

## NEIGHBOR INTERACTIONS AND COOPERATION AMONG BREEDING HERRING GULLS: AN ALTERNATIVE INTERPRETATION OF GULL TERRITORIALITY

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**ABSTRACT.**—Theoretical studies predict that cooperation may evolve when individuals interact repeatedly and when costs and benefits to pairs of interactants are equivalent. These conditions apply to neighbors in territorial birds. One might expect neighbors in Herring Gulls (*Larus argentatus*) to be uncooperative because of the relatively high rate of chick killing by neighbors that has been reported in the literature. This mortality results from movement of chicks from parents' territories. Chick movement is a form of defection in a stable aggressive system based on site fixity and site-specific dominance. In previous studies of aggression in gulls, chick mortality probably has been exaggerated because of defections induced by human disturbance. A test of the above prediction regarding cooperation among gulls requires an examination of neighbor interactions in the absence of disturbance. In four years of study, we found that (1) mortality due to neighbors is rare in the absence of disturbance and (2) aggressive interactions between neighbors provides evidence for our hypothesis that cooperation between neighbors is an evolutionary force in coloniality.

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