## Brown Pelican Survey Cosco Busan Incident, San Francisco Bay, California Prepared by D. Jaques, Pacific Eco Logic November 19, 2007

Brown Pelican surveys were conducted by D. Jaques, Pacific Eco Logic (PEL) at major communal roosts in the San Francisco Bay area following the Cosco Busan oil spill. The California Department of Fish and Game Office of Spill Prevention and Response contracted PEL to investigate potential damage to Brown Pelicans following reports of oiled pelicans from other sources. The incident occurred on November 7, 2007. PEL surveys to check specifically for oiled pelicans took place in the primary affected area over a 3-day period, November 15-17.

Roost site surveys included the central San Francisco Bay (Alameda Breakwater), the outer coast on both sides of the mouth of the Bay (Seal Rocks/Sutro Baths, Point Bonita/Rodeo Lagoon) as well as Half Moon Bay (Pillar Point Harbor) and Bolinas Lagoon. All surveys were conducted from the ground with a spotting scope with the exception of the Alameda Breakwater and Pillar Point breakwater roosts. These two sites were surveyed by boat to allow for close inspection of plumage.

Several pelican roost sites within the spill area were not checked for oiled pelicans by PEL due to logistical constraints. A major roost site on the Point Reyes peninsula (cliffs at Point Reyes) was visited on November 17, but pelicans could not be adequately checked for oil due to foggy conditions. Offshore rock roosts in the Point Reyes (Stormy Stack and others) were to be surveyed by USFWS (G. McChesney) on the same date, but fog precluded those observations as well. Most sites along the Pt. Reyes Peninsula require relatively long walks from shore to view. Smaller roosts within San Francisco Bay were also not surveyed by PEL. A biologist from OSPR (L. Henkel) counted and checked plumage on pelicans by boat in San Pablo Bay during the same week. PEL did not conduct surveys of pelicans took place along the western shores of San Fransisco Bay, however, no large aggregations of pelicans were known to occur there. The Fisherman's Wharf area was checked by PEL on November 15, but no roosting pelicans were found there.

The total number of pelicans inspected by PEL for oiled plumage was 1,194. Of the total, oil was detected on 9 birds; 3 were in adult plumage and 6 were immature. The degree of oiling seen on these free-flying birds was light and spotty, covering less that 10% of the body in each case. At Seal Rocks, pelicans were largely inactive and in most cases the belly region was out of view, therefore, some oiled pelicans may have been missed. Survey results revealed a high proportion of adults present in the area. Of 1,308 pelicans aged, 89.3% were adult. A spreadsheet is attached showing basic data from the surveys.