

INCREASING POPULATIONS OF RING-BILLED AND CALIFORNIA GULLS IN WASHINGTON STATE

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The number of breeding Ring-billed Gulls (*Larus delawarensis*) has been rapidly growing in at least one region of their broad range, that of the Great Lakes (Ludwig 1974). Several factors have been proposed to account for this increase, including greater availability of nesting sites, introductions of exotic fish, increased utilization of insects by the gulls and decreased human predation (Ludwig 1974, Jarvis and Southern 1976). In this report we examine the status of the Ring-billed Gull in the State of Washington, comparing current and past records of breeding colonies in the state. We also provide similar information on the California Gull (*L. californicus*) which often occupies colony sites with the Ring-billed Gull.

At the turn of the century the Ring-billed Gull was considered an infrequent visitor in Washington State and a sighting was considered worth reporting (Dawson and Bowles 1909). The first breeding record in Washington was apparently Kitchin's (1930) sighting at Moses Lake. Slightly later, Decker and Bowles (1932) reported a colony of California Gulls nesting on the Columbia River, somewhere in Benton County. The distributional list of Hudson and Yocom (1954) mentioned four colonies: on Moses Lake (both species), Sprague Lake (Ring-billed Gull), Twelve-mile Slough (Ring-billed Gull) and the Columbia River near Pasco (Ring-billed Gull). By 1954 the Moses Lake colony apparently had been abandoned, and a new colony started on the sand-dune islands of the Potholes Reservoir, immediately south of Moses Lake (Johnsgard 1954). In 1956 two new mixed-species colonies were established on the Columbia River at Ringold and Coyote Rapids, presumably from the abandonment of the Pasco colony (Hanson 1963). That same year another colony consisting entirely of Ring-billed Gulls was found on the Columbia River near Boardman, Oregon (Broadbooks 1961). Hence by the late 1950s at least five, and perhaps six, active colonies existed in the state. Unfortunately, data on colony sizes are available for only three of the colonies, the Boardman colony containing 300 breeding adults

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(Broadbooks 1961), Ringold colony 2,072 (Hanson 1963) and the Coyote Rapids colony 2,310 (Hanson 1963) averaging 1,561 per colony. Table 1 lists all former known Ring-billed and California gull colonies in the state that are now abandoned.

To obtain data on the current population, we surveyed the Ring-billed and California gulls in the State of Washington and along the adjacent Columbia River during the 1976 and 1977 breeding seasons. The number of breeding birds was determined by a direct count of nests in all but one colony (Three-mile Canyon colony) where the number of nests was estimated using a strip census method. Location, number of breeding adults, and year of first establishment for 11 currently active colonies are presented in Table 2. During our survey we located nine active Ring-billed and California gull colonies ranging in size from 254 to 8,760 breeding adults and averaging 2,942 per colony. In addition, Penland and Jeffries (1977) reported that 44 Ring-billed Gulls nested in two areas along the Washington coast. Altogether at least 17,468 Ring-billed and 9,052 California gulls nested in the state in 1977. Conceivably the present colonies are smaller in size than previously; however, the average number of breeding adults per colony calculated from our counts is above the largest of the three late-1950 colonies where numbers were reported. Indications are, therefore, that the total breeding population in the state has continued to rise during the last 2 decades.

Notably, of the 11 current colonies, only the colonies on Sprague Lake and Potholes Reservoir were mentioned by earlier authors. Moreover, 8 of 10 colonies existing earlier than the mid-1960s have since been abandoned. Evidently Ring-billed and California gulls shift colony sites frequently.

Ring-billed Gulls also are expanding their breeding range in the Northwest. In recent years they have started breeding along the Washington coast (Penland and Jeffries 1977) and in British Columbia (Merilees 1974). Also, in 1976 and 1977, we observed 20-40 Ring-billed Gulls unsuccessfully attempting to nest in northern Idaho on a small, periodically-flooded island in Lake Coeur D'Alene.

We can only speculate on the factors underlying the population increase of Ring-billed and California gulls in Washington since the early 1900s. Ludwig (1974) suggested that a similar population explosion of Ring-billed Gulls in the Great Lakes region resulted from a period of lowering water levels, which increased the nesting habitat, and from the establishment of alewives in the Great Lakes, which increased the gulls' food resources. It is unlikely that either of these reasons can account for the increase of Ring-billed and California gulls in Washington. In most parts of the state nesting habitat has been reduced because of the damming of the rivers. There also has been no introduction of exotic fish which could have substantially increased the food available to gulls.

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Table 1. Ring-billed and California gull colonies in Washington State that are now abandoned.

NAME AND LOCATION OF COLONY	SPECIES PRESENT	YEAR COLONY ESTABLISHED	YEAR COLONY ABANDONED	SOURCE
Boardman Colony - On the Columbia River 1 km upstream from Boardman, Oregon.	Ring-billed	Before 1956	Unknown	Broadbooks 1961
Peninsula Colony - On the Columbia River at the McNary National Wildlife Refuge.	Ring-billed	Late 1950s	1-2 years later	D. M. Litzenberger (pers. comm.)
Pasco Colony - On the Columbia River near Pasco.	Ring-billed California	Before 1954	1955-1956	Hudson and Yocom 1954, Hanson 1963
Ringold Colony - On the Columbia River near Ringold.	Ring-billed California	1956	1971	Hanson 1963, D. E. Miller (pers. comm.)
Coyote Rapids Colony - On the Columbia River 33 km upstream from the Ringold Colony.	Ring-billed California	1956	1975 (approx.)	Hanson 1963, R. E. Fitzner (pers. comm.)
Moses Lake Colony - On Moses Lake.	Ring-billed	Before 1930	1951-1952	Kitchin 1930, Harris and Yocom 1952
Lenore Lake Colony - On Lake Lenore.	Ring-billed California	Mid-1960s	1969 (approx.)	D. S. Galbreath (pers. comm.)
Twelve-mile Slough Colony - 12 km northeast of Benji.	Ring-billed	Before 1954	Unknown	Hudson and Yocom 1954

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Table 2. Ring-billed and California gull colonies in Washington State during the 1977 breeding season.

NAME AND LOCATION OF COLONY	SPECIES AND NUMBER OF BREEDING ADULTS	YEAR COLONY ESTABLISHED
Little Mernaloose Island Colony— On the Columbia River 5 km upstream from the Dalles Dam.	California 856	Unknown
Miller Rocks Colony— On the Columbia River 3 km upstream from the Deschutes River.	Ring-billed 960 California 60	Unknown
Three-mile Canyon Colony— On the Columbia River between Arlington and Boardman, Oregon.	Ring-billed 4380 California 4380	After 1968
Richland Colony— On the Columbia River by the municipal boat ramp in Richland.	Ring-billed 678 California 772	1970
Island 18 Colony— On the Columbia River 4-5 km upstream from the Richland colony.	Ring-billed 1726 California 426	1971
Cabin Island Colony— On the Columbia River 1 km upstream from Priest Rapids.	Ring-billed 250 California 4	Early 1970s
Banks Lake Colony— On the southern end of Banks Lake.	Ring-billed 5436 California 1690	Early 1970s
Sprague Lake Colony— On the western end of Sprague Lake.	Ring-billed 1702 California 428	Late 1940s
Potholes Reservoir— On several sand dune islands in the Potholes Reservoir.	Ring-billed 2292 California 436	1952-1953
Whitcomb Island Colony— In Grays Harbor (Penland and Jeffries 1977).	Ring-billed 4	1976
Willapa Bay Colony— In Willapa Bay (Penland and Jeffries 1977).	Ring-billed 40	First located in 1976

Table 3. Population, total cropland acreage, and irrigated cropland acreage in eastern Washington since 1900.

YEAR	HUMAN POPULATION	TOTAL CROPLAND	IRRIGATED CROPLAND
1900	191,513	-	-
1920	437,191	5,578,307	-
1940	509,845	6,361,946	-
1950	695,553	6,832,541	716,340
1960	813,857	4,033,226	1,093,709
1970	839,018	7,339,039	1,189,361

Jarvis and Southern (1976) have suggested that feeding on insects, particularly air-borne ones, is a recent innovation by the Ring-billed Gull that, in part, explains the population increase in the Great Lakes region. However, the taking of insects may not be a recent phenomenon because Bent (1921) reported that Ring-billed Gulls commonly feed on worms and insects, and Baird et al. (1884) reported an observation of this species hawking insects.

We consider the increase in Washington more likely to have resulted from decreased human predation on gulls and their eggs, and, probably more importantly, from increased food resources brought about by man's activities. Both farming and garbage depositories probably have dramatically increased the food resources available for these two gull species, which feed in both aquatic and terrestrial habitats. In addition, the creation of many reservoirs and irrigation canals has increased the total area of aquatic habitats, perhaps increasing some of the fish and aquatic insect populations on which these gulls feed.

Farming, especially irrigated farming, also has increased greatly in Washington during the past 50 years (Table 3), and some farming practices expose rodents, worms, insects and other prey that otherwise would remain concealed or inaccessible. Our observations of gulls following farm implements indicate that these gulls feed in cultivated fields and may be more adapted to do so than other birds which have more localized feeding areas. The social behavior and foraging strategies of gulls are adapted for obtaining food resources, such as fish schools, that are abundant in localized clumps but temporally unpredictable as to location. The sudden appearance of plentiful prey in variously located fields would correspond to this type of distributional pattern.

The human population in eastern Washington has also increased over the last 50 years (Table 3), and several of the current colonies in the state are located near towns or cities with municipal garbage dumps. Our observations of gulls congregated at dump sites and of food items delivered by adults to their young indicate that man-processed food at least supplements the natural diet and for some individuals may be a primary food source.

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