

REGULATORY IMPLICATIONS OF THE FIELD GUIDE: WHALES, RIVER DOLPHINS, AND DOLPHINS IN THE CAMPOS BASIN, BRAZIL

I. Executive Summary

In 2006 the Petrobras Research and Development Center (CENPES/Petrobras), and the Marine Mammal Studies Group in the Lagos Region (GEMM-Lagos), cooperated in producing a Field Guide entitled *Whales, River Dolphins, and Dolphins in the Campos Basin* (“Whale Report”).¹ The Whale Report is intended to help prepare Petrobras “to meet the challenge of being granted an environmental license for its offshore structures.”

The Whale Report focuses on the current status of Brazilian whales, river dolphins, and dolphins. It recommends that all of the Abrolhos Bank be designated as critical habitat for Humpback Whales. It concludes that “Pollution, ship traffic, and fishing constitute the main threats to the survival and the continuation of these species.”

The Whale Report’s lead individual author, Professor Salvatore Siciliano, stated in an interview that pollution is “by far” the biggest current threat to Brazil’s marine mammals. Professor Siciliano further stated that he doesn’t think that oil and gas exploration and production in the area poses a threat to marine mammals because “everything is done with the greatest care.”²

The Whale Report contrasts with a previous and now discredited Brazilian study that incorrectly identified oil and gas activities as a major threat to marine mammals.³ Brazil’s IBAMA, and other regulatory authorities like the International Whaling Commission (“IWC”) and the U.S. National Oceanic and Atmospheric Administration (“NOAA”), should concentrate on protecting marine mammals from their real threats. These threats are pollution including waste/garbage, ship traffic, and fishing. Oil and gas exploration and production are minor risks, and regulatory authorities should not waste their scarce resources concentrating on them.

¹ An English translation of the Introduction and Geographical Distribution chapters of this Whale Report is available online at <http://thecre.com/pdf/brazil%20reprt%20e.pdf>. A Portuguese version is available online at <http://thecre.com/pdf/Binder1.pdf>. One of the Report’s institutional authors, the Marine Mammals Studies Group of the Lagos Region (GEMM-Lagos), was formed in July 2002 as a result of the growth of the Arraial do Cabo Whales and Dolphins Project.

² Siciliano Interview available online at <http://cre.org.br/index.php?action=seenews&wneCode=260&language=por>. This interview is available online in English at <http://cre.org.br/index.php?action=see-news&wneCode=260&language=eng> Professor Siciliano is a researcher in the ENSP Department of Disease at the Oswaldo Cruz Foundation, one of the most important research centers in Latin America. He is also a member of the editorial board for the magazines: *The Latin American Journal of Aquatic Mammals* (1676-7497) and *Ciência Hoje das Crianças/Instituto Ciência Hoje & SBPC* (0103-2054).

³ This study is entitled *Are Seismic Surveys Responsible for Cetacean Strandings? An Unusual Mortality of Adult Humpback Whales in Abrolhos Bank, Northeastern Coast of Brazil* (Engel et al., 2000) (“Engel Study”). See discussion of its flaws at http://www.thecre.com/pdf/IAGC_paper_Further_Analysis_Abrolhos_Bank.pdf. See also the detailed discussion of the Engel Study in this White Paper, *infra* at page 5.

II. Discussion

The Whale Report describes the area under review as follows (reference citation omitted):

“The sedimentary area known as Campos Basin is nearly 100,000 square kilometers in size and extends from the state of Espirito Santo (near the city of Vitoria) to Cabo Frio in the state of Rio de Janeiro on the northern coast. To the south of the Vitoria–Trinidad chain, the continental shelf edge is considerably wide. This shelf is characterized by intense terrigenous sediment flux, which favored the development of a mild morphology of transition to the continental slope, with break depths located between 80 and 180 meters, with an average of 140 meters. The Continental slope is interrupted by underwater canyons, like those along the northern part of the state of Rio de Janeiro, or by intense ravinement and erosion zones.”

The Whale Report notes that more than 40 species of whales and dolphins are found in Brazil. At least 31 of the species inhabit the Campos Basin. The Report’s Table listing these species is attached hereto as an appendix.

The Whale Report emphasizes the importance of protecting the Humpback Whale and Right Whale. These two species are among the most endangered in the world. The Whale Report attributes the decline in these whales’ numbers, and the decline in other whale species, primarily to the historical practice of commercially hunting them. The Whale Report concludes that an international hunting ban has resulted in increased numbers of whales and dolphins in Brazil and elsewhere. The Whale Report explains that:

“Data collected by Brazilian researchers in recent years started to define areas inhabited by Right and Humpback Whales on the Brazilian coast. Research on cetaceans in Brazil grew, despite the general lack of resources researchers had to deal with. Coastal species have received greater attention because it is easier to access concentrated or problem areas where there is interaction from fishing. The best examples are river dolphins inhabiting bay areas and estuaries, Humpback Whales and Right Whales.”

“Two studies stand out because of their results and the re-discovery of these whales’ return to the Brazilian coast: the Humpback Whale Project and the Right Whale Project.”

“The Humpback Whale is the third most reduced (numerically) cetacean species in the world. The Northern Right Whale, *Eubalaena glacialis*, leads the list, followed by the Blue Whale, *Balaenoptera musculus*.

Before the commercial hunting season, it was believed the world population was about 125,000 Humpback Whales. North American whaling ships killed between 14,164 and 18,212 Humpback Whales between 1805 and 1909 alone. In the Brazilian northeast, the Costinha station killed 1,542 Humpback Whales between 1911 and 1963. Currently, there

are less than 10,000-12,000 Humpback Whales in the world, not more than 10% of the initial number.”

“Strong pressure from conservationist groups and public opinion in the 70’s led to governments of whaling countries to review their positions. In Brazil, protection of large whales became a reality with Law No. 7.643 of December 1987 which established its first article: ‘it is prohibited to fish or [commit] any other intentional offense to any cetacean species in the jurisdiction of Brazilian waters.’”

“Practically decimated by hunting, Humpback Whales seem to demonstrate an extraordinary ability of population recovery. The increase in the number of sighting and beaching cases on the Brazilian coast starting in 1980 is significant, and old areas of concentration seem to be gradually re-occupied.”

Now that whale hunting is banned, the Whale Report concludes that the primary current threats to whales and dolphins are pollution, ship traffic and commercial fishing. In the Report’s own words:

“CONSERVATION AND THREATS

Like other aquatic animals, cetaceans face several kinds of danger from humans on rivers, seas and oceans. Pollution, ship traffic, and fishing constitute the main threats to the survival and the continuation of these species. Pollution from chemical and industrial waste can lead several different populations to the brink of extinction. Once these compound chemicals make it into the environment, they find their way in to the food chain. This is called bio-accumulation and it occurs when the dolphin eats fish that have eaten other fish which are contaminated and the dolphin ends up with the full effects of the pollutants. The pollutants cause endocrine problems in which some hormones do not function properly. This could lead to serious reproductive and development problems. A well-known case is that of the Beluga Whale (*Delphinapterus leuca*) that inhabit the Saint Lawrence River in Canada. This region receives residuals from factories located on the North American Great Lakes, like those in Chicago and Detroit which freely throw several kinds of pollutants into the river, including heavy metals and organo-chlorides. Due to their accumulation, these compounds started to cause irreversible problems. Nowadays, this population is threatened with a large number of cancer cases in the whales and deformations in the calves.

Another problem is the pollution, i.e., that from people in cities, along rivers, on the beaches, or on the sea, throwing trash into the water. Many dolphin species die after swallowing pieces of plastic, lines, and other objects which are confused for food. This is a very serious problem and is increased because of people using plastic cups, straws, and other types of disposable material.

Ship traffic can also be a serious problem for those populations found near ports and busy locations. The Southern Right Whale is an example of this and is more than rarely found dead from being hit and deeply cut by ship propellers.

Like pollution, [commercial fishing] is another impact which is hard to see the effects in the short term, and many times is only perceived when it is too late. The drastic decrease of stock, in addition to being a threat to the marine-life ecosystem as a whole, also leads to a short basic food supply for whales and dolphins. In many cases, the animals are forced to change their preferred food source or move to another location in search of food.”

The Whale Report recommends additional research into these threats and how to solve them:

“All these conservation problems can and must be minimized. However, understanding them depends on research on their impact on cetaceans, as well as understanding specie biology and ecology, the implementation of measures to reduce impacts, and the execution of environmental education campaigns for coastal communities, ship employees, and tourists.”

“Research is fundamental for guaranteeing the survival of whales on the Brazilian coast; it is the only means to assess, for example, the recovery of a species and learn about their areas of concentration and occurrence. For this, official encouragement to researchers for whale study is needed.”

The Whale Report also recommends special treatment of Humpback Whales in the Abrolhos Bank:

“Without a doubt, the Abrolhos National Marine Park is the best region in Brazil to do whale watching, but some measures are necessary to avoid accidents with tourists, with ships, and with the whales. Some rules are: avoid excessively approaching whales, maintaining a minimum distance of 150 meters from the group being observed; do not try to steer the whales to a determined area and do not separate the female from her calf. Part of the work by Abrolhos researchers includes inspecting these rules and the education of tourist and fishing fleet personnel.

All of the Abrolhos Bank should be formally designated as critical habitat for Humpback Whales on the Brazilian coast. A critical habitat represents any area that appears to be essential for the survival and/or population growth of a species. In the Abrolhos region, this is a chance to save the Brazilian population of Humpback Whales.”

The Whale Report is not the first Brazilian study to address anthropogenic effects on Humpback Whales in the Abrolhos Bank. In 2004 the IWC’s Scientific Committee relied on a different Brazilian study, the Engel Study, to conclude that oil and gas seismic operations caused Humpback Whales to strand on the Bank.

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The Center for Regulatory Effectiveness and others challenged the IWC Committee's reliance on the Engel Study to reach this conclusion.⁴ NOAA sent CRE written agreement that the Engel Study does not show that seismic caused the Humpbacks to strand.⁵ The IWC subsequently repudiated any seismic/stranding link.⁶

The later and better informed Whale Report is consistent with the subsequent, universal rejection of the Engel Study because the Whale Report does not identify seismic or other oil and gas operations as a significant threat to marine mammals.

III. Conclusion

Whales, River Dolphins, and Dolphins in the Campos Basin is the definitive work on the subject.

IBAMA and other regulatory authorities like the IWC and NOAA should heed the Whale Report's recommendations and concentrate on protecting whales and dolphins from pollution (including waste/garbage), ship traffic, and fishing. The Abrolhos Bank should be formally designated as critical habitat for Humpback Whales on the Brazilian coast.

Until which time it is demonstrated that seismic and other oil and gas operations present a clear endangerment to marine mammals based upon peer reviewed and reproducible data, IBAMA and other regulatory authorities like the IWC and NOAA should not expend scarce resources by focusing on minor risks such as seismic operations.

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⁴ See, e.g., http://www.thecre.com/pdf/IAGC_paper_Further_Analysis_Abrolhos_Bank.pdf.

⁵ NOAA's letter to CRE is available online at http://www.thecre.com/pdf/NOAA-IWC_Letter.pdf.

⁶ 2006 Report of the standing working group on environmental concerns. Annex K to the Report of the Scientific Committee found at <http://thecre.com/pdf/Annex%2520K%5bFINAL%5dsq.pdf>.

APPENDIX: WHALES AND DOLPHINS IN BRAZIL'S CAMPOS BASIN

Suborder	Family	Scientific Name	Common Name	C	O	OCR/SA
Mysticeti	Balaenidae					
		<i>Eubalaena australis</i>	Southern Right Whale	X		OC/S
	Balaenopteridae					
		<i>Balaenoptera musculus</i>	Blue Whale		X	OC/S
		<i>Balaenoptera physalus</i>	Fin Whale		X	OC/S
		<i>Balaenoptera borealis</i>	Sei Whale		X	OC/S
		<i>Balaenoptera edeni</i>	Bryde Whale	X		OC/N
		<i>Balaenoptera bonaerensis</i>	Southern Minke Whale		X	OC/S
		<i>Balaenoptera acutorostrata</i>	Dwarf Minke Whale	X		OC/DI
		<i>Megaptera novaeangliae</i>	Humpback Whale	X	X	OC/S
Odontoceti	Physeteridae					
		<i>Physeter macrocephalus</i>	Sperm Whale		X	OC/DI
	Kogiidae					
		<i>Kogia breviceps</i>	Pygmy Sperm Whale		X	OC/DI
		<i>Kogia sima</i>	Dwarf Sperm Whale		X	OP/DI
	Ziphiidae					
		<i>Berardius arnuxii</i>	Arnoux's Beaked Whale		X	OP/DI
		<i>Mesoplodon europaeus</i>	Gervais' Beaked Whale		X	OP/DI
		<i>Mesoplodon mirus</i>	True's Beaked Whale		X	OP/DI
	Delphinidae					
		<i>Orcinus orca</i>	Killer Whale	X	X	OC/DI
		<i>Globicephala macrorhynchus</i>	Short-finned Pilot Whale		X	OC/DI
		<i>Pseudorca crassidens</i>	False Killer Whale		X	OC/DI
		<i>Feresa attenuata</i>	Pygmy Killer Whale		X	OC/DI
		<i>Peponocephala electra</i>	Melon-headed Whale		X	OC/DI
		<i>Sotalia guianensis</i>	Estuarine Dolphin, Costero Dolphin, Guiana Dolphin	X		OC/N

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		<i>Steno bredanensis</i>	Rough-toothed Dolphin	X		OC/N
		<i>Grampus griseus</i>	Risso's Dolphin		X	OC/DI
		<i>Tursiops truncatus</i>	Bottlenose Dolphin	X	X	OC/N
		<i>Stenella attenuata</i>	Pantropical Spotted Dolphin		X	OC/N
		<i>Stenella frontalis</i>	Atlantic Spotted Dolphin	X		OC/N
		<i>Stenella longirostris</i>	Spinner Dolphin		X	OC/N
		<i>Stenella clymene</i>	Clymene Dolphin		X	OC/N
		<i>Stenella coerulecalba</i>	Striped Dolphin		X	OC/N
		<i>Delphinus sp</i>	Common Dolphin	X		OC/N
		<i>Lagenodelphis hosei</i>	Fraser's Dolphin		X	OC/N
	Pontoporiidae					
		<i>Pontoporia blainvillei</i>	La Plata Dolphin	X		OC/N

(C): coastal community; (O): oceanic community; (OCR/AS): occurrence/seasonality; (OC): confirmed occurrence; (OP): possible occurrence; (S): seasonal occurrence; (N): out-of-season occurrence; (DI) insufficient data.