by the Mutual Harm version of evolution by natural selection and with little understanding of the structure and dynamics of natural ecosystems, try to reduce to private property valued features of such ecosystems. For whatever reason, they apply rectalinear lines and planes to demarcate property that is privatized. But many natural phenomena cannot be constrained by such artifices with a result that much of an aquatic ecosystem cannot be privatized effectively and thus remains 'common property'. That the mythical free market was not fully appropriate for governing ecosystem features under such circumstrance implied a tragedy for Hardin.

In 1968 Garrett Hardin published "The Tragedy of the Commons" based in part on a simplistic rendering of the Mutual Harm version of evolution. Over subsequent decades Elinor Ostrom and colleagues exposed the ideological tilt of Hardin's "Tragedy" by actually observing how humans arranged sharing of such 'commons' in political decision-making processes that were biased by neither Mutual Harm nor Mutual Aid ideologies. Ostrom and colleagues called their approach a "Drama of the Commons"; she was awarded the Nobel Prize in Economics though the Peace Prize might also have been appropriate.

Incidentally shortly after Hardin published his Tragedy paper several colleagues and I had breakfast with him when he visited UofToronto in about 1970. I wanted to learn whether he was a true believer in his ostensibly scientific inference. At that time, I sensed that he was a true believer.

Based on my opportunistic reading of literature about governance methods used within the Conservation Movement in recent centuries, I conjecture that decision-making processes consistent with Ostrom's "Drama" are closer approximations to what actually happens than processes that invoke an ostensibly free market consistent with Hardin's advice related to his perception of a "Tragedy".

So various recent publications about the "Drama of the Commons" appear to me to provide useful insight in how governance decisions have been made within the Conservation Movement. And within the Adaptive Management and Ecosystem Approach variations of that Movement within Ontario's waters of the Great Laurentian Basin in the past half century.

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In the Great Laurentian Basin, the fisheries policies relevant to the southerly half of this vast Basin have been influenced spottily by a revolutionary doctrine of freedom from governmental regulations by men freed by the American Revolution, as allied ideologically with the French Revolution. The free-market ideology may have served the interests of the more aggressively selfish among the freed men, with a slogan that 'greed

is good'. If the natural rate of production and reproduction of valued fish (or forest or waterfowl) was less that the interest rate manifested by money invested in the economistic free market, then conservation practices were not justified. Extract the resource fully and convert it to cash and move on to invest it elsewhere. Incidentally, a rigorously free market has never been observed in political practice with Great Lake fisheries; basically it is an ideological construct.

In an attempt to extend the life of such a resource, an aggressive Artificial Hatchery Movement may have taken the place of a Conservation Movement in one or two U. S. states for half a century in an attempt to achieve continued production of valued fish in their southerly waters while largely ignoring the loss of natural spawning habitat for numerous reasons.

In the northerly half of the GLB, artificial hatcheries were used mostly in an attempt to mitigate partial failures of the strategies and tactics of the Conservation Movement. Natural reproduction by an adequately large contingent of spawners was not written off in the northerly waters as it may have been impicitly in at least some of the states with some of the waters of the southerly half of the GLB.

The proceedings of a symposium at the Fourth International Fisheries Congress, convened in Washinton DC in 1908, document these differences in south vs north policies. See S. W. Downing, F. N. Clark and P. R. Reighard, "Plans for Promoting the Whitefish Production of the Great Lakes." Bulletin of the U. S. Bureau of Fisheries, Volume 28, 1910.

Key personalities have periodically used agriculture as a model for fisheries at the scale of large parts of the Great Lakes. In recent decades we may note: salmon ranching partly modelled on beef ranching on the plains; aquaculture in floating pens similar to the technology of hog farms; use of pesticides in an attempt to limit the harm done by noxious invasive fish species such as with sea lamprey; etc. Each of these pose challenges for the ethic and praxis of a Conservation Movement, especially if the relevant entrepreneurs are biased to a strongly capitalistic ideology.

In the year 2016 a deep difference between the policy complexes of the southerly and northerly halves of the GLB as sketched above is not as obvious as it may have been a century earlier, as manifested, say, in the quarter century starting in about 1890 with a generation-long effort effort to create a U. S.-Canada treaty for fairly sharing the Great Lakes fisheries' values. Few scientists and scholars currently, i.e. in 2016, active in Great Lakes fisheries issues know much about those diplomatic efforts of 1890 to 1915.
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In 1998 an American historian, Kurkpatrick Dorsey, published a book titled "The Dawn of Conservation Diplomacy: U. S.-Canadian Wildlife Protection Treaties in the Progressive Era." His study focuses on three case studies one of which relates to fish and within it he presents a large sub-study on the Laurentian Great Lakes. Stephen Bocking recognizes Dorsey's work as pioneering with respect to retrospective assessments of such diplomacy as relevant to the history of the Great Lakes fish, say.

Reading Dorsey's book I inferred that he was not an expert on fish and fishing but had accessed much important literature on Great Lakes fish and fisheries. He focussed on the formal reports of a number of binational commissions as well as on relevant archives of information on which the commissioners based their data summaries, analytical findings and policy recommendations. He referred particularly to facilitative efforts by the American Fishery Society and the intense work of two commissioners for each of two commissions: Richard Rathbun and William Wakeham for the first commission; David Starr Jordan (assisted by Barton Evermann) and Edward E. Prince for the second commission. In retrospect I infer that these colleagues deserve recognition in an Honour Roll of Conservationists concerning Great Lakes Fisheries.

As Dorsey writes: the draft treaty after some 25 years of effort "got away". For latter years when that effort was drifting away, Dorsey inferred the following, as specified on page 83: *"...Canadian fishermen had built up a reservoir of resentment towards their American counterparts. Not only did Americans operate in a basically lawless environment, but Americans owned a large portion of the Canadian [fishery] industry."*

During this 25-year effort for a binational treaty on fisheries, Canada and the U. S. were also active on other shared natural resources. One of these efforts related to shared waters for which the Boundary Waters Treaty was successfully negotiated in 1909. The International Joint Commission was created and assigned responsibilities under the 1909 treaty. Dorsey's 1998 book doesn't focus on the BWT/IJC; its primary focus was on water as lifeless mass, for purposes of transportation and for limiting flooding, inter alia. In retrospect I note that canny negotiators had included Article 4...

During these 25 years there was also intense negotiation about migratory birds, which eventually led to the Migratory Bird Treaty in about 1915.

So in retrospect, I wonder if it would be reasonable to recognize the complex emergent 1890-1915 happening, implicitly within the Conservation Movement, as an earlier version of a Great Laurentian Spring as a precursor to the 1968-1993 Great Laurentian Spring which involved effective transjurisdictional collaboration related to water, fish and birds.

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Successful movements often have narratives that colleagues share as a kind of memory aid to help synchronize participation in a movement's further evolution. Periodically a narrative is updated to serve as a benchmark following a self-audit. Would it now be timely to update a record of Ontario's experiences with recent versions of the ancient Conservation Movement such as Adaptive Management and the Ecosystem Approach, to assist with emerging challenges such as: fair sharing of fish and their habitats with Aboriginal First Nations; more urban development but in watersheds where Conservation Authorities thrive; climate change with a switch from fossil fuels; and a shift within the economics profession from invocation of ideology to reliance on empirical evidence-based science?

Jennifer Read and Marc Gaden are currently supervising an historical study related to the role of the Great Lakes Fishery Commission in our Great Laurentian Basin. Perhaps a

retrospective self-audit by colleagues in Ontario within a mindscape as sketched above, augmented by the work of Kevin Reid and Tom Nudds, would be helpful to Jennifer and Marc.

Such a team project might also provide interesting reading during the 150th Anniversary of Canadian Confederation in 2017, several years after the democratic defeat of a federal regime that apparently had acted to constrain the role of fisheries expertise in environmental decision-making. I conjecture that a fair retrospective review would converge on a conclusion that fisheries policies and practices in which a Conservation Movement has been a central stimulus have served Ontario well, all things considered.

Also, such a study might be welcome in connection with the 150th Anniversary of the American Fisheries Society in 2020. AFS has an interesting history with respect to the Conservation Movement as implied above, and particularly in the Great Laurentian Basin.

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Post script: I have occasionally used some form of the term "to manage" in the above text. I have learned that the etymology of the word goes back to the Latin "manus" or "hand" with respect to how an ancient horse whisperer used his hands to induce a behavioural shift in a horse so that it would do the horse whisperer's bidding. For decades I have been interested in how versions of that "to manage" term are actually used. I conjecture that it commonly relates to the complex of interactions of a complex person (horse whisperer) and another complex thing (horse) to foster a desireable kind of complex collaboration (horse-back riding).

So yes, various versions of the term "to manage" are appropriate within the Conservation Movement.

In German 'handeln' serves a similar role, without invoking the Latin. Three centuries ago Hans Carl von Carlowitz, author of authorative German literature about the Conservation Movement as it related especially to forestry (i.e., Sylviculture or Waldbau) and used the the term "handeln". (I thought you might like to know that.)

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