

## Final Summary

Among all otter species in the world, there are only two obligatory marine-living otters, the sea otter (*Enhydra lutris*) and the marine otter (*Lontra felina*). Although the marine otter distributed along all the Chilean coast, there is a lack of information about how human settlements and activities affect the species ecology, behavior and distribution. Furthermore, there is absolutely no information about veterinary aspects related to handling, trapping and diseases. Therefore this study assessed the spatial behavior of radio-tagged marine otters and anesthesiology parameters associated to the otter trapping and handling, and the letter transmitter implantation in the otter's abdominal cavity.

Between April and December 2004 the study was performed in a seashore associated with a fishing village in central Chile. Twelve anesthetics were evaluated in nine marine otters in cooperation with a radiotelemetry project. Anesthesia consisted in ketamine 5.4 mg/kg i.m. (DS  $\pm$  0.9) and medetomidine 54 ug/kg i.m. (DS  $\pm$  9), antagonized by atipamezole 228 ug/kg i.m. (DS  $\pm$  30). Initial effect time, latency period and reversal time were recorded. Anesthesiologic (sonorous stimuli response, jaw relaxation, general attitude, and pedal reflex) and physiologic parameters (rectal temperature, cardiac and respiratory rate, capillary refill time, relative oxyhemoglobin saturation and mean arterial blood pressure), were monitored at 5-min intervals for 30 min. Anesthetic induction was rapid and smooth with a successful antagonism by atipamezole. Decrease of the rectal temperature reached 36.6°C (DS  $\pm$  1.4). Relative oxyhemoglobin saturation had an average of 89% (DS  $\pm$  9), and a mild hypertensive state, with a maxim mean arterial blood pressure value of 111 mm/Hg (DS  $\pm$  30) occurred. Further, home ranges, core areas and territoriality, from data of six radiotracked otters were assessed. Marine otters were solitary but not territorial, home ranges were up to 3,657 m long, and less than 132 m wide with no differences between sexes. Marine otters spend 81% of their time on land mostly resting with no preference for day or night, so core areas were associated with resting places and dens. Otters concentrated their activity in the littoral zone associated to refuges on land and fishing wastes, which were used as a food resource. The availability of refuges on land, combined with their distance to appropriate levels of food resources could be decisive for *L. felina*, and therefore influence the distribution of the species.

In conclusion an intramuscular mixture of 5 mg/kg ketamine and 50 ug/kg medetomidine, antagonized at 45 min by 250 ug/ atipamezole produced an effective anesthesia with good quality and deepness in marine otters. Marine otters appear no to be territorial and shows small home range in relation to other otter species. Marine otters can coexist with human. However, marine otters interact with dogs associated to human settlements and wastes, and so this interaction can end in otters killed or facilitated disease transmission. Furthermore, for the amount of time marine otters spend inside their resting places or dens, the choice of a warm or well-insulated and secure resting place could therefore be important. Thus, in seashores intensively used by humans, the equilibrium between optimal resting sites and dens and their distance to appropriate levels of food availability could be decisive.

Data obtained on this study, was use in the design and implementation of a study between December 2004 and February 2006 to assess the effect of human use of the Chilean coast on the distribution of the marine otter along 1,500 km of coast, in order to understand environmental variables which could be determining the species decline at a large scale.