Oiled Wildlife Care Network
Wildlife Health Center
PROJECT ABSTRACT

State the objectives, specific aims and the significance of the project, and describe the methodology used to achieve these goals. Avoid summaries of past accomplishments. The abstract is meant to serve as a succinct and accurate description of the work when separated from other portions of the proposal. Do not exceed the space allowed; 10 pt. font and singlespacing is allowed for this section only. Do not use abbreviations in the title.

P.I. NAME and AFFILIATION: Lisa Tell, School of Veterinary Medicine, University of California, Davis
FUNDING AMOUNT REQUESTED: $ 52808.00
PROJECT TITLE: Identification of inflammatory markers of oil exposure in mallard ducks (Anas platyrhynchos)

Abstract: The immune systems of wild birds are highly sensitive to contamination with petroleum products. Ingestion of crude oil spilled into the environment can cause both immunosuppression and inflammation, and immunosuppressed birds are more susceptible to infection and thus less likely to be successfully rehabilitated. Diagnostic tools capable of identifying the early stages of oil-induced immunosuppression and other oil-related pathologies could aid in prioritizing animals for rehabilitation, evaluating rehabilitation protocols, and monitoring the health of at-risk free-living wildlife populations. The objective of this study is to identify non-species-specific inflammatory markers that can provide information about the duration and severity of oiling and resultant health problems. To achieve this goal, mallard ducks will receive a one-time low, medium, or high dose of crude oil by gavage, or long-term (8-week) low level dosing in contaminated feed. Using functional (i.e., not species-specific) assays, seven acute phase proteins (APPs) will be measured at different time points during or following oil ingestion. One additional treatment group will receive bacterial lipopolysaccharide (LPS) to aid in distinguishing APP profiles of oiled birds from those experiencing bacterial infections. Histopathological examinations of tissues following treatment will help to determine which APPs are the most reliable indicators of declining condition in contaminated birds.