# The Birds of Bristol Bay
## A Challenge to American Ornithologist

by Jim King
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There is no place in the northern hemisphere that attracts and supports the number of water birds as does the eastern Bering Sea of coastal Alaska. This is an isolated area of sparse human population and difficult weather conditions. The habits and distribution of bird life are little understood. Now the human development of the resources of the area appears to be beginning in earnest. Herein lies both a danger and a challenge; the danger that the natural abundance and distribution of the bird resource will be adversely affected and parts of it destroyed before it has ever been properly described; and the challenge to study this resource, describe it and insist that it be protected. This is a challenge moreover, not for future generations but for our generation now, because it is our generation that is already at work solving the technical and economic problems of exploiting the other resources of the area.

It is well known that the richness of marine habitat increases in the higher latitudes almost to the edge of the permanent ice packs. Water oriented birds as well as marine mammals, fishes and a vast array of invertebrates respond to this pattern. This phenomena is accentuated by the favorable location of the shallow waters of the continental shelf. Bering Sea is located just south of the permanent ice pack at the top of the huge Pacific basin

and the eastern side has a great expanse of continental shelf. Alaska's Bristol Bay forms the heart of this rich area.

Dr. Gabrielson has described an "Asiatic Flyway Route" and a "Mid-Pacific Flyway Route" as well as the North American "Pacific Flyway Route" all funneling migrant birds along the Alaskan coast of the Bering Sea. Birds that winter as far away as New Zealand, South America and the Pacific Islands pass this way enroute to Arctic nesting areas that spread from the Taymyr Peninsula in Siberia to Victoria Island in Canada. It is a way point for water birds of nearly one third of the globe.

Because Bristol Bay lies just south of the true Arctic, it is more than just another point on these extensive migration routes. The permafrost on land and the ice pack of the sea begin just north of Bristol Bay. It is then a staging area for birds waiting to rush north at the first sign of spring breakup in the Arctic. Especially when spring is late, the buildup of birds here is fantastic. Again in the fall, birds fleeing the early Arctic freeze-up linger a few weeks to rest and fatten up before continuing in many cases thousands of miles farther south. The value of the Bristol Bay habitat to many species of waterbirds cannot be overemphasized.

In addition to the transients, colonial sea birds running to the millions nest on the cliffs and islands of Bristol Bay. The shallow waters of Bristol Bay provide winter habitat for immense num-

bers of northern diving ducks and other seabirds. Huge flocks of seabirds that nest during winter in the southern hemisphere use these waters in the summer.

Unlike the water bird populations of the North Atlantic that have suffered the oil spills of two world wars and steady depredations on the breeding areas by many generations of a large human population, the birds of Bering Sea are relatively intact today. With a few exceptions such as the Eskimo curlew and the Aleutian Canada goose most bird species may still be present in pristine abundance.

This happy situation may soon end. For the past several years, foreign fishermen have been removing more than two billion pounds of ground fish annually from the eastern Bering Sea. Changes in the food chain may result. The enormous fishing fleets are depositing oil in the waters. Oil soaked birds have been picked up at the Pribilof Islands this year. The oil industry has expressed interest in the Bristol Bay area. This past winter, oil development leases were sold in two of the important lagoons of the Alaska Peninsula, Port Moller and Port Heiden. Should an oil strike be made, there is no knowing how extensive industrial activity might get. The effects of oil as a pollutant we can readily see and understand. Less obvious but equally deadly factors may develop or may already be threatening the welfare of these birds.

A large oil spill in Bristol Bay or the steady attrition from sloppy handling of oil over a long period could obviously affect

bird abundance of nearly one third of the world. A rather devastating prospect. Yet, if we examine more closely what little we do know of the habits of some individual species and their use of some more easily observed areas, the scene becomes even more gloomy.

On the north side of the Alaska Peninsula there are eight large and several smaller bays protected from the sea by barrier beaches. These bays are neatly spaced along the Peninsula, the southernmost being Izembek Bay, an important National Wildlife Refuge containing the largest eel grass beds in the world. Others are of refuge quality and have been suggested for refuge status.

In April some 250 thousand emperor geese depart their winter quarters on the reefs and beaches of the Aleutian Islands and head northeast. For about six weeks, they "leapfrog" from bay to bay up the Peninsula, following the retreating ice. Late in May, they cross the upper end of Bristol Bay and in early June appear on the Yukon Delta, their principle nesting area. The entire Alaskan breeding population follows this pattern. The emperor goose is not an abundant breeding bird in Siberia, in fact, it is scarce enough that it has been recommended for full protection from hunting. There is a possibility that the Siberian nesting emperors are with the Alaskan birds during this migration and that they continue on, following an established migration route across Bering Strait to the north coast of Siberia.

It is thus possible that a "gusher", a wrecked tanker or a broken pipeline within one of these bays in May could reduce the emperor goose from an abundant population to an endangered species or even extinction within a single season.

A major portion or all of the world's population of cackling Canada geese, black brant, Stellers eider and spectacled eider also use the bays of the Alaska Peninsula. Huge numbers of pintails, scaup, old squaw, scoter, King and Pacific eiders follow the Peninsula "leapfrog" route. The fall migration is more or less the reverse of the spring pattern.

On the north side of Bristol Bay on Cape Newenham is one of the great bird spectacles of America. There are 20 miles of cliffs here rising to 1500 feet on which nest more than a million kittiwakes, murres, cormorants, guillemot, auklets and puffins.

Bird Rock, Shaiak' Island, Cape Pierce, the Twins and Round Island have smaller but no less spectacular cliff colonies. The counterclockwise currents of Bristol Bay provide an enormous food source for these colonies. These same currents could bring floating pollutants from anywhere in the Bay past the bird rookeries. As these birds feed in the water, a major oil spill at or near one of these bird cities could wipe it out in a single day. Even nonlethal doses of oil deposited on eggs by incubating birds could be disastrous to production.

We know a good deal less of the habits of the gulls, loons, grebes, sea birds and shorebirds that nest immediately north of Bristol Bay

on the Yukon Delta and across the American and Asian tundra, but they must pass over Bristol Bay by the millions and they are known to feed and rest on the beaches and in the waters.

It might seem that I have been a little over-exuberant in describing the wonders of the Bristol Bay bird life. This is not so. The fact that I have barely touched the subject is illustrated by the following observations.

V. P. Shuntov of Vladivostok participated in a number of Soviet oceanographic cruises in the past few years making bird observations. He estimates that there are 75 wintering birds per square mile in the eastern Bering Sea, including various gulls, murres, guillemots and fulmars. This is the highest density of wintering birds found by Shuntov in any of the seas adjacent to Asia, including the Indian Ocean.

Alfred M. Bailey in his "Birds of Arctic Alaska", Herbert Brant in "Alaska Bird Trails" and Olaus Murrie in various reports have all described the endless flocks of eider along the west coast of Alaska. Accompanied by all sorts of other waterbirds, eider can be seen at any hour, thousands and thousands each day, passing a given point for a period of weeks. All these birds depend on the Bristol Bay staging area.

In 1956, Henry Hansen, FWS Waterfowl Biologist, and I observed a raft of eiders two miles off the Nushagak Peninsula in Bristol

Bay that was several hundred yards in width and extended some eight miles in lergth. A hundred thousand or more birds were obviously present and they were all immature king eiders. In May 1964, we observed an estimated 100 thousand geese on the waters of Chagvan Bay, a lagoon near Cape Newenham. About two-thirds of these were emperor geese, the remainder cackling geese and black brant.

Also in 1964, Mil Zahn, FWS Agent, reported a windrow of molted wing feathers eighteen inches high along the entire beach from Togiak to the Nushagak Peninsula, a distance of some sixty miles.

In July 1964, Bill Anderson, veteran waterfowl biologist, for the State of California, an area not unrenouned for its bird numbers, accompanied me on a trip to Cape Newenham. As we flew over Shaiak Island he pronounced, "there is a million birds down there". In the next few minutes we flew past the twenty miles of cliffs on the south side of Cape Newenham. Later Anderson stated, "I can safely say I've seen more birds today than I have ever seen in one day in my life, and all in half an hour".

Dave Spencer, FWS Biologist, described a raft of sooty shearwaters near Izembek Bay that extended for miles and miles and contained millions and millions of birds. Dr. Gabrielson described slender-billed shearwaters in a raft a little west of here that covered fifty square miles. He describes such an observation as "one of the most spectacular panoramas of life which this continent has to offer". Shearwaters, of course, nest throughout the southern

hemisphere from Cape Horn to Tasmania and are seen in northern waters only in summer.

These are the observations of veteran biologists not prone to using unwarranted superlatives.

So the seriousness of the present situation cannot be overemphasized. Possibly nowhere else in the world could the prospect of uncontrolled oil spillage pose such an overwhelming threat to bird life as in these coastal waters of temperate Alaska. Other pollutants less easily understood but equally lethal such as pesticides or atomic wastes may soon be present. Depletion of the fisheries could alter bird distribution.

The people of the United States through their Congress have shown that it is their will that migratory birds be protected from disaster at the hand of man. The people of Canada, Mexico, Japan, the Soviet Union and other countries have likewise expressed their interest in the preservation of birds. But the people are far away, so too are their elected representatives, the conservation societies they support, and the photographers and writers who keep them informed on world events. The development of resources in the Bering Sea will not be closely watched by a concerned local population.

At this point then there is only a handful of biologists who are capable of sounding the alert, advising the public, warning the resource developers of potential problems and intervening to pre-

vent the possibility of disaster for these bird resources.

This then is the challenge to the field of ornithology. We must study the ecology of the beaches and lagoons of Bristol Bay. We must learn the distribution of birds in the open waters of the Bering Sea. We must enumerate the abundance and location of the vast bird colonies. We must show the ways in which the birds can be protected and preserved in the face of extensive development of other resources. And above all, we must cry out should this development unnecessarily endanger bird life.

No future generation will have so awesome an opportunity or responsibility.