

# AVIAN DISEASE AT THE SALTON SEA

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## Introduction

During recent years, the Salton Sea has experienced an unprecedented array and frequency of disease outbreaks in migratory birds. A wide variety of bird species have been affected and some of these outbreaks have been of catastrophic proportions (Fig. 1). The frequency of occurrence, magnitude of losses and variety of diseases occurring at the Sea is indicative of an ecosystem under severe stress (Rapport and Whitford 1999). This presentation highlights the avian diseases occurring at the Sea, considers their importance as a factor in the conservation of migratory birds and comments on what is being done at the Sea to minimize bird losses from disease.

## Disease as a Concept

The occurrence of disease is an outcome involving three primary factors (Fig. 2). Those factors are susceptible hosts, agents capable of causing disease and suitable environmental factors that facilitate host-agent interactions in a manner that results in disease (Friend 1995). Therefore, the outcome of disease generally has an ecological basis and is not a random event. That outcome only occurs within the area of overlap between the host and agent depicted in Figure 2. Numerous factors moderate these relations in various ways. For example, factors that stress the hosts can increase their susceptibility to disease agents present in the environment; the environmental persistence