

## MSX parasite in oysters

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|--------------------|-------|
| Human Health Risk  |       |
| Ecological Risk    | L     |
| Socioeconomic Risk | M - L |

MSX refers to a disease of oysters caused by the protozoan organism *Haplosporidium nelsoni*. MSX (which stands for “multinucleated sphere X”) is also known as Delaware Bay disease. The protozoa were introduced to East Coast waters by an unknown source but have colonized oyster fisheries from Maine to Florida. MSX causes rapid death in highly susceptible oysters, and resulted in massive mortalities in Lower Delaware Bay estuary in 1957. Native populations in Delaware Bay have since grown quite resistant, although their numbers remain severely depleted relative to fifty years ago (see report on *Dermo* disease in oysters). Pollution does not appear to be a factor in the incidence or spread of the disease.

### What’s at risk?

Populations of the Eastern (aka American) oyster found in the Delaware Estuary and Atlantic coastal bays are at risk.

### What are the ecological impacts in New Jersey?

Since the 1990s, the prevalence and severity of MSX disease has been very low in the Delaware Bay, even though the infectious organisms continue to be present. It is hypothesized that the current native population, having been descended from oysters that survived the 1957 event, is highly resistant. The general decline of native oyster populations due to periodic catastrophic infection events over the past fifty years remains a concern; current harvests indicate about a 90% loss since 1950. Oyster population decline significantly reduces the filtration of suspended particles in estuaries such as Delaware Bay.

### What are the socioeconomic impacts to New Jersey?

Returning the oyster industry to historic levels would restore hundreds of jobs and contribute an estimated \$40 million to New Jersey’s economy. (Dermo parasites are included in this analysis.)

### What’s being done?

Control measures that are effective for Dermo disease are not generally effective for MSX. The best control for MSX is to culture resistant seed oysters in hatcheries, and to avoid seeding of wild oysters during the early summer, when risk of infection is highest.