

U.S. FISH & WILDLIFE SERVICE
ECOLOGICAL SERVICES

DEC 0 1 1995

OLYMPIA, WA
RECEIVED

WASHINGTON COMMON MURRE COLONY SURVEYS 1995

Ulrich W. Wilson
U. S. Fish and Wildlife Service
Coastal Refuges Office
P.O. Box 450
Sequim, Washington 98382

November 1995

INTRODUCTION

Washington Common Murre colonies have been censused annually since 1979. The data show that, although the species was relatively abundant on offshore rocks and islands prior to 1983, murre colony attendance along the Washington outer coast has severely declined since then (Wilson 1991). ENSO events, oil spills, drowning by gill nets, and Navy bombing of breeding islands have been suspected as causes for the decline, but the data are too few to identify the reasons for the continued low murre use of islands and rocks in Washington. The Common Murre was the most frequent victim of several oil spills, including the recent Tenyo Mauru spill that occurred off the entrance of the Strait of Juan de Fuca. Funds for restoring seabirds killed by this spill are now available. In order to provide needed additional information on Washington Common Murre colony attendance and breeding chronology, a pilot project for expanded murre colony surveys was authorized to aid in restoration planning. This report summarizes the findings of murre colony surveys along the Washington coast for the 1995 breeding season.

METHODS

All known murre colony sites were surveyed from a Hughes 500D helicopter with the passenger side door removed. While hovering around or over the colonies at an altitude of 70 - 250 m numbers of murres were first visually estimated with 7x42 mm binoculars and a hand tally counter. Data was recorded onto a cassette tape recorder. The colonies were then photographed with a Canon EOS A2 35 mm

camera equipped with a Canon EF 70-200 mm f/2.8 L lens. Film was Kodak Ektachrome 400 ASA Elite. The visual estimates were made in case the photos did not turn out. In order to minimize air time at colonies at Carroll Island (because of endangered species concerns) and Tatoosh Island (because of concerns for ongoing studies) the visual estimates were foregone and only photos were taken. The surveys were flown on June 19 and 25, and on July 13 and 27. The colonies were surveyed between 09:30 and 14:00 hrs. The final murre estimates were obtained by counting the number of birds from the slides. For this purpose the transparencies were projected on to a paper flip chart. Small groups of murres (<30) were circled with a blue marker and then counted with a tally counter. This was repeated until the entire colony was counted. When murres were densely packed, or when the resolution of the slides was poor so that individual murres were impossible to distinguish, the number of birds within the small circled groups were estimated as well as possible. This method is identical to the one used by this author to estimate murres on the Washington coast during 1979-1982, and during 1987 when they were more abundant.

RESULTS AND DISCUSSION

During the 1995 census period between 4635 and 6640 murres were counted on refuge rocks and islands (Table 1). All of this year's refuge counts were higher than any of the counts during 1988 - 1994 (average: 3313; range: 565 - 4360). This increase was entirely due to a substantial gain in the colonies at the Quillayute Needles and on Carroll Island. Although more murres also appeared to use Tatoosh Island in 1995 than in 1994, the same statement cannot

be made for these colonies, since no comparable Tatoosh Island population estimates were obtained prior to 1994. This year's estimates for the Tatoosh Island complex varied between 480 and 1705 birds, comprising between 8 and 27 percent of murrees found on Washington rocks and islands.

While the increased presence of murrees at the Quillayute Needles and Carroll Island is encouraging, the overall picture remains essentially the same, with the three historically largest colonies (Grenville Arch, Split Rock, Willoughby Island) being deserted, with the exception of a few roosting murrees late in the breeding season.

The only colony where chicks were observed during the flights was Huntington Island. On June 19, a good number of medium sized chicks were seen on this island, while several large young were noted on July 13. Because of the large size of the Carroll Island colony, I visited the island on July 18 and checked the accessible upper portion of the colony for signs of breeding. There was no evidence of young, and only one abandoned murre egg was found in a patch of salal.

Attendance at refuge colonies peaked on July 13, and by July 27 the numbers of refuge murrees had already declined by 30 % overall. The birds at Tatoosh Island did not follow this pattern. Instead numbers during June 25 and July 13 were lower than during June 19, with the highest count being on July 27. The June 25 count would undoubtedly have been higher, had it not been for human disturbance on Rock # 023 just prior to the overflight. Upon arriving at the island, I noted a person making its way back to the main island from Rock # 023. Murrees at Tatoosh Island may have peaked after the last flight of this study.

Especially noteworthy is the observation that murrees were only recorded on several rocks during one of the four surveys. This suggests that some of

the periodic colony shifts that have been observed on the Washington coast may be due to murre roosting on various rocks intermittently. The 1995 data also show a significant negative correlation between average colony size and the maximum observed variation in percent. In other words, attendance at large colonies was more consistent than at smaller colonies (Spearman rank correlation, $n = 18$, $r = -0.690$, $P < 0.0025$). This is presumably also a reflection of murre using various rocks sporadically for roosting.

Because of ever increasing concerns about the responsible conservation of marine resources in Washington and elsewhere, future nurre colony surveys should involve censusing the islands and rocks the birds use several times during the breeding season.

LITERATURE CITED

Wilson, U. W. 1991. Responses of three seabird species to El Nino events and other warm episodes on the Washington coast, 1979-1990. *Condor* 93:853-858.

Table 1

COMMON MURRE COLONY SURVEYS, WASHINGTON OUTER COAST 1995
(No. of birds)

Isl. No.	Island Name	Survey Dates			
		6-19	6-25	7-13	7-27
586	Erin	110	0	110	55
585	Erin's Bride	395	35	105	80
575	Grenville Arch	0	0	0	0
570	Big Stack	0	0	605	5
529	Willoughby Isl.	0	0	35	0
531	Split Rock	0	0	170	70
483	Destruction Isl.	0	0	0	215
458	Middle Rock	0	0	0	0
409	Rounded Isl.	0	0	0	0
363	Table Rock	0	0	0	0
361A	Cakesosta	590	815	950	605
361	Huntington Isl.	2480	2460	2590	1755
357/358	No Name	280	225	205	140
333	Gunsight Rock	50	45	100	70
332	Petrel Isl.	0	50	80	75+
256	Jagged Isl.	0	0	0	0
269	Carroll Pillar	375	345	430	455
262	Carroll Isl.	815	1275	1260	1025
192	White Rock	110	5	0	85
023	Tatoosh Rock	660	0	355	925
022	Tatoosh Rock	110	70	60	60
035	Tatoosh Rock	165	190	190	200
021	Tatoosh Isl.	550	220	285	520
Total No. murre on coast:		6690	5735	7530	6340
No. within refuge:		5205	5255	6640	4635
No. at Tatoosh Island:		1485	480	890	1705