

drafted, but never proclaimed. The “biggest mistakes of the century” are identified as the transfer of diseased bison to Wood Buffalo Park, game farming, predator control attempts, “too many fishermen,” and loss of habitat.

There are a few errors of fact and interpretation. The two-page account of the Prairie Farm Rehabilitation Administration is unusually misleading when it speaks of 87 community pastures by 1999, omitting the fact that only one (in three blocks within the Suffield Military Range) of these PFRA pastures is in Alberta. The American White Pelican was threatened, never endangered (page 341). Gary Pelchat was born in Ponteix, not the never-existent Phoenix, Saskatchewan. David Munro is misspelled “Munroe”. The first two Franklin Arctic expeditions were hoping to find an arctic sea route, not an overland route to Asia. The index is inadequate, failing to index names of any organism

(e.g., pronghorn, ring-necked pheasant, and liver fluke). For consistency, the book title might better have been *Fin, Fur and Feathers*.

With pressure from an increasing urban human population, highways, and mechanization of farming, mining, oil extraction, forestry, dams and irrigation, it will be difficult to maintain biodiversity in the decades to come. Some hope may be gained from looking at both the successes and failures of the past.

A large book, it is too heavy for bedside reading. Caveats aside, this is a wonderful collection of information that should be in all major Canadian libraries, and read by everyone interested in the history of fish and wildlife conservation and management.

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The Gulf of Alaska: Biology and Oceanography

By P. Mundy 2005. Alaska Sea Grant College Program, University of Alaska-Fairbanks, Edited by Exxon Valdez Oil Spill Trustee Council.

Alaska is perceived “...as a place of wilderness, beauty and a special way of life”. This book describes the Gulf of Alaska (GOA), a region with many world records. Besides covering a huge area, having the third largest permanent ice field in the world and being a central place, crossroads, for almost all of the Pacific salmon, GOA also is among the most productive oceans in the world.

The introduction is a chapter on general oceanography for the lay public; the classic concept of the ‘Conveyor Belt’ is presented. Due to its ecological importance, I like the human footprint statement such as “Human uses of the GOA are extensive” and “... it is rare to walk the intertidal zone anywhere in GOA without seeing evidence of human activity”. The “...marine pollution and floating refuse from as far away as Asia, or originating from deliberate deep-ocean dumping or accidents at sea, can be swept north and westward around the shelf edge in the GOA. Trash from the international fishing industry operating 200 miles offshore is commonly found on beaches”. Further, one will read that GOA has arguably the best known rocky tidal zone on earth, and this small tidal zone is crucial for the ocean. This book admits climate change but leaves it somewhat undefined whether it is a man-made issue, or not.

The book contributors emphasize that to fully understand the ecology of GOA first one needs to make an effort to identify of all relevant species, e.g., plankton. Shrimp, once among the dominant benthic epifauna in Lower Cook Inlet, Kodiak and along the Alaskan Peninsula, declined after maximum harvests in 1977, and today its fishery is virtually nonexistent. Red King Crab crashed in 1980, and Tanner Crab fisheries are

down as well. The clam fishery in Cordova never recovered from damages brought by an earthquake. Despite its fishery of global importance, the two short paragraphs for the Pacific Cod section are rather uninformative. The fisheries for Walleye Pollock have been down since 1982. The Herring loss story for Seldovia Bay and Lower Cook Inlet is reported on as well. Salmon from Japan, Russia, British Columbia, all of Alaska and the Pacific North West spend some part of their life cycle in the GOA. The canned salmon industry collapsed in 1959, the year when Alaska became a U.S. state.

Despite all of this overwhelming evidences of limited ocean supplies, some book contributors still claim in their chapters the traditional views of “unlimited resources”. Other sections blame the “stocks” and anglers for their impacts (rather than their managers with a governmental mandate for safeguarding the public resource). Fortunately, sea floor dredging effects are explained, since fishery impacts to the soft-bottom benthic community are a possible driver of community change. It is suggested in the book text that this affects Steller Sea Lions as well.

Throughout, the book shows that for non-commercial species we lack management information. These species compose the bulk of the biomass. By-catch of the juvenile cohort occurs in fisheries like Herring, Pollock, and Salmon. However, for many of the non-commercial species the magnitude of this phenomenon is not really known, nor how much it affects these stocks.

Even apart from all of these severe marine issues mentioned in the book, the described terrestrial situation is equally puzzling: The book states that in the GOA, 24% of the water bodies listed are on the state’s list of polluted sites attributed to some aspect of logging.

The book makes clear that Alaskan "Subsistence Harvest" is a much-debated issue, a major political player in Alaska and beyond, and thus, well supported by the government. However, only 2200 people in the Exxon Valdez Oil Spill (EVOS) region actually still practice this form of life style. This must be among the most subsidized lifestyles in the world. The government uses undercover agents to report on how much natural resources are taken.

How much do Alaskans value their nature? This book provides an answer: Anchorage operates under a Clean Water Act Section waiver, only completing primary treatment of the sewage. The classic cocktail of PCB, DDE, DDT and Dioxin gets named several times, but there are many more pollutants in the Arctic. The complex toxic pollution of the Copper River is mentioned though. I think that most readers will get excited that the Alaskan government does not choose to monitor for environmental pollutants.

A seabird chapter deals with nesting species, not with its pelagic, non-breeding populations. Cliff nesting murrets and Black Kittiwakes are the most well studied; underground and nocturnal species are hardly known. The statements "There is no evidence that seabirds in the GOA have been directly affected by commercial fisheries" and "...do not compete with commercial fisheries for biomass" give the wrong impression. The book publishers need to be chastised for this misleading statement as it sets the stage for inappropriate environmental management policies in favour of economic activities.

Seabird starvation in GOA are mentioned several times; e.g., related to climatic ENSO (El Niño/Southern Oscillation) events. There is nice documentation of increased gull predation e.g., Glaucous-winged Gulls on Black-legged Kittiwakes, due to increased gull populations. The given Marbled Murrelet estimate of 200 000 nesting birds is likely low when compared with the authoritative literature. The provided nesting seabird population table is misleading since non-breeders occur in the region and thus, populations are higher.

The Minerals Management Services, EVOS, NMFS (National Marine Fisheries Service), and the Alyeska Consortium did extensive benthos survey and monitoring efforts in GOA in the 1970s. The reader is left wondering where these raw data are and this book does not help us to learn where to find them. One simply has to trust the "experts" blindly. This must set the stage for conflict.

The contaminant issue I find not well handled in this book either, considering that EVOS was a GOA event of global attention and recognition. Since this book is an EVOS publication one has to ask, what did we really learn from EVOS? There is no chapter devoted to toxicology or sections contributed by a professional Alaskan toxicologist. One will have a hard time to find much oil spill literature. At least we know, in 2000, 604 spills were reported in the EVOS GOA

region alone, proving we do have an oil and hazardous substances problem.

The book notes that there is a conflict between increasing development and loss of environmental quality in the GOA region (as found anywhere else in the world). Rats, ground squirrels and voles introduced in most of the Aleutians between 1700 and the 1900s make for a great example. Other examples include fox farms starting 1894 onwards, followed by canneries, the Klondike Goldrush of 1897, a copper mine operated from 1905 and the Northwestern railway built in 1911.

Marine mammals are elaborated on in greater detail: seal decline in 1973-2000 and the sea lion decline of approximately 83% (maybe >90%). The federal funding for investigating this sea lion decline is between 40 to 60 Million \$\$; a record in federal spending on one species. Was it a success?

The infamous Killer Whale story and their blame for the seal decline gets featured as well; e.g., in Prince William Sound, Killer Whales consume 400 seals each year (somebody has to eat the individuals of poor health; sharks were suggested as well). Killer Whales are believed to have suffered through EVOS.

Ecologists might be happy to see that the textbook example of how Sea Otters and their over-harvest links with Sea Urchin and kelp populations is mentioned. The book reports that lead in Sea Otters can now be traced directly to industrial sources, namely from North America and Asia, which makes for a great example for the need of international management in GOA (none of this is demanded in the book text though).

Overall, it remains unclear to me what the exact focus of this book is, and why it was published. Readers must see it as a major oversight that no professional contacts and addresses are provided for the 13 contributors or even editors. I found the content editing sometimes poor and not well structured. This becomes obvious in the multiple mentioning of the study area and its repetitive definitions and maps throughout chapters. Some of the chapter sub-headings are virtually similar to the chapter heading, other sub-headings and themes re-occur in other chapters. The quality and amount of citations varies throughout chapters. I like the abbreviation and acronym section because it also includes websites and their URLs. Some of the figures are stunningly made, but unfortunately in black and white.

It becomes quickly obvious that in concert with the many other signs and evidences there is something wrong with the natural state of GOA, and subsequently how it is managed. This book is a great example how unpublished and non-peer reviewed grey literature can rather add to confusion and is not achieving its goals for sustainable management.

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