FOR IMMEDIATE RELEASE

Revealing Extent of Toxic DDT Dumping in the Pacific Ocean Magnifies the Importance of Studying the High Prevalence of Cancer in Sea Lions

Dr. Alissa Deming and Pacific Marine Mammal Center to prioritize ongoing critical research of how persistent contaminants and Herpesvirus OtHV1 are positively associated with cancer in wild California sea lions.

LAGUNA BEACH, CA Wednesday, May 5, 2021 - Two recently published research papers have pinpointed that a sexually transmitted herpesvirus and high levels of contaminants, specifically DDT and PCBs, are the drivers behind the common genital cancer observed in wild sea lions off California’s coast. This research, spearheaded by Dr. Frances Gulland (University of California Davis - previously The Marine Mammal Center) and Dr. Alissa Deming (Pacific Marine Mammal Center’s (PMMC) VP of Conservation Medicine and Science), provides proof that the high amount of DDT wild sea lions are exposed to off the California coast has been causing major health impacts in the sea lion population for over 40 years.

With the recent and staggering confirmation by researchers at the University of California San Diego’s Scripts Institution of Oceanography of the magnitude of tens of thousands of barrels of toxic DDT dumped off the Southern California coast, there’s now an increased urgency to understand how continued low-term exposure impacts marine life and humans.

DDT (dichloro-diphenyl-trichloroethane) was developed as the first of the modern synthetic insecticides in the 1940s. According to the EPA, it was initially used with great effect to combat malaria, typhus, and other insect-borne human diseases as well as for insect control in crop and livestock production, institutions, homes, and gardens. DDT was officially banned in the U.S. in 1972 as studies revealed adverse environmental effects to wildlife and potential human health risks. Today, DDT is classified as a probable human carcinogen.

DDT can be passed from mother to baby (in humans and sea lions), so this exposure has a transgenerational effect, likely contributing to the decades of high cancer rates in sea lions off California’s coast. Studying the sick sea lions throughout the marine mammal stranding network can allow for a better understanding of how cancer develops and spreads in all species.

“Sea lions have been “telling” us the DDT is out there through the high rate of cancer showing up at rehab centers,” says Deming. “We can now study the diseases caused by this DDT exposure in sea lions to better understand the health risks to other animals and people. We need to do more research to better understand the mechanisms behind cancer and how DDT is inducing cancer.”

Dr. Deming is the chair of The Sea Lion Cancer Consortium (SLiCC), an international group of researchers investigating a variety of components of sea lion urogenital carcinoma. The Consortium meets twice yearly to discuss research findings, progress and future work that can be done to use sea lions as a model for studying cancer as well as indicators of environmental health (by measuring contaminant levels, immune function, etc). The three areas of future research include the effects of contaminants and hormones on the development of cancer, studying the progression of how the cancer spreads to identify potential markers to be targeted for treatment to block the spread of cancer in humans and animals, and how contaminant exposure is impacting the immune function and overall health of sea lions exposed to high levels of DDT and PCBs.

“The work in sea lion cancer is more critical than ever and will be prioritized as important as any project that we’ve ever done,” says Peter Chang, Chief Executive Officer at PMMC. “We are just now
discovering the extent of the DDT that is still at the bottom of our oceans along our coasts. What we now need to quickly and urgently get a grasp of are the implications of this to all life, animal and humans.”

This summer PMMC will have a graduate student come to PMMC for 6 months to work on a project looking for markers in sea lion blood that will detect if the cancer has spread throughout their body. Similar techniques are used in humans, for example women who have previously been treated for ovarian cancer have their blood regularly monitored to determine if the cancer has returned. This offers a non-invasive way to diagnosis and stage urogenital carcinoma in sea lions and will provide a way to screen larger numbers of animals for the disease while they are alive. PMMC also has several other projects in collaboration with University of Illinois, University of Florida and The Marine Mammal Center in Sausalito, CA.

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About (Pacific Marine Mammal Center)

The Pacific Marine Mammal Center rescues, rehabilitates and releases marine mammals and inspires ocean stewardship through research, education and collaboration. PMMC is a non-profit 501 (c)(3) organization. Our Tax-ID number is: 95-3680896

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