

Reconnaissance of Microbial (Bacterial and Viral) Pathogens in the Salton Sea

Synthesis Document

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Documented knowledge regarding the presence, abundance, or geographic distribution of microbial pathogens in the Salton Sea and the tributaries and agricultural drains that feed into the Sea is essentially non-existent. Only a few reports, completed by the Agency for Toxic Substances and Disease Registry (1996) and the California Regional Water Quality Control Board (1976-1995), contain data on microbial analyses, and the information is very limited and restricted to surface water from the New River near the International Boundary, points between the boundary and the Sea, and the inlet to the Sea. Microbial analyses were limited to fecal coliforms and fecal streptococci, both of which were found in high numbers at various times in the New River, indicating fecal contamination.

All other knowledge regarding the potential presence of microbial pathogens in the Salton Sea is indirect and based on isolation or detection of agents in sick and dead animals found in the Sea and vicinity (NWHC, unpublished data). Although it is likely that some of the agents found in sick and dead animals exist in the water and/or sediments of the Salton Sea, direct evidence is lacking and certainly no inferences can be made regarding their distribution and abundance. The following pathogenic bacteria have been isolated from sick and dead fish or birds from the Salton Sea or vicinity: *Aeromonas hydrophila*, *Clostridium botulinum* type C and type E (botulism), *Enterobacter cloacae*, *Escherichia coli*, *Klebsiella pneumoniae*, *Mycobacterium* sp (avian tuberculosis), *Pasteurella multocida* (avian cholera), *Pseudomonas fluorescens*, *P. putrefaciens*, *Salmonella typhimurium* (and unknown spp.), *Staphylococcus aureus*, *Streptococcus* sp., *Vibrio cholera*, *V. alginolyticus*, *V. damsela*, *V. parahemolyticus*, and *V. vulnificus*. Viruses found in dead animals at the Salton Sea include Newcastle Disease virus and an unidentified adenovirus.