DECREASED PRODUCTIVITY AND INCREASED PUP MORTALITY AMONG NEW ZEALAND SEA LIONS (*PHOCARCTOS HOOKERI*) IN 2002

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The NZ sea lion is a threatened species and two unusual events contributed to an alarming decrease in recruitment in 2002. The first was a marked reduction of 20% in the number of pups born at the principal rookeries on the Auckland Islands. Counts of females at rookeries indicated that the lowered productivity was due to lowered fecundity rather than a reduced number of females. Hypotheses for reduced fecundity include, (1) reduced body condition of females as a result of inadequate nutrition caused foetal death and resorption, or (2) infection resulted in foetal death or abortion. In support of the former was the poor growth rate of pups in 2002 with male pups (n = 50) the lightest recorded for the previous eight years. The second hypothesis was supported by evidence of foetal death in a bycaught adult female. In addition to low pup production, the mortality rate for pups was significantly elevated and was 33% by the end of February. This is almost three times the mean for this time of year. Necropsies were conducted on 126 of 133 pups that died at Sandy Bay and for many the cause of death was multifactorial and included stillbirth, trauma, malnutrition, and severe anaemia caused by hookworm infection. However, the unusual disease syndrome that elevated mortality this season was characterized by systemic bacterial infection. This was often manifested by a variety of presentations including suppurative polyarthritis, severe necrotizing fascitis, myositis and osteomyelitis, suppurative peritonitis, pleuritis, or meningitis. For 41 pups, this syndrome was the primary cause of death and for an additional 16 pups it was a contributing factor along with hookworm infection or trauma. A consistent isolate has been *Klebsiella pneumoniae* with frequent isolations of *Salmonella* sp. Further investigations into sea lion foraging ecology and health are underway.

HISTOPATHOLOGICAL FINDINGS AND LEVELS OF TRACE ELEMENTS AND POP'S IN BOTTLENOSE DOLPHIN (*TURSIOPS TRUNCATUS*) STRANDED IN CANARY ISLANDS

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A retrospective study among 1997 and 2001, was made on resident populations of bottlenose dolphins (*Tursiops truncatus*), stranded in the Canary Islands (Spain). None of the dolphins studied (9) died with physical trauma. Histopathological studies after necropsy were realized, and toxicological studies were performed in blubber, liver and kidney from frozen samples of the tissue bank. Trace elements (Cu, Zn, Al, Cr, Cd, Pb) and organic compounds (PCB's, OC's, PAH's and organotins) were measured in blubber, liver and kidney. Other studies carried out on terrestrial mammals suggested the relationship between organochlorines and PCB's compounds and chronic pathologies such as: reproductive disorders, immunosuppressive conditions and neoplasia, affecting populations of these species and then having deleterious effect as their destabilization. Among whole values can be remarkable the following individuals: cet 78 with high levels in liver and blubber of PCB's and tDDT's, respectively (liver tPCB's: 52374 ng/g f.w.; blubber tDDT's: 15592 ng/g f.w.), and cet 124 with high levels in blubber of tPCB's and tDDT's (blubber tPCB's: 33212 ng/g f.w.; blubber tDDT's: 21050 ng/g f.w.). General histopathological findings on these individuals were related to a reactive non specific hepatitis, chronic intersticial nephritis and parasitic bronchopneumonia.With the exception of two specimens above related, tissue levels of compounds were similar to other geographical areas considered low and intermediate exposed. Although these levels of contaminants are not high, residuals are important in order to offer basic information about its potential relationships with cetacean mortality and morbidity, especially in those processes related with immune response and presence of infectious agents. In this way, further studies are being carried on to determine the presence of infectious agents (especially viruses), and its role in the pathogenicity of some histological findings.