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Report on the Proposed Fraser-Columbia Water Transfer: Some Economic and Legal Implications for the Upstream Riparians

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REPORT ON THE PROPOSED FRASER-COLUMBIA WATER TRANSFER
Some Economic and Legal Implications For the Upstream Riparians

I. A. McDOUGALL*

INTRODUCTION

At present Canada is faced with a mild international crisis concerning the question of continental agreements for the sale of oil, gas, water (possibly), and other energy sources. This is of course the so-called "Hickel plan". Basically at issue is the support of the American industrial way of life. Such primary resource sales by Canada may be fairly considered as nothing more than a form of subsidy necessary for the continued tenure and furtherance of the U.S. style of production and consumption. The decision to commit so large a measure of the globe's untapped resources towards such a use cannot be divorced from the larger question of environmental waste. The ramifications of Canadian decision-making today will have broad impact upon future forms of industrial development and environmental abuse. In short, at issue is an "ethic of resource use".

Conservationists have alleged that in the period since 1945 the United States has expended more of the world's non-renewable resources than has been used by the rest of the world's population over the entire history of mankind. This nation accounts for 6% of the world's population. It has, however, produced 50% of the world's steel, consumed 50% of the global oil reserves, and 90% of its natural gas. The advent of the age of "high mass consumption" is rapidly depleting the domestic resource base and increasingly making the economy dependent upon external sources of raw material. In terms of its remaining natural endowments the United States is very close to becoming a "have not" nation. Free access to Canadian raw materials is thus a national imperative.

Of all forms of primary resource sales, water stands in a category all to itself. The growing American water quandary is perhaps an eloquent example of an enlarging disparity between domestic U.S. demand and supply.[1] Compared with the total possible supply base of 650 billion gallons per day, demand estimates for the year 2000 are 1,000 billion gallons per day. Of its twenty-two water resource regions the U.S. expects to exploit five by 1980 or before, eight by the year 2000 and 17 in the foreseeable future should pol-

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[1] p. 1, *A Study of Pollution—Water,* A Staff Report to the Committee on Public Works, United States Senate, 88th Congress, 1st Session, U.S. Government Printing Office, Washington, 1963.

lution preclusions continue unabated in what are now water-rich regions.[2] It would appear that access to additional water supplies is more of a pre-condition to the future economic development of the United States economy than is true of any single other primary resource.

Perhaps for this reason Canada has experienced what amounts to direct and overt foreign pressures brought to bear on domestic policy formation, which have ultimately resulted in vast jurisdictional encroachments into Canada. The most appropriate of examples to be found is in the recent international joint commission negotiations which led to the development of the Columbia River Treaty. This agreement represented an almost complete departure from the pre-existing rules of Canadian-American International Trans-boundary Water Law and resulted in a severance of the Canadian section of the Columbia River basin from effective Canadian sovereign control. The overall economic impact of this result was profound in terms of future Western Canadian hydro-electric development, future industrial locations around power sources in the West, some existing Western primary interests that would be denied access to cheaper power otherwise available, Prairie irrigation sources, and possibly Prairie wheat prices and productivity by way of preventing delivery of low cost Columbia-Kootenay irrigation waters. More recent developments of international law insofar as development of Canadian trans-boundary water rights are concerned have been far from an outstanding success. Since the definitive statement in 1909 of upstream riparian prerogatives laid out by Article II of the Boundary Waters Treaty, the country has evidenced an alarming readiness to accede to new doctrines which mitigate its effect. The case of the Columbia River Treaty has proven this to be to the disadvantage of Canada and the concomitant benefit of the U.S. Absent swift Canadian initiative to clarify the terms of the Columbia River Treaty, Canada will have forfeited one of the most important water resources of the nation and one of the world's most valuable assets.

As matters stand the treaty offers two lessons. First it has demonstrated that Canada faces a serious challenge with respect to its sovereignty over Canadian water resources. Second, it has also showed the appalling cost of Canada's failure to develop a nation-wide water resource policy to which all provinces must adhere. The ambiguity of the treaty has permitted two views of its significance to remain current. The first is to the effect that the treaty is a precedent, affirms the view that North-American water resources are a continental heritage to be allocated in favour of those in greatest need (which is to say invariably the United States). The proponents of this view understandably are usually American. The second interpretation contends that the treaty has no precedent value, and that each nation has the right to employ all waters occurring within its own territory in accordance with national interest. This view in light of the treaty's provisions is a tenuous one. It is of course in Canadian interests that it be confirmed. A small scale project currently under study in British Columbia and by the Federal department of Energy, Mines and Resources, presents a unique and perhaps

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[2] Senator Frank E. Moss, *The Water Crisis,* Frederick A. Praeger, New York, 1967.

final opportunity to achieve the required clarification of the Columbia River Treaty. It also affords opportunity for the development of a cross-Canada policy on water resources *vis-a-vis* the growing demand for a water export agreement from the United States.

The form of the following report consists of three basic sections. The first outlines a background of the particular Shuswap Okanagan water transfer proposal. Attention is directed to the foundations of the Okanagan's water difficulties, and the assumptions lying behind the argument that an extra-basin diversion into that region is necessary. Brief note has been made of conservation factors and alternative development schemes that to date have yet to be considered in any formal sense. The first and second sections suggest the current misinformation as to Okanagan water needs presents a very real risk of an inadvertent international water flow increase in the event that the proposed diversion scheme is realized. It is this possibility which invokes issues of potentially far greater significance than the question of whether or not the Okanagan valley should have more water.

Section two discusses in some detail the reasons for this. Recent developments of international boundary water law are described, and the current areas of legal uncertainty are considered. In particular this portion focuses upon the Columbia Treaty precedent, and the impact which it had upon the pre-existing rules of law with respect to source owner riparian rights.

The concluding section of the report suggests a development scheme aimed primarily at resolving the current international uncertainty regarding a rule of law applicable to trans-boundary waters. It is suggested, however, that this recommendation is no more than the better of two possible alternatives. These are that either diversion not take place at all, or that an expanded diversion take place utilizing Columbia flow stored in Canada, and delivering an amount deliberately in excess of the Okanagan's projected needs.

PROPOSED FRASER-COLUMBIA WATER TRANSFER: BACKGROUND

> "The input of water into the Okanagan lake system according to B.C. Department of Water Resources figures is approximately 350,000 acre feet per year. This is only just sufficient to meet current needs. It is not enough to provide any extra water for anything, including the necessitous 'flushing' action that is a basic part of draining the lakes of pollution. To this must be added the obvious growth-factors of the area. Within 25 years, and possibly far less, the population in the area could increase by 50% conservatively. Irrigation demands are also on the upswing; gravity sources of supply are all spoken for. Thus if the Okanagan is to continue to grow as it should more water supply must be found somewhere."[3]

Geographically, the Okanagan represents Canada's closest approximation of a desert. Its soil is of the dark grassland variety, and the predominating

[3] From the files of Mr. Bruce Howard, Member of Parliament for Okanagan-Boundary. This is an excerpt from an address given by an un-named Okanagan resident before the Vernon Chamber of Commerce.

activities are fruit and tobacco agriculture, with some ranching in the northern reaches of the valley. The area is the driest of Southern Canada, being a part of the larger Fraser plateau region of British Columbia, which has a precipitation range of between five and eighteen inches a year. The Okanagan summer is Canada's warmest. Winters are also on the extreme, being quite severe but brief. The valley floor lies at approximately 1120 feet and cultivation occurs up to an altitude of approximately 1500 feet. The region is centrally located in the larger interior plateau, representing a 2000 foot deep trench that extends northwards from the forty-ninth parallel for roughly one hundred miles.

Of recent, Okanagan agriculturalists have been by and large unsuccessful. There is no one definitive reason that can account for this, for a number of forces have been at play, including unpredictably severe winter frosts in 1964 and 1968, small agrarian units pre-empting those economies of scale potential to orcharding, loss of markets due to supply fluctuations, and generally haphazard cultivation techniques. The result has been a continuous series of crises for the regional economy and more than once the area has required large scale federal relief.[4]

THE OKANAGAN WATER "PROBLEM"

In an effort to alleviate the burdens of this instability quite extensive campaigns have been undertaken to attract light industry[5] to the valley on a joint basis between the Federal, Provincial and Municipal governments. Further effort has also been devoted to the already extensive tourism facilities of the lake region. Next to agriculture, this sector is the most vital element of the regional economy. Yet it too has suffered a severe set-back in the form of a pollution problem that has been given wide-spread publicity. During the summer of 1968 Lake Skaha which is fed by Lake Okanagan and separated from it by the town of Penticton was condemned due to an alarmingly high rate of nutrient increases. Similar fears were expressed concerning the larger Lake Okanagan as well, and subsequent biochemical oxygen demand counts showed that it also was in some danger. The detrimental impact of the publicity given to the reports upon the regional tourism industry was profound, extending into the multi-million dollar category for the 1968 summer alone according to some estimates.[6]

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[4] 1965 marked the beginning of a large scale federal redevelopment programme which continues to the date of writing.

[5] In 1965 agricultural relief aimed particularly at the larger scale agriculturalists in an obvious effort to enhance the trend to larger production units. The importance therefore of a rise in light manufacturing would appear to be to stimulate an employment shift from marginal orcharding to industry, thereby leaving the marginal farming lands available to more efficient producers. Towards this end, since the winter of 1965, a series of advertisements have appeared in trading, financial and news periodicals offering large tax concessions, depreciation allowances and low land prices to any manufacturing activity willing to locate in the valley.

[6] The Kelowna and Penticton Chambers of Commerce.

> "This is, certainly, a mess of the Okanagan's own making. It is the Okanagan's own sewage, the effluent from the Okanagan's own wineries and other light industries, which is feeding the algae. Yet a threat to the Okanagan is a threat to all of B.C. It is all of the recreational waters of the Okanagan adversely effects our $180 million tourist industry."[7]

The summed effect of the region's agricultural and tourism problems is that the regional economy shows every promise of going from bad to worse,[8] with sectorial depression of its two major industries in the offing. As a consequence, a somewhat frantic search has been in progress to find a solution to the regional plight in both areas. To many, an obvious answer appears to be more water and, in particular, a water export from the Fraser basin. Superficially this proposal has some logic, for it is argued that an increase in water supply will have a dual effect. On the one hand it will help stabilize agricultural output, where once periodic water droughts threatened it, and concurrently allow an ultimate expansion of irrigated land by 63,000 acres[9]; and on the other hand, ease the pollution threat by way of causing the system to 'flush' at an accelerated rate. Unfortunately, a closer examination appears to suggest that both contentions are erroneous.

STUDY OVERSIGHTS

The proposal to increase the Okanagan water supply base was first conceived during early researches by the British Columbia Lands, Forests and Water Resources Department. Initially two supply sources were considered:[10] the Similkameen River which flows into the main arm Okanagan River immediately south of the forty-ninth parallel, and the Shuswap River which flows via the South Thompson into mainstream Fraser River. The first of these possibilities was abandoned when it was learned that the Similkameen flows had been largely committed in both Canada and the United States per international agreement. Thus the Shuswap diversion was the sole proposal given further attention. As to this prospective source two reports were forthcoming. One of these was an engineering study prepared by the province and sponsored under the auspices of the joint federal-provincial Agricultural Rehabilitation and Development Assistance Programme, which was submitted to the province in August of 1966.[11] A second report by the

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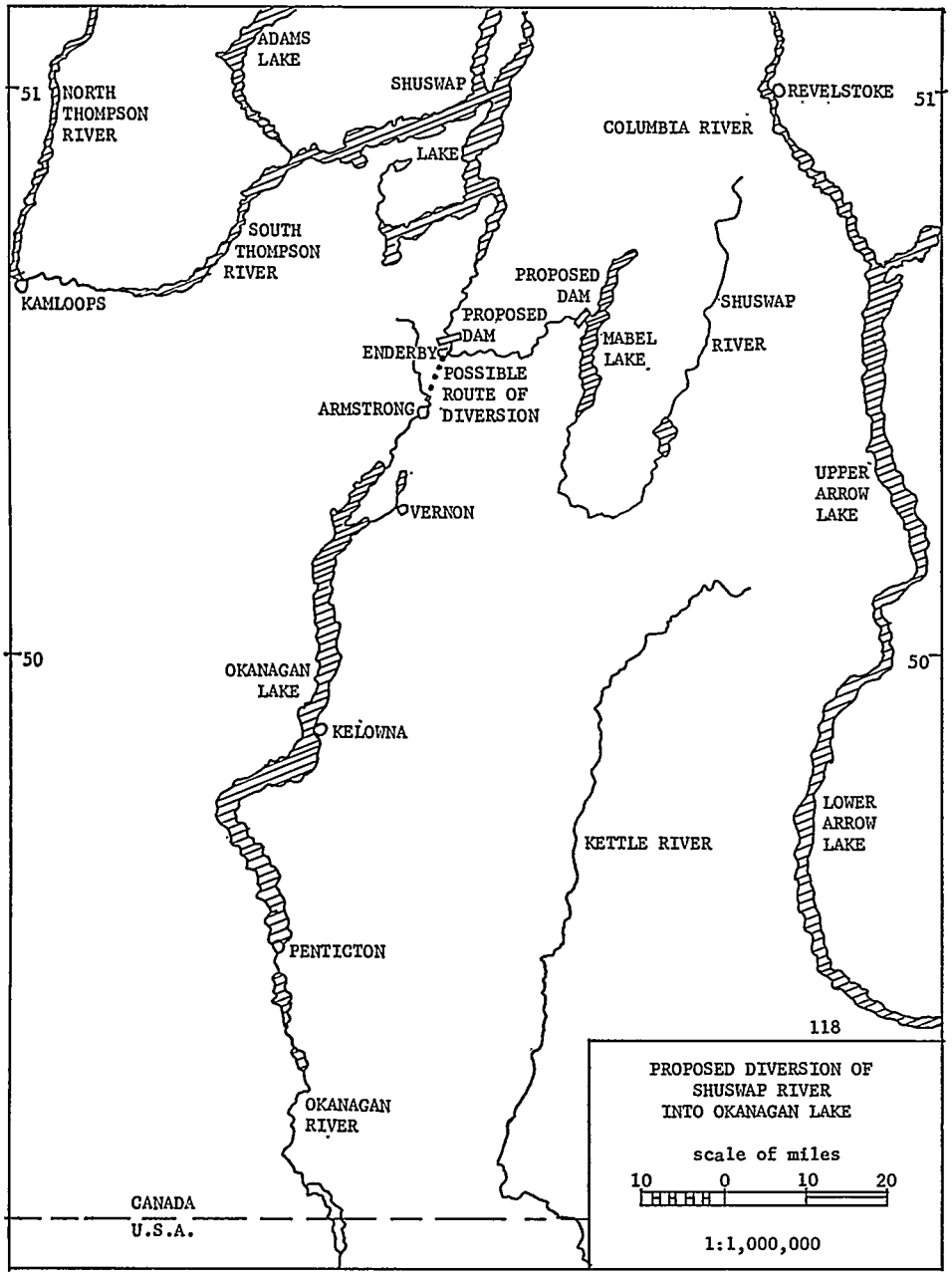
[7] p. 4 *The Vancouver Sun,* Monday, July 22nd, 1968, Editorial entitled *'Calling a Spade a Spade'.*

[8] Prior to the latest agrarian crises and the pollution-scare the area was technically considered a 'depressed' region, based upon the high incidence of unemployment, wage rates and per capita relief expenditures each year as opposed to the value of output.

[9] *Department of Energy Mines and Resources, Notes on Shuswap Diversion to Okanagan River,* undated.

[10] The British Columbia Government had earlier wished to apply some of these flows to a scheme known as the Cawston Benches Project and was only able to do so in relation to the flood waters of May and June, and drawing from only that volume stored over this time.

[11] ARDA (Research) Project No. 10031—August, 1966. Preliminary Report No. 1 *Shusawp Lake Water Supply Canal.* Water Investigations Branch, B.C. Water Resources Service, Dept. of Lands and Forest and Water Resources.


ADAMS LAKE
SHUSWAP LAKE
51
NORTH THOMPSON RIVER
SOUTH THOMPSON RIVER
KAMLOOPS
REVELSTOKE
51
COLUMBIA RIVER
PROPOSED DAM
PROPOSED DAM
ENDERBY
POSSIBLE ROUTE OF DIVERSION
ARMSTRONG
MABEL LAKE
SHUSWAP RIVER
UPPER ARROW LAKE
VERNON
50
OKANAGAN LAKE
KELOWNA
50
KETTLE RIVER
LOWER ARROW LAKE
PENTICTON
OKANAGAN RIVER
118
CANADA
U.S.A.
PROPOSED DIVERSION OF SHUSWAP RIVER INTO OKANAGAN LAKE
scale of miles
10 0 10 20
1:1,000,000

Provincial Department of Lands, Forests and Water Resources followed in May of 1967.[12] Neither report was prompted by an existing general water shortage in the Okanagan or with reference to pollution abatement, for the pollution was in fact a subsequent discovery. Rather both studies were with the object of stimulating new industry for the valley in the form of large scale grape and wine production.

> "The provincial government is studying a way to turn thousands of acres of Okanagan sagebrush into a sea of grapes. It has received a report from the water resources branch outlining possibilities for creation of a water supply canal from the Shuswap River to Okanagan Lake. The Canal would provide irrigation for grape growing . . . Richter (Provincial Agriculture Minister) told the Sun that under the proposed water supply system, the flow could be reversed to carry water to whatever part of the area needed it. Storage to ensure a steady water supply is available in Sugar and Mabel Lakes. He said, 'Our greatest need today is for more land for grape growing. We are far short of our requirement now and have to turn to California for much of the grape supply for our wineries.' "[13]

The studies were limited and uncomprehensive and for that reason generated considerable alarm from the Shuswap-Thompson population. Former federal Justice Minister the Honourable Davie Fulton was moved to note that:

> "At no point does (the study) suggest let alone undertake, an examination of the results of such a diversion on the flows of the Thompson River System, its possible effects on fisheries, the requirements of that system for irrigation and industrial purposes; nor does it even glance at the possibility of alternative supplies for the Okanagan; nor again does it make any comparison or effort to measure the advantages and disadvantages to the one system against advantages and disadvantages actual or potential to the other.
>
> In short, it does not seem to me to qualify as a study at all; it is rather simply a physical feasibility analysis and a very limited one at that."[14]

One of the more significant failings of the ARDA report was that it presumed that there was a measurable deficiency of water supply in prospect for the Okanagan, and made its recommendations for the project on this basis. This argument in turn rested upon the assumption made by the study that the current population of 72,000 would climb, over a 60 year span, to 261,000[15] persons. When the contemporary economic outlook for the region *vis-a-vis* agriculture and tourism is considered, this population projection becomes a highly questionable one. The 164,000 acre feet (hereafter referred to as AF)[16] that is currently drawn off for agrarian uses was estimated to reach a demand total of 573,000 AF[17] by the year 2000. Based

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[12] ARDA (Research) Project No. 10031—May, 1967. Preliminary Report No. 10041 *Effect of Shuswap River-Okanagan Lake Water Supply Canal Operation Scheme 3, alternatives 2 and 3 in the Shuswap and South Thompson Rivers,* J11D.

[13] *Scheme for Okanagan; Sagebrush to Sea of Grapes, The Vancouver Sun,* February 1967.

[14] Extracts of a letter from Mr. Fulton to the Hon. Maurice Sauve, Federal Minister of Forestry and Rural Development, as cited by the *Kamloops Daily Sentinel,* February 2, 1968.

[15] [16] [17] [18] The study has not yet been released by the province. The quoted figures were obtained from notes taken by Dr. T. O'Riordan, Department of Geography, Simon Fraser University, who has had access to the report.

upon these same population estimates, this is approximately 213,000 AF per annum in excess of the mean recorded inflow, and a scant 57,000 AF below the all-time high recorded inflow. Thus the study recommended that a minimum of 285,000 AF[19] per annum be diverted from the Shuswap to augment pre-existing Okanagan supplies.

This recommendation is an unrealistic one. In the first place, if the population growth estimates are themselves wrong, so too will the demand projections necessarily be in error. In the second place, it was assumed that the standard water consumer of the year 2000 would employ the same parochial irrigation methods[20] as currently prevail. Additionally the study assumed that fifty percent of that water applied to agriculture returned to the system in the same channel from which is was drawn, and calculated demand growth on this basis. This has been cited[21] as a rather generous proportion to attribute to agrarian consumption and it has been suggested that the actual return to the system is considerably greater.[22] To the extent that this is the case, agricultural demand has again been exaggerated.

The most important error source inherent in the study's assumptions, for the purposes of this paper, result from its failure to appreciate level regulation problems currently being encountered on Lake Okanagan. There is presently only five feet of installed head control at Penticton, Lake Okanagan's outlet. Of this, four feet are useable with the incremental foot for flood emergencies only. Lake Okanagan's surface area is 84,000 acres, which implies that the normal maximum potential storage on the lake can be as high as 336,000 AF, and the emergency maximum 420,000 AF. These volumes represent two and three times the current irrigation demand levies per year, with enough to leave a 100,000 to 184,000 AF surplus when urban and industrial water demands are subtracted.[23]

THE ACTUAL OKANAGAN WATER PROBLEM

In spite of these apparent surpluses, the Okanagan periodically complains of drought conditions which are in fact very real. This occurs for several reasons. First, the extent to which Lake Okanagan can be used as a source of hold-over storage during years of excessive run-off as insurance against drought years that may follow is limited by other factors. Chief among these is the fact that much of the lakeshore is heavily developed for the tourist

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[19] 285,000 acre feet at a constant flow produces power equal to 2,000,000 kilowatt hours per annum approximately.

[20] Examples of this might be irrigation taking place during the heat of day, irrigation water applied at random, disproportionate water losses in the irrigation sluices and pipings, and minimal soil and vegetation preparation to make best use of irrigation application. All of the above are the case today.

[21] *op. cit. supra* notes 11.

[22] By dealing solely with direct returns to the system the study ignored the fact that considerable amounts reach the lake via percolation and ground water sources.

[23] The total present demand (Dto) is 236,000 AF all-inclusive according to the ARDA report. *Supra* notes 11 and 12.

industry, and thus the lakeshore properties are of considerable value to both their owners and to the region at large; it is necessary therefore that level fluctuations be minimal. Secondly, the water inflows have proven to be difficult to forecast on a year to year and season to season basis owing partially to the fact that the system is fed from mountain snow packs. And thirdly, for this same reason, short-range storage control is very limited and frequently wasteful.

> "The seriousness of water shortage may be of minor significance when Okanagan lake inflow approaches the minimum water requirement and when some carry over storage on the Okanagan lake is available. However when annual inflow is only half of the minimum water requirement such as occurred in 1926 and when there is a repetition of limited run-off over a three year period such as occurred in 1929 to 1932, the water supply conditions would be serious. In addition *it is very difficult to accurately forecast the Okanagan lake inflow and therefore the Okanagan lake storage cannot be operated without a certain waste.*"[24, 25]

These factors in conjunction with agrarian, urban and industrial water waste have produced genuine periodic water supply deficits. Yet it is abundantly clear that yearly absolute deficiencies of supply are a rarity, and assuming that more storage supply could be provided, and regulation control improved, they could be eliminated altogether. Both of these difficulties are potentially solvable under one programme of development. Regulation is made difficult because inflows are both unpredictable and uncontrolled. Storage is made difficult because of the necessity to minimize lake level variations. Large scale development of inflow route storages would greatly improve both supply information, and thus regulation timing, and concurrently limit reliance upon Lake Okanagan for holdover storage. Further, as inflow storage would be at high altitudes, it could be brought to the agrarians with less cost[26] for it would eliminate, in some cases, the need to pump from the lake.

On the demand side, the problem is one of exaggerated need estimates and is less easily corrected. Yet before a water import can be entertained in a formal sense, the question should be approached, for current estimates have placed the agrarian waste factor alone at twenty-five per cent.[27] Water charges, irrigation controls (e.g. municipal by-law restrictions), fertilization programmes, vegetation controls would all be of aid, but the current predominance of small scale, marginally productive units, operating under parochial methods of cultivation imposes rather severe limitations upon most improvement measures.

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[24] *The Penticton Herald,* Tuesday, April 16, 1968. The emphasis is my own.

[25] A fourth factor which limits supply, particularly when storage release errors have been made, is the flow requirement prescribed by the Federal Department of Fisheries for the Okanagan River during spawning seasons.

[26] This is in an economic sense only for as matters stand many do not have to pay a water rate, and in instances where charges are levied, they do not reflect costs.

[27] *op. cit. supra* note 15.

Thus on the quantative[28] side of the Okanagan water controversy there are essentially three elements. These are, in summary, a widespread belief that an augmenting of the area's water supply will do much towards solving its economic difficulties; that current water conservation practices by agriculture particularly are wasteful; and that there exists a lack of supply information which has created inefficient storage control, which has in turn aggravated, if not occasionally created, water scarcities and its attendant difficulties for the region.

DIVERSION AND THE PROPERTY RIGHT IN INTERNATIONAL WATERS: PRE AND POST COLUMBIA RIVER TREATY

Due to the fact that current Okanagan flow regulation is inefficient, each year water that might be applied to Okanagan needs flows out of the system and into the mainstem Columbia. The variations of such flows depends upon three variables: the amount of run-off each year, the extent to which this rate of inflow is anticipated and thus at least partially controlled, and the total amount each year that must be released to maintain suitable lake levels for the tourist industry in Lake Okanagan, as well as that volume necessary to appease the federal department of fisheries flow requirements. Thus, within upper and lower limits, a proportion of total inflow will necessarily leave the jurisdiction and cross into the United States when needed by Canada. During years of high run-off a greater volume will be thus disposed than during years of low run-off.

In a similar fashion, if the base of supply is expanded, this also will cause the total annual flow volume across the national frontier to rise. A net flow increase on the Okanagan River is inevitable. Note has already been made of the fact that Okanagan regulation is by no means perfected. For the reasons that this is the case today, demands will be made upon water from the external source of supply (i.e., the Shuswap) when it is not needed.[29]

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[28] On the qualitative side of the problem little can be said by virtue of the fact that little is known regarding possible correctives. However a number of factors are clear; namely that municipal and industrial wastage is by and large at fault, and that control methods are inadequate vis a vis the problem of sewage and industrial waste inflows. Whether or not water from another basin can be used to 'flush' the Okanagan system must remain a moot point barring further research. A priori there would appear to be little hope that it offers great cause for optimism. Organic waste must first be controlled before the subsidiary question of flow increments can be approached. Thus detailed considerations must be given to the potential ecological and climatic effects of adding water of a substantially colder temperature to the Okanagan. Preliminary Soviet and Canadian researches suggest these are substantial (re: paper by R. C. Kollinger and others, *Second International Oceanographic Congress in Moscow,* June 1966).

[29] For example, suppose that run-off during a month is deficient and Shuswap water is thus called upon to augment available supply, following which a high pressure ridge accelerates snow pack run-off (i.e.: this occurs frequently). Given the limited amount of storage possible on Lake Okanagan a greater amount of water will have to be released than would have been necessary without Shuswap water access. Annual Okanagan inflow into the mainstem Columbia will necessarily rise above the natural volume.

A necessary corollary of this will be that an amount of water greater than would have been the case without the Shuswap water import will flow into the mainstem of the Columbia.[30]

The confluence of the Okanagan[31] and the Columbia Rivers is slightly downstream of the U.S. Columbia development of Chief Joseph, near the town of Brewster, in Washington State. From Chief Joseph to the river's mouth at Astoria, Oregon, the entire river's head is almost fully[32] developed for hydroelectric power. Thus, regardless of how diminutive the incremental inflows that result from the Shuswap-Okanagan diversion are, their effect will create a perceptible benefit to the United States power producers. Once perceived they will, it is suggested, form the basis of two property claims by the United States. These are, firstly, because the inflows represent a hydroelectric and perhaps consumptive benefit, *their occurrence becomes a matter of right.* The basis for this contention is known as the "doctrine of prior appropriation" which is currently a crucial area of Canadian-American boundary water law.[33] Secondly, the United States may also claim that, as the water inflow derives from what is now a purely national basin (i.e., the Fraser), *once delivery takes place the basin as a whole comes under international legal authority* in order that American interests can be protected.[34] Both potential assertions pose serious questions that must be considered before the contemplated diversion can proceed. This may entail considerable delay and for that reason a number of the diversion's proponents are dangerously adamant that no such problem in fact exists.

> "This business about diverting water from this area to the U.S. is just propaganda from those who object to the Shuswap to Okanagan diversion. There is no suggestion from any government source,[35] or so far as I know from any source in Canada that we should divert water from or through the Okanagan to the U.S."[36]

Even were the above to be the case, this does not make it clear that a property right will not pass by way of an inadvertent water transfer. In actual fact the body of legal principles that emerged from the 1964 *Columbia River Treaty and Protocol* strongly suggests that this will occur, for they earmarked a quite radical departure from previously adhered to boundary water law between Canada and the U.S.

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[30] This will occur in two manners. The lowest extremes of recorded outflow will be moderated; water supplies will increase by virtue of the import during dry years; the highest extreme of recorded outflow will rise coincident with misestimated water requirements and poorly timed Shuswap inflows.

[31] This is the American spelling which applies to their section of the river.

[32] From Grand Coulee to the sea 1211 ft. (out of 1280 ft.) is developed, leaving 75 ft. (approx.) remain undeveloped. The drop from Chief Joseph to the sea is 699 ft. which therefore implies one ft. develops 700 kwh (enough to service a well-equipped house for 1 month).

[33] The doctrine's history and significance are discussed below.

[34] This assertion will not be an entirely novel one. A number of American references have been made with respect to protection of their equity interests in any Canadian Fraser development vis a vis the salmon fisheries.

[35] This is in error. An official of the Pacific Policy and Planning division of the federal department of Energy, Mines and Resources told this researcher that a deliberate and increased water export would be considered in current studies undertaken by his staff.

[36] Correspondence of Mr. Harley Hatfield, P.Eng., Penticton 16 February, 1969.

THE HARMON DOCTRINE

The foundation of Canadian-American international law as to water derived from the 1895 American-Mexican dispute over the use of the Rio Grande. This case involved a Mexican claim that the Rio Grande inflows were both reduced in volume and quality as a consequence of upstream development by the American source owners. In reply, the United States asserted what is now referred to as the *Harmon Doctrine.*[37]

> "There is no duty or obligation in international law or any state to restrain its use of the waters within its territory to accommodate the needs of another state. *Jurisdiction and control of a state over the waters of an international river wholly in its territory is exclusive. The recognition of any other principle would be entirely inconsistent with the sovereignty of a state over its national domain."*[38]

This same principle was asserted in a Canadian reference regarding the diversion of the Allagash River (a tributary of the St. John) prior to the 1909. *Boundary Waters Treaty,* with Canada reluctantly acquiescing to it.[39] When the above Treaty Agreement was later completed, this same principle was preserved. The relevant provision was its second article.

> "Each of the High Contracting Parties reserves to itself or to the several State governments on the one side and the Dominion or Provincial governments on the other as the case may be, subject to any treaty provisions now existing with respect thereto, the *exclusive jurisdiction* and *control* over the use and diversion, whether temporary or permanent, of all waters on its own side of the line which in their natural channels would flow across the boundary or into boundary waters; but it is agreed that an interference with or diversion from their natural channel of such waters on either side of the boundary, resulting in any injury on the other side of the boundary shall give rise to the same rights and entitle the injured parties to the same legal remedies as if such injury took place in the country where such diversion or interference occurs; but this provision shall not apply to cases already existing or to cases expressly covered by special agreement between the parties hereto."[40]

ARTICLE II was a less stringent version of the *Harmon Doctrine* when compared with that asserted in the *Rio Grande* reference, to the extent that the injured entity was given a cause of action before the injuring nation's courts, in the same status as a national of that jurisdiction. But insofar as Canada was concerned *vis-a-vis* the 1909 context, it was a somewhat illusory remedy. By virtue of her want of development, any claim that she was able to assert was unlikely to be so large as to have much impact upon U.S. decision-making. The American attitude on the other hand was perhaps understandable. Both of her neighbours, Canada and Mexico, were less industrialized than herself, and for that reason less likely to make prior use of those boundary waters at issue. To allow either Canada or the Mexicans to assert riparian rights per the common law would hamper the U.S. industrial development, for the *riparian doctrine* afforded protection to users without regard to their

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[37] So named after the then U.S. Attorney General, Judson Harmon.

[38] Austin Jacob, *Canadian-United States Practice and Theory Respecting The International Law of International Rivers: A Study of the History and Influence of the Harmon Doctrine,* 37 Canadian Bar Review 393 at p. 405 (1959).
The emphasis is my own.

[39] p. 43 *Boundary Water Problems: Canada and the United States,* Bloomfield and Fitzgerald Carswell, Toronto, 1958.

[40] p. 43, 44 *ibid.*

relative needs. It gave the economically efficient and inefficient user the same right to beneficial use without regard to the quantum of respective benefits taken.

> "Every riparian owner may divert the water of a stream for purposes in connection with his land, or for other purposes, but he is bound to return the water which he has diverted into the stream again before it leaves his land substantially undiminished in volume and unaltered in character; for a lower riparian owner, subject to the rights of an upper owner, is entitled to have the water flowing in the natural bed of the stream come to him unaltered in quality and quantity, and come to his land in its ordinary and accustomed channel."[41]

While the doctrine may have been suitable in early agricultural economies, where land was the principal source of wealth, it was less well suited to modern integrated industrialized economies (which had developed generalized productivity standards). In the latter, property was ideally vested in the market's highest bidder on the assumption that the enterprise which could pay the most was also the most efficient resource user (i.e., the most productive). In theory, the riparian doctrine impeded the 'free operation of the market'. Thus one finds that most common law jurisdictions have by statute abandoned the common law riparian principles. In British Columbia's case it was effected by way of the *B.C. Water Act*[42] which sets forth a schedule of allocation priorities amongst various user groups.

CANADA AND THE RIPARIAN DOCTRINE

It was for the very fact that the *riparian doctrine* offered protection to the user rights of the less efficient economic users, that Canada pressed for its retention on an international level. Prime Minister Sir Wilfred Laurier's remarks to the House of Commons after the signature of the *Boundary Waters Treaty of 1909* were revealing on this point when he said:

> " . . . the same principle should prevail in international law as prevails in the common law and the civil laws, namely that a man may make such use of the water that flows over his property so long as he does not do so to the detriment of anybody else . . . but in this case, whether we like it or did not like it, the United States has taken the position that international law provides that except in waters of navigation, the upper power has the right to use the water within its own territory as it thinks best. What were we to do?"[43]

Judson Harmon, on the other hand, had clearly recognized the implications of the argument put forth by Canada some fourteen years previously:

> " . . . what is really contended for is a servitude which makes the lower country dominate and subjects the upper country to the burden of arresting its development and denying its inhabitants the use of a provision which nature has supplied entirely within its own territory . . . in my opinion, the rules, principles, and precedents of international law impose no liability upon the United States."[44]

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[41] p. 559, *Halsbury's Laws of England, 2nd Edition, Volume 33,* Butterworth and Co. London, 1939.

[42] *B.C. Water Act R.S. 1948 c. 361.*

[43] pp. 911-912, *House of Commons Debates, Session 1910-1911, Volume 1.*

[44] p. 43 *Supra* Note 32.

Thus both the antecedent *Harmon Doctrine* and its Treaty embodiment, ARTICLE II, had at root the principle that national interests should transcend the international. While the latter may have made some allowance for damage compensation,[45] it nonetheless clearly asserted the fact that the source owner of boundary waters was in no sense under an obligation to maintain the quality or quantity of flow for the downstream land owners. If, as some argue, ARTICLE II still applied there would be no issue regarding the Shuswap-Okanagan transfer.[46] Regardless of the fact that increased flows might confer benefit upon the United States, Canada could at any time assert an apparent sovereign right under ARTICLE II to redirect all, or part of, the Shuswap flows back within their natural channel (i.e., the Thompson and Fraser).[47] Unfortunately, recent developments rob such an argument of much of its force.

THE COLUMBIA RIVER

A review of International Joint Commission references which was established and empowered by (Articles VII, VIII, IX, X, XI, XII and Appendix 2 of) the *Boundary Waters Treaty* appears to affirm the view that ARTICLE II remained in force until the Columbia River negotiations. At this juncture U.S. interest appeared to wane in its principle. Here was a case where Canadian and American positions were reversed from that which hitherto had been the normal. The headwaters of both the Columbia and Kootenay Rivers lay within Canadian territory, and now it was large scale Canadian development which was at issue. The United States had two vital interests to assert; namely in the development sequence contemplated by Canada and the rapidity with which it could be completed. This last point was compounded by the fact that head on the U.S. reaches of the Columbia were approaching full development, and yet, due to the lack of adequate storage, two thirds of the annual spring flow of 120 million acre feet (hereafter referred to as MAF) spilled uselessly over the top of the American structures each spring.[48] With depleting power reserves, and growing consumptive demands for water, it was essential that additional storage facilities be completed. It was also apparent that development of such structures would have to be within Canada. The cost of making the necessary reservoirs wholly within the U.S. promised to be exorbitant and would involve inunda-

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[45] See *External Affairs Committee Hearings, The Columbia River Treaty,* Department of External Affairs, April 1964, Volumes 1 to 20.

[46] p. 25 Armstrong et al., *The Columbia River Dispute,* Osgoode Hall Law Journal, Vol. 1, No. 1, June 1958.

[47] For that matter if Article II obtained Canada need not even consider diversion of Shuswap River flows for in the alternative she might then be able to tap either the Similkameen or the upper Arrow Lake of the Canadian Section of the Columbia. A tributary of the Upper Arrow is within five miles of the Shuswap River headwaters in fact.

[48] James G. Ripley, The Engineering and Contract Record, *The Columbia River Scandal,* April 1964, p. 34.

tion of large tracts of relatively valuable real estate. The U.S. second concern with the sequence of development had to do with the issue of control.[49] This problem rested upon both the type of projects[50] undertaken by Canada and the timing of project development decided upon.

THE COLUMBIA PROPOSALS

The joint Canadian-American International Columbia River Engineering Board, a sub-body of the International Joint Commission, in a 1959 report[51] advanced three alternative schemes of development in Canada regarding the Columbia and Kootenay (see profile inserts). Of these, one appeared particularly attractive to both parties. Known as the Dorr Diversion, or ICREB Sequence IX A (see diagrams headed "Canada Plan"), this scheme contemplated the diversion of the southern flowing Kootenay headwaters across a half mile strip of land known as Canal Flats and into the northern flowing Columbia which would in turn be dammed. This offered a number of obvious advantages. In the first case, hydroelectric energy is a function of the volume of available water and the altitude at which it can be stored. The Dorr, Bull River, Luxor sequence maximized the storage potentials of both rivers and retained it at the highest altitude possible. In the second case, the ICREB studies clearly indicated that the optimal power development site[52] for Canada lay downstream from the Dorr, Bull River, Luxor reservoir, near the point where the Columbia veers to the south, slightly below the Canoe River confluence point. Known as Mica Creek, this site was the virtual 'key' from which Canada had to approach development. Once Mica was constructed and machined it was apparent that the bulk of the storage of both the Columbia and Kootenay would be operated to suit its power requirements. As this posed a difficulty to the U.S. downstream plants, Canada proposed the construction of a small storage structure downstream from Mica known as Murphy Creek. This would allow a holdover of Mica releases until such time as the U.S. plants required the storage and thus would eliminate the threat that Mica's development posed to the U.S. interests, by preserving the ability to time storage releases (see map and river profile headed "Canada Plan").

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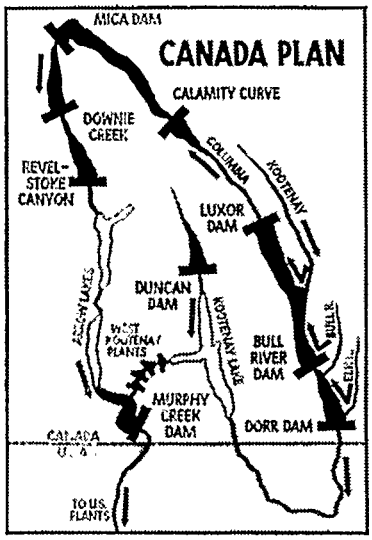
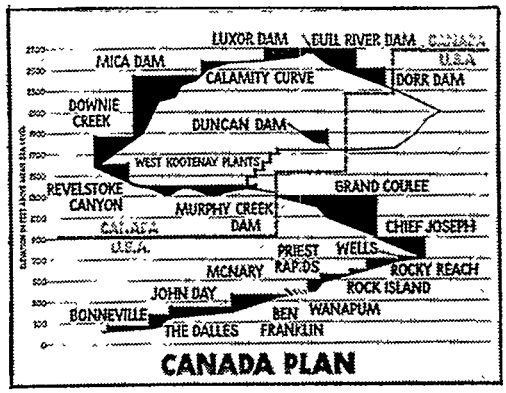
[49] This was estimated at between $700,000,000 and $1,000,000,000 in the event that Canadian co-operation was not achieved. p. 34, James G. Ripley, *The Columbia River Treaty,* Engineering and Contract Record, September 1962.

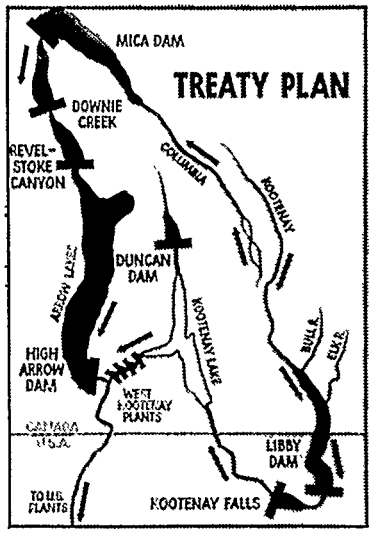
[50] A storage project for example would time its releases for downstream users. A large scale hydroelectric plant on the other hand would time its releases per the demands for power, potentially causing a conflict between upstream and downstream power plant operations. See Plate 4, 61BB, Report of July 1961 to British Columbia Energy Board, Sir Alexander Gibb, Mertz & McClelland.

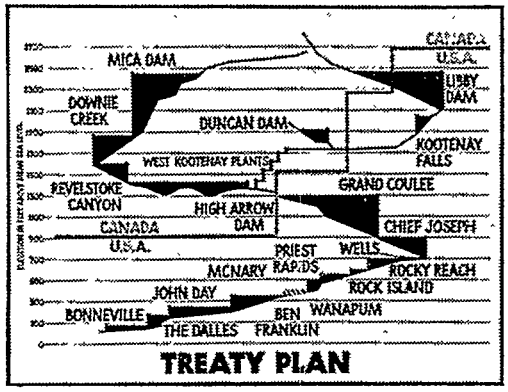
[51] The Report of the International Columbia River Engineering Board's research has been summarized in *The Columbia River Treaty and Protocol; A Presentation,* Dept. of External Affairs and Northern Affairs and National Resources, Queen's Printer, Ottawa, February 1969.

[52] This was due to a combination of altitude, valley conditions and bed rock levels.


MICA DAM
CANADA PLAN
CALAMITY CURVE
DOWNIE CREEK
REVEL-STOKE CANYON
COLUMBIA
KOOTENAY
LUXOR DAM
ARROW LAKES
DUNCAN DAM
KOOTENAY LAKE
WEST KOOTENAY PLANTS
BULL RIVER DAM
BULL R.
ELK R.
MURPHY CREEK DAM
DORR DAM
CANADA
U.S.A.
TO U.S. PLANTS


LUXOR DAM
BULL RIVER DAM
CANADA
U.S.A.
MICA DAM
CALAMITY CURVE
DORR DAM
DOWNIE CREEK
DUNCAN DAM
WEST KOOTENAY PLANTS
GRAND COULEE
REVELSTOKE CANYON
MURPHY CREEK DAM
CANADA
U.S.A.
CHIEF JOSEPH
PRIEST RAPIDS
WELLS
MCNARY
ROCKY REACH
ROCK ISLAND
JOHN DAY
BONNEVILLE
BEN WANAPUM
THE DALLES
FRANKLIN
CANADA PLAN


MICA DAM
TREATY PLAN
DOWNIE CREEK
REVEL-STOKE CANYON
COLUMBIA
KOOTENAY
DUNCAN DAM
ARROW LAKES
KOOTENAY LAKE
BULL R.
ELK R.
HIGH ARROW DAM
WEST KOOTENAY PLANTS
CANADA
U.S.A.
LIBBY DAM
TO U.S. PLANTS
KOOTENAY FALLS


CANADA
U.S.A.
MICA DAM
LIBBY DAM
DOWNIE CREEK
DUNCAN DAM
KOOTENAY FALLS
WEST KOOTENAY PLANTS
GRAND COULEE
REVELSTOKE CANYON
HIGH ARROW DAM
CANADA
U.S.A.
CHIEF JOSEPH
PRIEST RAPIDS
WELLS
MCNARY
ROCKY REACH
ROCK ISLAND
JOHN DAY
BONNEVILLE
BEN WANAPUM
THE DALLES
FRANKLIN
TREATY PLAN

Sequence IX A offered a number of advantages to the U.S. once Murphy Creek was included in the development schedule. On the one hand it enabled the maximum increase in output through the reduction of spill.[53] In addition it presented the opportunity to increase capacity by way of the expansion of existing facilities such as Grand Coulee, with a minimum of capital expenditure being necessary.[54] The selection of the Dorr Diversion in precedence to the other alternatives, meant that the U.S. would have to forego its planned Libby Power Development on the U.S. Kootenay[55] reaches, but this was without consequence so long as the output total by way of diversion was comparable and available at a lower per unit cost.

The marginal advantage obtained despite the fact that a proportion of the increased power made possible in the U.S. would have to be shared with Canada. The latter had argued that, because it was Canadian resources that were being devoted to realizing the structures, and because Canadian territory was being flooded, the U.S. downstream benefits (occurring at the U.S. generating plants) could be solely attributed to Canadian effort and should be therefore shared on a fifty-fifty basis. At first American reaction was strongly opposed to this assertion. It was the U.S. opinion that expanding Canadian power requirements made it inevitable that the Columbia River development would shortly take place in Canada. However, two factors eroded this reasoning. The British Columbia government was showing increased interest in the more northerly Peace River Power development; a power source which *prima facie* could be a subtitute for the Columbia development and thus make it unnecessary for Canada to harness the latter for a long time into the future. In addition Canada had under contemplation two collateral diversion projects that complemented the Dorr, Bull River, Luxor reservoir. One of these involved the rerouting of 15 MAF of Columbia water by way of the South Thompson to the Fraser River for the purposes of large scale hydroelectric development. The other contemplated a 6,000 cubic feet per second diversion out of the reservoir at Surprise Rapids to the North Saskatchewan River and thence the western prairies. The purpose of this was to augment the prairie water supplies and preliminary benefit forecasts for that region were staggering. By way of a combined consumptive delivery hydroelectric scheme, on the eastern slope of the Rocky Mountains, it was estimated that water from the Columbia could be introduced into the North Saskatchewan River at a cost of seven dollars per acre foot.[56] Water in the average Canadian prairie town has been estimated to have a value of $150 per AF.[57] Thus assuming constant price, the market value alone of this water to solely the

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[53] This was by virtue of the fact that diversion brought the Kootenay headwaters into the Columbia at a higher elevation than is otherwise the case.

[54] This owed simply to the fact that the required capital investment was in machinery and structure modification as opposed to incorporating turbines within a new structure.

[55] This is the American spelling applying to their section of the river.

[56] *Submission to the House of Commons Standing Committee of External Affairs by the Government of Saskatchewan on the Columbia River Treaty*, Regina, Saskatchewan, May 8th, 1964.

[57] James G. Ripley, *The Columbia River Scandal*, Engineering and Contract Record, April 1964.

agricultural sector, would be valued at $651,600,000 per annum. In addition, a portion of this water could well be applied to the leaching of Saskatchewan's enormous phosphate reserves.

DOCTRINE OF PRIOR APPROPRIATION VS. ARTICLE II

The threatening prospect of both diversions made it apparent to the United States that Columbia development, without an extra basin transfer, would have to afford an equal economic advantage to Canada, for, by virtue of ARTICLE II, the Canadian right to divert, from the Columbia at least, was not challengeable. However an attempt could be, and was, made with respect to the Kootenay. At this juncture the Canadian and American teams were in tacit agreement that no diversion should take place that interfered with existing U.S. or Canadian developments. In other words, the two entities recognized the principle that existing plants constituted an appropriation of flows which the upstream power should not reduce. Thus, so far as the Columbia was concerned, Canada could seemingly divert only those flows not already committed to U.S. enjoyment.[58] So far as the Kootenay was concerned Canada's exercise of the right to divert, by virtue of the want of development on the American section, was without a constraint. To combat this the U.S. section (of the joint commission) alleged[59] that the *doctrine of prior appropriation* extended to projects "under contemplation" as well as those realized. Thus they contended that plans to construct the Libby Project amounted to an appropriation[60] of Kootenay flows, curtailing Canada's right under ARTICLE II to divert across the divide to the prairies. The Canadian section rejected this argument as sophistry, knowing that to allow for it would be to pave the way for similar *'first in time first in right'* claims regarding planned expansion on the U.S. Columbia reaches.[61] Thus Canada would neither be able to divert to the Thompson headwaters.

Given that Canada had been thus far successful in partially establishing her rights under ARTICLE II with respect to both rivers, it was clear that every inducement would have to be offered to dissuade Canada from making extra basin water transfers; one of these being a concession to the Canadian demand for an equal sharing of downstream benefits. Yet, while the right to divert was beyond dispute with reference to the Columbia basin (at least at this juncture) it did not amount to an unequivocal re-assertion of ARTICLE II. It related solely to those flows uncommitted to downstream uses. Thus

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[58] The great wastage each spring implies that this right was tantamount to the right to divert *in toto* (waters of Canadian origin are equal to roughly 33.5 MAF over the spring period).

[59] *I.J.C. Docket 51.*

[60] This claim was in complete opposition to the earlier Waneta Order Reservation insisted upon by the U.S.

[61] To paraphrase the remarks of Gen. the Hon. A. G. L. McNaughton who was chairman of the Canadian section of the I.J.C. at the time. It is perhaps notable however that this rejection amounted to tacit recognition of the doctrine of prior appropriation respecting existing developments.

the Canadian stance really had no bearing upon other boundary waters where diversion would result in a preemption of a benefit already taken from the resource by the down-current state. The very fact that Canada did not dispute the *doctrine of prior appropriation* vis-a-vis already established downstream projects to some extent legitimizes an argument that the absolute right to divert under ARTICLE II was recognized by Canada as no longer applying.

Thus with reference to any flow increments arising from the instant Shuswap-Okanagan proposal, Canada cannot safely rely on ARTICLE II's provision regarding Canadian prerogatives as upstream owner of the resource in question. Quite to the contrary, the opposing *doctrine of prior appropriation* implies that *any right Canada may have had under cover of* ARTICLE II *to close off the Shuswap diversion, after it has once begun, has been abrogated.* The diversion as proposed may thus pass a property right of beneficial use which will remain beyond recovery for all time.

THE FEDERAL-PROVINCIAL DISPUTE

The above suggestion is further underscored by developments that followed U.S. recognition of Canada's right to a share of the downstream benefits and culminating in the finalized *Treaty Protocol* in 1964, for while Canada might have established the right to divert in and from the basin, she did neither (see diagrams headed "Treaty Plan"). While there was ostensibly international agreement that the Dorr, Bull River, Luxor Sequence IX A could proceed, Canada was beset with internal disagreement. The British Columbia government's involvement with the Peace River hydroelectric scheme had seemingly caused it to greatly over extend its financial commitments.[62] Already the issue had created political scandal,[63] and to the province it was essential that development proceed with a minimum of hindrance. The Columbia showed promise as a means of expediting this objective. Americans wanted power and to get it seemed willing to pay for both upstream storage and for the Canadian downstream benefit share. British Columbia for its own part needed the capital and, at the same time, did not want the power market flooded with electric energy that threatened pre-emption of the more

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[62] The actual extent that this was the case will forever remain somewhat of a mystery for the B.C. budget accounts are of a rather unorthodox form. They always show a surplus. One of the means by which this is done is to enter highways, bridges, power developments, and other public investments as contingent liabilities.

[63] The Peace Project, known then as Portage Mountain Dam was twice the distance from the Lower Mainland than was Mica (i.e.: the major load centre). Its locational authority upon regional economic growth was doubtful. As transmission is the most expensive element to power production its stimulant effect upon Lower Mainland growth was also highly speculative. As a consequence the then privately owned marketing company, British Columbia Electric Co., refused to take on the Peace power, instead pressing for maximum development of the nearer and less expensive Mica Creek power. In face of this the Social Credit government expropriated the B.C.E. in order that the Peace River project might proceed. Once the marketing vehicle had been established by way of the expropriation, B.C.'s sole concern regarding the Columbia was to some how turn it into a source of capital, with hopefully as little power being produced as possible.

expensive Peace River generation. For these reasons the province reached a stance in the negotiations diametrically opposed to that of the Federal government.

THE COLUMBIA GIVEAWAY

While (unfortunately) it is not relevant to this paper's scope to chronologize the political history of the final resolution of the British Columbia-Canada dispute, it is noteworthy to consider the terms of the Treaty outcome. The sequence adopted was known numerically as VII. By it no diversion was to be made of the Kootenay headwaters. The U.S. was given the option to construct the Libby Project on their section, and thereby create a reservoir which would flood forty-two miles into the Canadian Kootenay Valley.[64] The major Columbia storage was to be situated downstream from the Mica site in the Arrow Lake region. The structure known as High Arrow was to flood the Arrow Valley to an elevation of 1444 feet, and was not capable of being machined. Mica itself, now that it was deprived of most of its upstream storage control, was no longer so 'attractive' as a power source. Thus today the prospect of its being machined has been referred to as but a mere possibility. At any event, the power that it would be capable of producing would be relatively expensive. A third storage structure known as Duncan Lake was to be constructed on the Kootenay Lake northern inflow. In addition, it was agreed that Canada should give up the right to divert for power out of the basin per *Treaty Article XIII, Section 1.*

> "Except as provided in this article neither Canada nor the United States of America shall, without the consent of the other evidenced by an exchange of notes, divert for any use, other than a consumptive use, any water from its natural channel in a way that alters the flow of any water as it crosses the Canada-United States of America boundary within the Columbia River basin."[65]

This ended the prospect for a Columbia-Fraser diversion.[66] It also eliminated the Surprise Rapids prairie diversion for while a combined con-

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[64] Under sequence IX A a greater total area (91,000 acres) would have been inundated in the Kootenay Valley. But it is noteworthy that that land value vis a vis agriculture increases progressively, beginning at the point where it is useless, as one moves to the south. Thus the U.S. project submerges a greater value than would the Dorr, Bull River, Luxor reservoir. Of the 91,000 acres to be inundated, 24,000 are arable but require extensive reclamation. 2,500 acres is worked at present by some 40 principals. 25,000 could be reclaimed via swamp drainage but the Dorr, Bull River, Luxor reservoir would make some 300,000 acres available on the benchlands per a Prairie Farming Rehabilitation Association June 4, 1960 Report by S. C. Barry.

[65] Article XIII Section 1, *Treaty Between Canada and the United States of America Relating to Cooperative Development of the water resources of the Columbia River Basin,* 17 Jan. 61. Refer to art. I, s.s. 1, para e, as regards the treaty definition of consumptive use.

[66] A rather heated debate had arisen from the proposal respecting the possibility of harm resulting to the Salmon industry. Unfortunately this aspect was polemicized out of proportion and in a political sense B.C. was not unhappy about dropping the scheme.

sumptive hydroelectric scheme was economically justifiable, without the multipurpose aspect it was not. In return for these concessions the U.S. was to make the following payments:

Payment for	*Amount of Payment*	*At Date of*
Duncan Lake	$ 12.0 millions Canadian	1 April 1968
High Arrow	$ 56.3 millions Canadian	1 April 1969
Mica Creek	$ 1.3 millions Canadian	1 April 1973
Downstream Entitlements	$274.8 millions Canadian	September 1964[67]

Canada for its own part estimated that it would incur direct costs amounting to $410.6 millions in order to realize its commitments. This was a $66.2 million dollar excess of direct expenditures[68] over direct revenues, assuming cost estimates accurate.

THE EMERGING LEGAL AMBIGUITY

The final settlement had important failings over and above the financial aspects. These were basically twofold. In the first place the *Treaty and 1964 Protocol* did not create, or affirm, a 'rule of law' as to upstream, as opposed to downstream, water rights. Rather the agreement deleted much of the effect of the hitherto guiding principle of ARTICLE II of the *Boundary Waters Treaty,* both by the failure to exercise the right to divert that it conferred and by not clarifying the *doctrine of prior appropriation* as one limited in effect by ARTICLE II to questions of damage compensation. In this regard ARTICLE XVII of the *Columbia River Treaty* is of note. It consists of five sections purporting to deal with the restoration of pre-Treaty legal status. The first section provides that the *"then existing international law"* will apply to the Columbia Basin water resources upon the Treaty's termination. Thus it is made clear that, if the principle of ARTICLE II is pre-empted by way of a conflicting 'rule of law' agreed to by the two nations, the latter will take precedence. *Section two* provides that the *Boundary Waters Treaty,* at any event, shall apply only to the extent that it does not conflict with any provision of the *Columbia River Treaty* continuing in effect after termination. *Section three* would appear to afford a more substantial guarantee of ARTICLE II's applicability, for it provides that if the *Boundary Waters Treaty* is abrogated per its ARTICLE XIV,[69] the provisions of ARTICLE II shall remain in force respecting the Columbia Basin. However this guarantee is heavily qualified by *sections four and five,* the first of which provides that, in the

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[67] p. 138 *The Columbia River Treaty, Protocol and Related Documents.* Department of External Affairs, Northern Affairs, and National Resources, Queen's Printers, Ottawa, February 1964. This capital was invested in the United States at a considerable interest-earning disadvantage (i.e.: at 4½%). See Financial Post article by Larratt Higgins, May 25, 1966 at p. 25.

[68] Nonetheless it was maintained, by convenience of a series of value projections to 1973, that benefits would exceed costs by $53.4 millions. It was necessary to assume that the U.S. payments were not committed elsewhere in order to achieve this remarkable result.

[69] which requires one year's notice by either party.

event that the *Boundary Waters Treaty* is abrogated, and *Section 3* of ARTICLE XVII is brought into force, one year's notice on either side will cause ATRICLE II to also terminate. *Section five* allows the U.S. to remove the force of ARTICLE II of the *Boundary Waters Treaty* if Canada should divert for reasons other than the consumptive purposes provided for by ARTICLE XIII of the *Columbia River Treaty.*

Section five is perhaps the most crucial provision of ARTICLE XVII for it would appear to amount to a recognition that ARTICLE II is *'a created right'* instead of affirming a pre-existing one, by virtue of the fact that its effect is subject to cancellation.[70] Therefore, to the degree that the *Columbia River Treaty* is viable as a precedent in law, this redefinition of the status of ARTICLE II has decapitated much of its force as a 'rule of law'.[71] Yet it has been argued[72] that *Section 12* of the Treaty's *Protocol* eliminates this difficulty. Some doubt exists as to this contention.

> "Canada and the United States of America are in agreement that the Treaty does not establish any general principle or precedent applicable to waters other than those of the Columbia River Basin and does not detract from the application of the Boundary Waters Treaty 1909, to other waters."[73]

As can be noted, this section does not re-establish the *Harmon doctrine.* Instead it merely states that the *Columbia River Treaty* shall have no effect of itself upon the application of the *Boundary Waters Treaty.* But this is *not* to say that the U.S. is bound to recognize ARTICLE II, for they can quite properly argue that they did not consider it to be a 'rule of law' before the signature of the Treaty.[74] Additionally, the Protocol itself was ratified only in Canada. The U.S. Senate did not ratify it, and for this reason it does not have the force of law in the United States. In the extreme view it may possibly not have force internationally so far as the U.S. is concerned.

The second major failing of the Treaty was that it did not account for the consumptive value of the Basin's water resources. With growing urban and industrial preclusion of existing U.S. fresh water supplies, clean water has been assuming ever increasing value.[75] On the Columbia the Americans have constructed irrigation-dispersion facilities to make use of some of the incremental water supply resulting from Canadian storages. Strong pressure is being asserted by California to tranship a portion of this increment to the drier states to the south, and thereby take full advantage of the added storage.

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[70] *The Law Respecting International Rivers as Developed by Canada and the United States: A Survey and Recent Developments,* John Lorn McDougall, Osgoode Hall Law School (unpublished).

[71] p. 38 Hearing before *The Senate Committee on Foreign Relations,* U.S. Senate, E.X.C. 87th Congress, First Session, March 8, 1961 (i.e.: for elaboration of U.S. view as to treaty's effect upon Canada-U.S. trans boundary water law and Article II).

[72] *Supra* Note 45.

[73] *The Columbia River Treaty and Related Agreements, supra* note 67.

[74] The U.S. pre-treaty arguments concerning the doctrine of prior appropriation are consistent with this suggestion.

[75] To illustrate this point, in 1964, Columbia water was valued at $39 per AF when in the basin. Its total value was thus $7,200,000,000 a year. Considering that an AF of water can be as valuable as $300 in portions of California it can be seen that the benefits of a U.S. extra basin transfer are enormous.

It is suggested that, because vested interests are so immense[76] once water is applied to consumptive uses, the *doctrine of prior appropriation* will be forcefully applied so as to forever prevent consumptive diversions from the Canadian section. In this regard it is of note that, per ARTICLE XIII of the *Columbia River Treaty,* Canada is not given the paramount right to divert. So too has the United States this same right. Thus it would seem that once more it is a question of paramount right of ownership being vested in that party first in time to develop. Given that the south west is an arid area, with both a growing population and pollution problem, there can be little doubt that it will be the United States who will be first to make consumptive diversions.

This will be entirely to Canada's loss unless she can assert that, because she is upstream owner, and as storage is provided on Canadian territory, Canada is therefore first owner of the resource in a consumptive sense (even if not in a hydroelectric sense) and that delivery of this same water is a privilege for which some consideration proportionate to the value conferred upon the U.S. should be tendered. This is by no means to suggest that Canada should make such an assertion for the simple reason of making the United States pay a higher price. Rather it is clear that at some point in the future Canada will likely find that a large scale diversion out of the Columbia basin is to her advantage. For this reason it is important that it be established that the paramount property right of an upstream owner both still applies and extends so as to include consumptive uses.

It is suggested that two beneficial aspects would result from the re-establishment of such a principle. On the one hand will be created a 'rule of law' that preserves the sovereignty of the upstream country *vis-a-vis* waters occuring therein, as opposed to existing uncertainty arising from the *Columbia River Treaty.* On the other hand it would definitively reject an interpretation of the *Treaty* that has recently been given widespread publicity and support; namely the principle of a 'continental resource heritage' that should be allocated in terms of need alone without respect to the international frontier.

> "More recently we have seen our common interest served in the Canadian-United States Columbia River Treaty signed last year by President Johnson and Prime Minister Pearson at the Peace Arch on the border between Washington State and British Columbia. *Even though there are still some problems to be ironed out, the signing of the Treaty assures us that the water and energy resources of Western Canada and Western United States will be utilized for all time to come for the common good of both countries.*"[77]

The author to the above commentary, the Democratic Senator from the State of Utah, Frank Moss, is of the opinion that the Columbia precedent paves the way for a vast sharing of the continent's water resources. He has advocated, with some official recognition,[78] a scheme designated the *North*

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[76] *Ibid.*

[77] *The Congressional Record, 89th Congress, 2nd Session,* pp. 21786-87, Senator F. Moss, S. Utah. The emphasis is my own.

[78] A Senate select subcommittee was formed to study NAWAPA. See *Western Water Development; Special Subcommittee on Western Water Development* of the Committee on Public Works, United States Senate, January 1966.

American Water and Power Alliance which envisages a continental canal scheme funneling water of Canadian origin to the U.S.[79] While Senator Moss may represent the extreme interpretation of the *Treaty,* it is nonetheless one that is popular and, to some extent, *prima facie* accurate as matters now stand. It would appear Canada would be hard-pressed to find a principle of law objecting to this interpretation. It is suggested a precedent that would clarify the ambiguity of the Columbia River Treaty would be of enormous worth. It is from this aspect that the Shuswap-Okanagan integration derives most of its significance.

THE SHUSWAP, OKANAGAN, AND COLUMBIA: RECOMMENDATIONS

If a Shuswap-Okanagan diversion occurs there is a risk of an inadvertent international water transfer and all of the attendant problems being realized regarding property right in the water increment and jurisdictional difficulties over the Fraser Basin. If diversion does not occur, to the extent that fresh water might stimulate economic activity, and aid in the elimination of lake pollution, there will be a damaging effect upon the Okanagan region's future growth potential. It is suggested that a means exists to solve not only both of these difficulties but many of the ambiguities that are inherent in the *Columbia River Treaty* in a single undertaking.

The Columbia River lies a short mountain range away from both the Okanagan Valley and the Shuswap source waters (i.e., Mabel and Sugar Lakes). On the western branch of the Columbia River two large storage structures will ultimately be completed; one this year and another by 1973. While much of the storage created by both structures has been appropriated for hydroelectric generation under the downstream benefit sale agreement, it is still possible for Canada to divert a substantial measure of this storage for consumptive purposes. Possibly a large scale diversion may give rise to U.S. damage claims regarding a loss in hydroelectric production, but there is no provision in the *Treaty* that suggests that the interests of downstream irrigators and power owner-producers are protected by a property sanction paramount to Canada's right to effect consumptive diversions. Thus it is recommended that the point of origin for any water supply increments for the Okanagan be the mainstem Columbia itself.

There are a variety of ways by which this could be achieved both directly from the Columbia to the Okanagan or via the Shuswap to the Okanagan. It is this latter possibility which is perhaps the most attractive. One very important feature is the fact that Shuswap Lake, at some time in the future, would provide an ideal storage point for Columbia waters, allowing a large scale Columbia-Fraser diversion. It was in fact this very proposal which was

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[79] See *NAWAPA; North American Water and Power Alliance,* Ralph M. Parsons Co. N.Y., Los Angeles, Brochure 606-2934-19.

the subject of the B.C. Engineering Company study of 1956.[80] By virtue of this study there is available much in the way of background as to a Columbia-Shuswap diversion through the Eagle Pass. With little modification this scheme could be altered to accommodate the instant proposal by way of diverting into the northern inlet of Mabel Lake. Mabel Lake itself could then be controlled by a regulation structure near the town of Hupel. By this means the water requirements of the Okanagan could be satisfied without causing a loss to the Fraser basin, and at the same moment would permit development of the Shuswap River diversion as it has been studied.

A RE-ASSERTION OF ARTICLE II

Such a use of the Columbia water will have two immediate beneficial effects towards the creation of an international 'rule of law'. It will first of all establish beyond doubt that the prior appropriation of downstream U.S. power development does not impinge on Canada's right to make consumptive diversions but *is limited in effect to questions of damage compensation as provided by* ARTICLE II. Secondly, it will pave the way for an assertion that the upstream state has the right to divert for consumptive purposes consistent with ARTICLE II of the *Boundary Waters Treaty* (and ARTICLE XIII of the *Columbia River Treaty*), and will thus, as a precedent, support the argument that ARTICLE II is still a *rule* of international law as between Canada and the U.S. This result can be strengthened in the event that an additional recommendation is appreciated; namely that Canada deliberately divert a quantity of water greater than is, or will be, required by the Okanagan. This proposal has two basic stems. First, Canada must recognize a doctrine that in the past she rejected. Known as the *Montana doctrine,* this involved a U.S. claim that the upstream source owner held beneficial title over those flows occurring in the downstream state. At issue were the Waterton and Belly Rivers, both of which originate in the U.S. Canada proposed to make use of the entire flows of both rivers where they naturally flowed across the frontier. In 1948 the U.S. requested a reference to check this act of possession and asserted that the upstream state held a proprietary interest in the water even after it left its jurisdiction. They therefore requested that a *quid pro quo* return of one half the water thus coming to Canada be made to the State of Montana in consideration for the passing of U.S. title to this water. In effect this argument suggested that, although it was uneconomic for the U.S. to affect a pre-emptive diversion of the Waterton and Belly Rivers this still did not impinge upon their right of paramount title. At the time Canada ignored this argument. However, it is now within her interest to accept it. Once acknowledged Canada should re-invoke it with respect to the Columbia,

[80] Unfortunately this study had a number of limitations. For example it assumed entirely private development, and therefore higher taxation costs, that $308,000,000 in fish ladders and related equipment would have to be provided on the Fraser, that none of the ten structures would exceed 100 feet thus ensuring minimal scale power at low efficiency, and a water service equivalent to 85,000 KW for the ladders during spawning season. Unsurprisingly on this basis a Fraser diversion was unattractive.

and in particular with respect to that water diverted into the Okanagan. Having once asserted the right to divert, Canada is in a favourable bargaining position to demand consideration for those flows redirected back into the Columbia basin as respects their consumptive value. Acknowledgment by the U.S. in the form of consideration will establish, as a concomitant result, that Canada is first owner of waters occurring within its jurisdiction. This is the *Harmon doctrine.* Its re-establishment will pave the way for later beneficial consumptive use of the Columbia and Kootenay headwaters as Canada requires them.

FEDERAL PARTICIPATION

It is further suggested that the immense importance of this scheme safely brings it within the jurisdiction of the Federal government. In the event that British Columbia will not sanction the proposal, s.92 ss.10 paragraph (c) of the *British North America Act* should be exercised, by which this scheme should be declared to the "General Advantage of Canada".

> "92. In each Province the legislature may exclusively make laws in relation to matters coming within the classes of subject next hereinafter enumerated; that is to say, . . . 10. Local Works and Undertakings *other than such* as are of the following classes; . . . (c) Such Works as, although wholly situated within the Province, are before or after their Execution declared by the Parliament of Canada to be for the *general Advantage of Canada or for the Advantage of two or more of the Provinces.*"[81]

In addition the Federal government may rely on sections (3) and (4) of the *International River Improvement Act.*[82]

> "3. The Governor in Council may for the purpose of developing and utilizing the water resources of Canada in the national interest, make up regulations.
> (a) respecting the construction, operation and maintenance of international river improvements;
> (b) respecting the issue, cancellation and suspension of licences for the construction, operation and maintenance of international river improvements;
> (c) prescribing fees for licences issued under this Act; and
> (d) excepting any international river improvements from the operation of this Act."
>
> "4. No person shall construct, operate or maintain an international river improvement unless he holds a valid licence therefor issued under this Act."[83]

Federal participation under these enactments is perhaps advisable. The proposed diversion recommendations on the short term may appear to lack justification from an economic point of view. The benefits of a clearer rule of law are *intangible,* and it is possible that, for this reason, may be insufficient justification to the Province. *Nonetheless should the scheme permit beneficial use of the Columbia basin resources in face of the Columbia River Treaty the benefits are enormous* and spread over four provinces (i.e., British Columbia,

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[81] s. 92 ss. 10 para. (c), *A Consolidation of the British North American Acts 1867 to 1918,* prepared by Elmer A. Driedger, Queen's Printer, Ottawa, 1967. The emphasis is my own.

[82] *Statutes of Canada,* 1955, Chapter 47.

[83] *Ibid.*

Alberta, Saskatchewan and Manitoba) to which consumptive diversions would be of benefit. In addition, in a policy sense, it allows greater certainty through the elimination of the *Columbia River Treaty* ambiguities by establishing a precedent that clearly reasserts ARTICLE II and the *Harmon doctrine* to Canada's advantage. This it is contended will unequivocally put an end to recent U.S. suggestions that Canada has recognized the principle of 'continental water resources' that are the property of those in greatest need, and in this sense will preserve Canada's sovereign right to make independent use of all internally occuring water resources.