

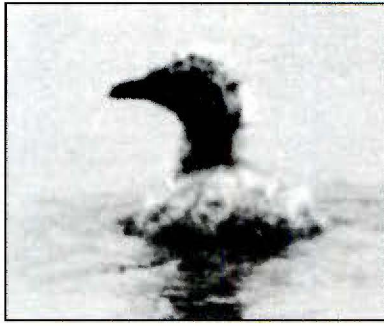
## Results

Loafing is a land-based rather than a water-based set of activities. More individuals were found on the beach as compared to the water, no matter the time of day. The average size of flock on land was 327 individuals and in the water was 50 individuals (N=19 flocks). In addition, of the 283 individuals observed first flying into the lake to loaf, only 19.4 % remained in the lake for an entire 10-minute observation period, while 78.4 % moved from the water to the land to loaf at some point during an observation. A trivial number (2.1 %) went from the water to the land and then back to the water during the 10 minutes of observation. In contrast, of the gulls flying to the beach itself, fully 96% remained on land during the entire observation period, while only 2.5% went into the water. A small number, 1.5 % went from the land to the water and then back to the land.

Five activities accounted for 90% of the time Ring-billed Gulls devoted to loafing: standing relaxed (16.3 %), swimming (13.3%), bathing (7.8%), preening (46.1%), and sleeping (6.6%). Thus the three self-maintenance activities (bathing, preening, sleeping) demanded about 60% of the time of loafing gulls.

## Discussion

The most dramatic differences between the ways Ring-billed Gulls spend their time at the colony and away from the colony is the time devoted to preening and the time spent in the water. According to Conover and Miller's work (1980), breeding Ring-billed Gulls devote only about 10% of their time to preening while they are at the colony and, by definition, spend no time in the water. Thus, if you add the time spent in the water to the time spent preening away from the colony, Ring-billed Gulls spend at least 55% of their time away from the colony differently than they do at



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the colony. The high proportion of time spent by gulls in self-maintenance may have reproductive consequences. It is known that parasitic loading diminishes the fitness of the host (Price 1980), and anti-parasitic behavior may require a great deal of the host's time. Ring-billed Gulls may have developed the strategy of using the beach as the place where they reduce their parasite loading by a high level of preening. Great Tits (*Parus major*) that occupy highly infested nests have been shown to reduce their nighttime sleeping significantly in order to sanitize their nests (Christe et al. 1996). Breeding Ring-billed Gulls may adjust their activity patterns by leaving the colony where their dominant preoccupation is territorial defense and care of young. Non-breeding gulls, often unwelcome at breeding territories, may devote a high proportion of their time to preening because any chance they have to be successful breeders in the future depends on maintaining their health in the present. Since they

are often forced to defend themselves at the colony, self-maintenance may require they leave the colony site.

The demonstration that Ring-billed Gulls have strikingly different patterns of behavior at and away from the colony raises several questions. Is there any relationship between reproductive success and the ability of gulls to leave the nest site and have sufficient time to loaf? Do other gull species exhibit such differences in behavior? It would be useful to have further research done to answer these questions.

## Literature Cited

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- Moskoff, Fooks, Ovrutskaya, Carson, Lindberg, Ward  
— William Moskoff  
Lake Forest College  
Lake Forest, IL 60045  
moskoff@lfc.edu