First records of skin lesions in coastal dolphins off southern Chile

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ABSTRACT
Since the austral summer 2003, the ecology of coastal dolphin species, and the potential threats affecting them, are being studied in the Chilean southern fjords, where intense aquaculture activities are developed. The main objective of this study was to detect skin lesions in coastal dolphins in southern Chile. The presence of skin lesions in Chinese (Stenellalongirostris) and bottlenose dolphins (Tursiops truncatus) was assessed by examining digital photographs obtained during 103 marine surveys conducted between January and May 2003 and 2004 in two fjords of southern Chile (42°22'S, 72°24'W). Approximately 350 pictures have been examined: 128 images of 13 identified Chinese dolphins, 173 images of 41 identified Peale's dolphins, 15 images of two bottlenose dolphins and 34 images of several unidentified Burmeister's porpoises. Skin lesions have been detected in T. truncatus, L. cruciger and C. eutropia. Remains of tattoos and tattoo-like lesions were observed on 3 adult C. eutropia, tracked from 11 January to 22 February 2003, exhibiting several blister-like lesions that grew over time. These investing lesions may be of mycotic origin, possibly a lobo's disease caused by Loboa loboi. The calf had obvious difficulties in breathing and swimming, possibly reflecting lung infection and general health decline. A female bottlenose dolphin presented lesions similar to "ring lesions", an earlier form of tattoo disease. Undergraduate lesions have been observed in several Peale's dolphins. Although tattoos affect several species of small cetaceans worldwide, no skin lesions had ever been reported in Chile. Aquaculture activities in the study area generate diverse vectors contributing to important pathogen dispersion and release of antibiotics, which are potential threats to marine animals. These first observations on skin lesions in dolphins may be related to a deteriorating environment, probably associated with aquaculture activities, which should be considered in future research and management.

INTRODUCTION
The channels, fjords and archipelagos of southern Chile are home for a high diversity of small cetaceans such as: Atlantic white-sided dolphin (Lagenorhynchus obliquidens), dusky dolphin (L. obscurus), common dolphin (Delphinus delphis), bottlenose dolphin (Tursiops truncatus) and Future work should address estimates on prevalence of skin lesions in relation to seasons and sex. A female bottlenose dolphin, observed with 128 images of 13 identified Chilean dolphins, 173 images of 41 identified Peale's dolphins, 15 images of two bottlenose dolphins and 34 images of several unidentified Burmeister's porpoises. Skin lesions (or lesion-like) have been described in T. truncatus, L. acutus and C. eutropia. Remains of tattoos and tattoo-like lesions were observed on 3 adult C. eutropia, tracked from 11 January to 22 February 2003, exhibiting several blister-like lesions on both flanks and head that grew over time. These investing lesions may be of mycotic origin, possibly a lobo's disease caused by Loboa loboi. The calf had obvious difficulties in breathing and swimming, possibly reflecting lung infection and general health decline. After February 22, its mother was observed alone, assuming the death of the ill calf. A female bottlenose dolphin, observed with 8 calves, presented lesions similar to "ring lesions", an earlier form of tattoo disease. Finally, Pacific white-sided dolphin presented several type of skin lesions, which have not been classified yet.

RESULTS
Approximately 360 effort-hours during 103 marine surveys have been achieved, obtaining more than 5000 digital photographs of dolphins. More than 350 pictures have been examined: 128 images of 13 identified Chinese dolphins, 173 images of 41 identified Peale's dolphins, 15 images of two bottlenose dolphins and 34 images of several unidentified Burmeister's porpoises. Skin lesions (or lesion-like) have been described in T. truncatus, L. acutus and C. eutropia. Remains of tattoos and tattoo-like lesions were observed on 3 adult C. eutropia, tracked from 11 January to 22 February 2003, exhibiting several blister-like lesions on both flanks and head that grew over time. These investing lesions may be of mycotic origin, possibly a lobo's disease caused by Loboa loboi. The calf had obvious difficulties in breathing and swimming, possibly reflecting lung infection and general health decline. After February 22, its mother was observed alone, assuming the death of the ill calf. A female bottlenose dolphin, observed with 8 calves, presented lesions similar to "ring lesions", an earlier form of tattoo disease. Finally, Pacific white-sided dolphin presented several type of skin lesions, which have not been classified yet.

Fig. 4: Salmon farms in southern Chile. Remains of tattoos and tattoo-like lesions were observed on 3 adults C. eutropia, tracked from 11 January to 22 February 2003, exhibiting several blister-like lesions on both flanks and head that grew over time. These investing lesions may be of mycotic origin, possibly a lobo's disease caused by Loboa loboi. The calf had obvious difficulties in breathing and swimming, possibly reflecting lung infection and general health decline. After February 22, its mother was observed alone, assuming the death of the ill calf. A female bottlenose dolphin, observed with 8 calves, presented lesions similar to "ring lesions", an earlier form of tattoo disease. Finally, Pacific white-sided dolphin presented several type of skin lesions, which have not been classified yet.

Fig. 5: Chilean dolphin calves. A) healthy calf B) ill 11 January C) ill calf 24 February D) ill calf 11 January

ACKNOWLEDGMENTS
The Rufford Maurice Lea foundation partially financed this project. Logistic support has been given by Parque Fundacion. The authors would like to thank the contributions and suggestions of Rodrigo Hidalgo-Guzman and E. A. G. and Chile Sea Support Unit, with financial aid to participate in this conference. Volunteers and Freedon also deserve our gratitude: Loreto Balkenhol, Sandra Ribeiro, Juan Pablo Torres, Ana de la Torre and Carolina Zagal.

DISCUSSION
Skin lesions have been reported in several species of free-living odontocetes, such as bottlenose dolphin (Tursiops truncatus), Atlantic white-sided dolphin (Lagenorhynchus obliquidens), dusky dolphin (L. obscurus), common dolphin (Delphinus delphis), bottlenose dolphin (Tursiops truncatus) and Pacific white-sided dolphin (L. obliquidens). Within the study area many salmon farms have been set up, with the subsequent increase of boat traffic and pollution, such as chemical and organic (pesticides) contamination, putative disease agents

REFERENCES