

GLOBAL HEALTH ISSUES – MOLLUSCS

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This presentation aims to provide perspective on contemporary challenges and opportunities in the management of molluscan health.

While challenges remain from pathogens such as *Bonamia* spp. and *Perkinsus* spp., the list of critical contemporary issues begins and ends with emerging herpes viral diseases. A viral ganglioneuritis, listed by OIE as infection with abalone herpes-like virus, continues to plague abalone populations in Taiwan and Australia, but more troublesome has been the emergence of the molluscan herpes viral strain “OsHV-1 μ var” in populations of the Pacific oyster, *Crassostrea gigas*, a key global aquaculture species. This virus has been associated with high oyster mortality in Europe, Australia and New Zealand. These outbreaks have raised basic questions about viral diversity and evolution, especially with respect to virulence, and about mechanisms for transmission. They have also raised questions about our ability to detect and manage viral diseases of molluscs, particularly against a backdrop of international trade. The OsHV-1 μ var story is hardly one of a successful response to a serious emerging disease, but we can learn lessons from it.

Although infection with ostreid herpesvirus-1 has not been listed as an emerging disease because it does not meet the OIE criteria for listing (*OIE Aquatic Code* Article 1.2.2.), the Aquatic Animal Health Standards Commission has recommended that a chapter be developed on this infection for the *Aquatic Manual* to provide guidance for Members on this disease.

As human impacts on marine environments deepen, we are increasingly aware that environmental stressors may interact with pathogens and affect disease processes, though not always predictably. Some anthropogenic inputs may exacerbate diseases. It has been suggested, for example, that immunosuppression in the oyster *Saccostrea glomerata* in Australia caused by agricultural runoff has heightened susceptibility to disease caused by *Marteilia sydneyi*. Conversely, a recent study found that dinoflagellate *Prorocentrum minimum* may adversely affect the protistan pathogen *Perkinsus olseni*, raising the possibility that an external stressor such as a harmful algal bloom may actually help to mitigate molluscan diseases. Our understanding of marine molluscan diseases and identification of optimal strategies for their management will benefit from an understanding of these complex interactions. This promises to be a dynamic area of future research.

Keywords: OIE listed disease – molluscan diseases – herpes virus – OsHV – multiple stressors

