

SELECTIVE FACTORS AFFECTING CLUTCH SIZE IN THE WESTERN GULL ON THE FARALLON ISLANDS, CALIFORNIA

MALCOLM C. COULTER¹

ABSTRACT.—Western Gulls, like most gulls, usually lay clutches of three eggs. I examined selective factors affecting clutch size during both the egg and chick stages. I moved eggs and chicks among nests to create clutches and broods that were artificially larger and smaller than the usual three. Western Gulls are highly adapted to care for three eggs. They have three brood patches. They tended to sit for longer spells on three eggs than on larger or smaller clutches, and the incubation period was shortest for three-egg clutches. Hatching success was highest for three-egg clutches. During the chick stage, parents could raise more than three chicks. The greatest number of chicks fledged from five-chick broods. Chicks from the larger broods weighed less than chicks from the smaller broods. When the results from the egg and chick stages are combined, the greatest mortality occurred during the egg stage. I suggest that, at some time in the past, Western Gulls evolved three-egg clutches, and that the gulls have since become highly adapted to care for three eggs. These adaptations presently exert selection pressure maintaining the three-egg clutches.

¹ Savannah River Ecology Laboratory, P.O. Drawer E, Aiken, South Carolina 29802.