ALASKAN RESOURCES DEVELOPMENT: ISSUES FOR THE 1980s.

The topic of Alaskan resources development is broad and complex, and includes social, economic, and environmental issues; however, it cannot be completely separated from value judgments. In general, where human observation and analysis enter the picture, different individuals can reach different conclusions using the same data. This book is a good example of a reasonably thorough analysis, but appears to support a particular policy outcome. Perhaps its major contribution is the discussion of a policy continuum.

The book divides into six substantive chapters, each by a different author (including the book’s editor), and an Introduction and Conclusion by the editor. The topics include land policy, petroleum-based economy, non-fuel minerals and coal, renewable resources, environmental issues, and management of Alaska’s wealth.

From a general-interest standpoint, much of the book provides a good review and analysis of resource policy in Alaska. I was particularly impressed with Cooley’s chapter on the evaluation of Alaska land policy and Weedon’s chapter on environmental issues. Richard Cooley’s presentation of the diminishing role of the U.S. Bureau of Land Management as the chief federal land manager and the increasing roles of the U.S. Fish and Wildlife Service and National Park Service was of particular interest. The shift can be seen as away from multiple use toward more restrictive protection of the natural environment. My impression of this chapter was modified somewhat in the last few pages: Cooley concludes by indicating that a pro-development stance on the part of Alaska’s state government could be economically wasteful and cause damage to the environment. He develops this point with little supporting material, thus providing a conclusion before the analysis is complete. The chapter ends on the contentious theme that Alaskan resources are economically depleted.

Robert Weeden emphasizes four themes relative to environmental issues: trade-offs between development and conservation, colonialism, rural vs. urban Alaska, and anti-government reaction to environmental regulation. Weeden concludes by indicating that expansionist public policy will create environmental conflicts, and that an alternative approach emphasizing ecological research, maintenance of infrastructure, and better stewardship of resources will not (this implies a high savings potential by the Alaska state government). A strong bias is apparent toward the latter approach.

Arlon Tussing discusses the petroleum-based economy, and unfortunately develops too broad an analysis. My preference would have been to develop the case for petroleum by examining past policies and then discussing resource decisions. Tussing attempts to do this while delving into topics such as economic-base analysis, crude-materials processing, and “the emergence of Alaska as a cultural entity”. I would have appreciated more detail, and I believe the topics should have been developed in two chapters. Tussing also emphasizes the decline of world oil prices and the potential impact of oil revenues on Alaska state government. It should be noted that Tussing is a leading spokesman for this minority view of world oil prices. There are other petroleum economists (particularly in the Alaska Department of Revenue) using similar data, who have a more positive view.

A key point in Tussing’s chapter is the examination of Ugnu, a heavy-oil field on the North Slope near Prudhoe Bay. He indicates that if technology can be developed to tap this field by the time the main Prudhoe Bay oil field declines, “...it is likely to displace Prudhoe Bay as the largest oil field ever found in the United States or Canada.” The possibility of such technology being developed does not appear all that remote, although, as Tussing notes, the higher cost of production in Alaska makes such an oil field marginal.

The non-fuel minerals chapter by Brad Tuck makes a strong case for the market-test argument, government subsidizing of mineral development is not economically efficient. Based on economic theory, Tuck has a point, except that he seems to indicate that distribution and equity questions are secondary to economic efficiency. In other words, it is more important to obtain maximum return on investment than to provide for more equitable distribution of resources in society (e.g., regional employment). Economic theory cannot be the near-weak framework for efficiency evaluation, but has a limited, satisfactory analytical structure for equity questions. Using economic-efficiency criteria as the policy benchmark assumes that present ownership of resources and wealth by permanent Alaska residents will continue as it is. Tuck’s implicit value judgment follows the pattern that occurs throughout this book: i.e., the authors favor efficiency-based answers to policy questions.

Renewable resources are covered in one chapter by Matthew Berman. He begins by attempting to make a case for biological constraints on the development of renewable resources at high latitudes. I found his supporting material for this assertion to be meager. Biological constraints of various types exist in every forest, agricultural, and fishing region in the world. Farming in Alaska, with its short (based on frost-free days) growing season, is probably no more difficult than in Australia’s successful agricultural areas where moisture stress is often a major problem.

The highlight of Berman’s chapter is an informative discussion of common property resources in Alaska. This is the problem associated with public ownership and management of renewable natural resources. Generally speaking, federal and state governments have not given themselves to publicly owned resources to harvesting interests; they have only given harvest rights, e.g., for timber or fish. As the state population has grown, non-commercial, non-renewable, and other conservative user groups have become more vocal in proclaiming their rights to these resources. The outcome is a growing government “bureaucracy to referee user claims”.

I was particularly impressed with Berman’s discussion of agriculture. He seems to have read few, if any, of the myriad of studies on Alaskan agricultural development conducted in the past 10 years. Finally, he argues that growth in renewable resources depends on increasing “utilization of submarginal activities”. These are value-laden terms needing stronger support than is provided in this chapter.

Thomas Morehouse, in his chapter on Alaska wealth management, suggests a major relationship between economic growth and expenditures by the State of Alaska. He cites sources which indicate that 30% of current employment and business activity in Alaska is related to Prudhoe Bay. With the downturn in oil production that will likely occur some time in the next decade, coupled with low world oil prices, revenues to the state will be greatly reduced. These lost revenues cannot be replaced by other resource-development schemes in Alaska (an argument which recurs throughout the book), so a large economic contraction will occur.

This bleak scenario is based on conservative estimates of future events. It should be remembered that this is only one of several possibilities including development of the Ugnu field, a rise in oil prices, the discovery of another Prudhoe Bay-sized field onshore or offshore on state-owned submerged lands. Each of these scenarios has a probability greater than zero. But assuming the worst, or the Morehouse et al. outcome, what should the state government do with its royalties and taxes as long as Prudhoe Bay production lasts? The answer is based on value judgments and will be decided through public-policy decisions.

Morehouse provides a good analysis of the end points of a policy continuum. At one end is the economic-efficiency approach: the state should save and invest as much as possible in a portfolio which will maximize return for predetermined levels of risk. Resource development that does not meet the market test would not be subsidized. Such a strategy would tend to favor state and local-government employees, businesses dependent on government (state or local) business, and long-term residents. At the other end of the policy continuum is the market-test approach. State support for resource development, and high operating and capital budgets, would keep economic activity in Alaska at a high level for the next 5-20 years. This would directly benefit construction firms, resource-development interests, short-term residents (who stay in Alaska for the high salaries), and newcomers to the state.

The issue is that there are other groups, probably a large percentage of Alaska residents, who have sympathy with both extremes of the policy continuum. I expect that state government policy on this topic will be somewhere between the two end points, and will vary from year to year depending on new estimates of state revenues. Thus economic efficiency and distribution issues will both be considered in the policy process.

The book is nicely bound and has few typographical errors. One problem is the type size used: it is too small for easy reading. I understand that a soft-bound version has been printed with larger type size.

I found the book both interesting and somewhat provocative. It is valuable reading for those who wish to better understand Alaskan resource issues. It is essential to remember, however, that the interpretation of economic data relative to future events is to a degree, in the eye of the beholder.

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Paleoecology of Beringia, a collection of 24 edited papers, is the result of a symposium organized by its editors, held in June 1979 at Burg Wartenstein,
Austria, sponsored by the Wenner-Gren Foundation. The papers are organized into six sections, with a concluding summary and synthesis by the editors. Some were written after the conference. They range from very detailed, somewhat narrow contributions on the general theme of the symposium to major syntheses.

The volume will appeal to both specialists and other scientists interested in the nature of this unique Late Pleistocene environment. The symposium focuses on this environment’s productivity — how the apparent abundance of vertebrate fauna can be reconciled with a probably sparse vegetation between 45,000 and 11,000 B.P.

Setting the stage for the volume is a new geological and paleoenvironmental synthesis by David Hopkins, the acknowledged dean of Beringian studies. In a paper entitled “Aspects of the Paleogeography of Beringia during the Late Pleistocene”, he presents a regional Beringian paleoenvironmental chronology for the Late Pleistocene. Hopkins proposes four intervals, the Happy (655,000 years), the Bottouler (65,000-30,000), Duvanny Yar (30,000-14,000) and the Birch Zone (14,000-8,000). The Bottouler, the most ecologically productive, was the time of maximum development of the unique Beringian ecosystem, and the Duvanny Yar the most intense cold dry interval. At 14,000 B.P. a major climatic and environmental change occurred marking the end of Beringia. Hopkins’s new synthesis of the glacial, paleocological, vertebrate, and other data is, like his earlier synthesis (Hopkins, 1967, 1972) the “state of the art” statement on the overall characteristics of Beringia. It represents significant advances over our knowledge and conception of this lost environment which lacks modern analogues. S.V. Tomerdorion presents an accompanying paper to Hopkins’s on the evolution of the North-eastern Asian landscapes.

Five papers deal with the fossil record of the Beringian vegetation, focusing on the steppe-versus-tundra and productivity debate. They range from extreme conservative views, presented by James C. Ritchie and Les C. Cwynar in a paper entitled “The Late Quaternary Vegetation of the North Yukon” (they interpret the fossil record as representing an environment not particularly different from the more sparsely vegetated arctic regions today), to reconstructions of a more varied and prolific productive Beringian vegetation by most other authors. Palynology and macrofossils are discussed in a paper by Barry, deals with approaches to reconstructing the steppe-tundra climate, and the second, by Tzai-Gal Chan, with mathematical modelling. Both provide insights into the Beringian climatic system and some of its unique characteristics, much more of which remains to be understood.

A section entitled “Primary Production and the Pleistocene Ungulates - the Productivity Paradox” contains seven papers. They run the whole gamut of ungulate-related studies, from a paper entitled “Present-Day Arctic Vegetation and Ecosystems as a Predictive Tool for the Arctic-Steppe Mammoth Biome”, and P.J. Martin’s “Characteristics of the Mammoth: An Adaptation to the Arctic Steppe Environment”, by Henry Kubik. Three papers, including Redman’s, one by L.C. Bliss and James C. Richards entitled “Present-Day Arctic Vegetation and Ecosystems as a Predictive Tool for the Arctic-Steppe Mammoth Biome”, and P.J. Martin’s “Digestive and Grazing Strategies of Animals in the Arctic Steppes”, deal with present-day ungulates, grassland, tundra, and ecosystems. Although providing some insights into the Beringian community they do not, except for that of Bliss and Richards, integrate well into the volume, principally because most of the models presented or discussed are not viewed by the authors within the Beringian perspective. Bliss and Richards, in contrast, propose a model for nature, and nature not only of vegetation and mammals but also man and his dogs. They estimate carrying capacities of 15-25 persons per 1000 km2. While these estimates may be somewhat low, based on analogues from the Northwestern Plains grass-bison-mammal ecosystem, they provide a framework for examining the Beringian ecosystem from the human perspective. Bliss and Richards’s paper is one of the few in the volume to consider man as an integral component in the Beringian ecosystem, and is a welcome addition.

A paper by N.K. Versheshagin and G.F. Borshnikov reviews various aspects of the paleoecology of the mammoth fauna in Eurasia, providing the reader with useful information on the age, morphology, ecology, and biotopes of mammoth, woolly rhino, steppe bison, yak, and other species which characterizes the Northern Beringian region. The paper concludes that these ecological principles are applicable to the Beringian mammoth fauna and their environment. Oliver views their extinction as a result of environmental change combined with increased predation by man.

R. Dale Guthrie of the University of Alaska takes the steppe-tundra productivity argument a major step further, in a paper examining the ethnology and ecology of the mammoth fauna. Guthrie correctly points out that the great diversity, dietary specializations, gigantism, and ornamentation of the constituent species indicates a highly productive environment. As he correctly points out that the Beringian mammoth fauna is the only one which includes not only vegetation and mammals but also man and his dogs. They estimate carrying capacities of 15-25 persons per 1000 km2. While these estimates may be somewhat low, based on analogues from the Northwestern Plains grass-bison-mammal ecosystem, they provide a framework for examining the Beringian ecosystem from the human perspective.

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The Pacific was one of the most significant areas on earth for the origin of Early Man and the development of humankind. Scholars from nearly 50 countries have been working in the Pacific since the foundation of the Pacific Science Association in the 1920s, often meet in congresses of Pacific studies for the exchange of scientific information.

The XIX Congress, entitled “Environment of the Pacific Ocean for the Development of Humankind”, was held in 1979 in Khabarovsk, USSR. Eighteen papers, included in the monograph under review, were presented in one of the congress’s symposia, “Late Pleistocene and Early Holocene Cultural Contacts of North Asia and America”. The monograph is divided into two relevant sections: Ancient Cultural Contacts, and Chronology and Periodization. The papers, written by specialists from the Soviet Union, United States, Canada, and Japan, include: New Information on the Mongolian Paleolithic (A.P. Okladnikov); Cultural Contacts between Northeastern Asia and America on the Basis of the Late Pleistocene and Early Holocene Sites of the Kamchatka, Chukotka and the upper Kolyma River (N.N. Dikov); Levadlois Traditions of North Asia and North America (R.S. Vasil’yevsky); Paleolithic Population of Southern Siberia and Ancient Cultures of North America (G.I. Medvedev); On the Peopling of Sakhalin Island (V.A. Golubev); Evaluation of the Late Pleistocene and Early Holocene Archaeology of Coastal Alaska, the Bering Sea and Asia (R.E. Ackerman); Late Pleistocene and Holocene of Northeast Asia and Northwest America (A.L. Bryan); Early Cultures of Northern Northwest America (R.L. Carlson); Sinodontia and Sundadontia: Origin, Microevolution and Distribution of the Mongoloids in the Pacific, Siberia and America on the Basis of Odontological Data (C.G. Turner); Contacts of Northern Japan with American Preceramic Traditions During the Holocene (V. Herl, P. Bliz, and M. Isidzaki); Cult of Birds in California (E.A. Okladnikova); Small Tools from the Lower Horizon of the Kosma Site in Japan (T. Serizawa); Early Sites of the Middle Coast of British Columbia (F.M. Hobler); The Placement of the Yubileyny Site in the Stone Age of Yakutia (V.A. Kashin); Final Paleolithic of Trans-Baykal (M.V. Konstantinov); The Neolithic Site of the Chertyoro Vorota Cave (V.A. Tatarnikov); Archaeological Investigations in the Coast of the Western Tatar Peninsula (V.I. Dyakova and O.V. Dyakova); and Excavations of the Middle Age Mounds in the In River (V.E. Medvedev).

Although each of these articles is significant for the study of Early Man in the northern Pacific, I emphasize in this review those papers which deal directly with comparative studies of the two continents and some articles written by certain Soviet archaeologists which are not readily accessible to readers in the West.

In order to understand the problems of the peopling of North America it is necessary to familiarize oneself with the origins of Early Man in Siberia. Okladnikov’s and Vasil’yevsky’s articles address this topic in concise form. Researchers and Soviet scholars in recent years have extensively studied Early Man. In an attempt to establish the ethnogenetic origins of past human cultures, the questions usually asked have been directed toward the investigation of the migration of Early Man from the Old to the New World, and toward a definition of the geographical dimensions of archaeological cultures. The settlement of Siberia by Early Man was a lengthy and complex process originating in various regions of Asia and Europe, where human cultures had already long existed. Unlike the studies concerning Soviet Central Asia, southeastern Asia, and eastern Europe, no indisputable evidence has as yet been found to confirm the habitation of Siberia by man of the Lower Paleolithic period. The earliest Upper Paleolithic settlements of Siberia (except Ulalinka in Altay and the Kumara sites in the middle Amur) belong to the Karginsky interstadial or Sartan glacial (Tanjilin, 1979).

The spread of Early Man into new areas with severe winter climates also required a significant period of time for adaptation to the new conditions. The settlement of the expanses of Siberia, rich in natural resources but with difficult climatic conditions, was directly linked to a host of ecological and demographic changes occurring in areas already inhabited by man, from which were derived severe for migrations in the Near East. The first route originated in Soviet Central Asia (Kazakhstan, Uzbekistan, Turkmenia). In the latest Paleolithic settlements of the Altay and the Yenisey River, one finds Levallois cores and long blades similar to those found on the Kara-Kum desert on the Syr-Dar’ya River, near the city of Leninabad, and in the Khadzhikensky Cave near the town of Tashkent (Anisuykin and Astakhov, 1970). The hypothesis first suggested by Mergari, Savitsky, and Sal’moni (Khlyushkin, 1981) was expanded later by Okladnikov. In a number of his publications, Okladnikov defines a “Siberian-Mongolian Upper Paleolithic

REFERENCES


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Alaska and the Mammoth Steppe Biome” (as it deals with Eurasia) provides a wide-ranging and somewhat eclectic review of large mammal/mammal hunting sites, and the archaeology and palaeoecology of Western Europe and Asia including China. Müller-Beck concludes that man was well adapted by 40 000 years ago to the steppe-tundra and could have crossed the Land Bridge by that time.

Morlan and Cinq-Mars review the evidence for human occupation in the late Pleistocene of Alaska and the Yukon, including the controversial Old Crow bone technology, and the results of excavation at Blue Fish Caves and later terminal Pleistocene sites. They conclude that man was probably present more than 50 000 years ago. (Since then Morlan has revised his position at least twice.) Of particular importance are the Blue Fish Caves excavations, where both bone and stone artifacts occur in good stratigraphic context, which on the basis of Cinq-Mars’s 1983 site studies date to ca. 25 000 years ago. Blue Fish promises to become one of the key sites in unravelling the argument about humans vs carnivores as agents of bone modification centering around the bones found at Old Crow by the Archaeological Survey of Canada and W.N. Irving’s group from the University of Toronto. Whereas Morlan and Cinq-Mars devote considerable space to the work of Morlan et al. from the Archaeological Survey, they barely mention Irving’s group from the University of Toronto. Whereas Morlan and Cinq-Mars devote considerable space to the work of Morlan et al. from the Archaeological Survey, they barely mention Irving’s group from the University of Toronto. Whereas Morlan and Cinq-Mars devote considerable space to the work of Morlan et al. from the Archaeological Survey, they barely mention Irving’s group from the University of Toronto.

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