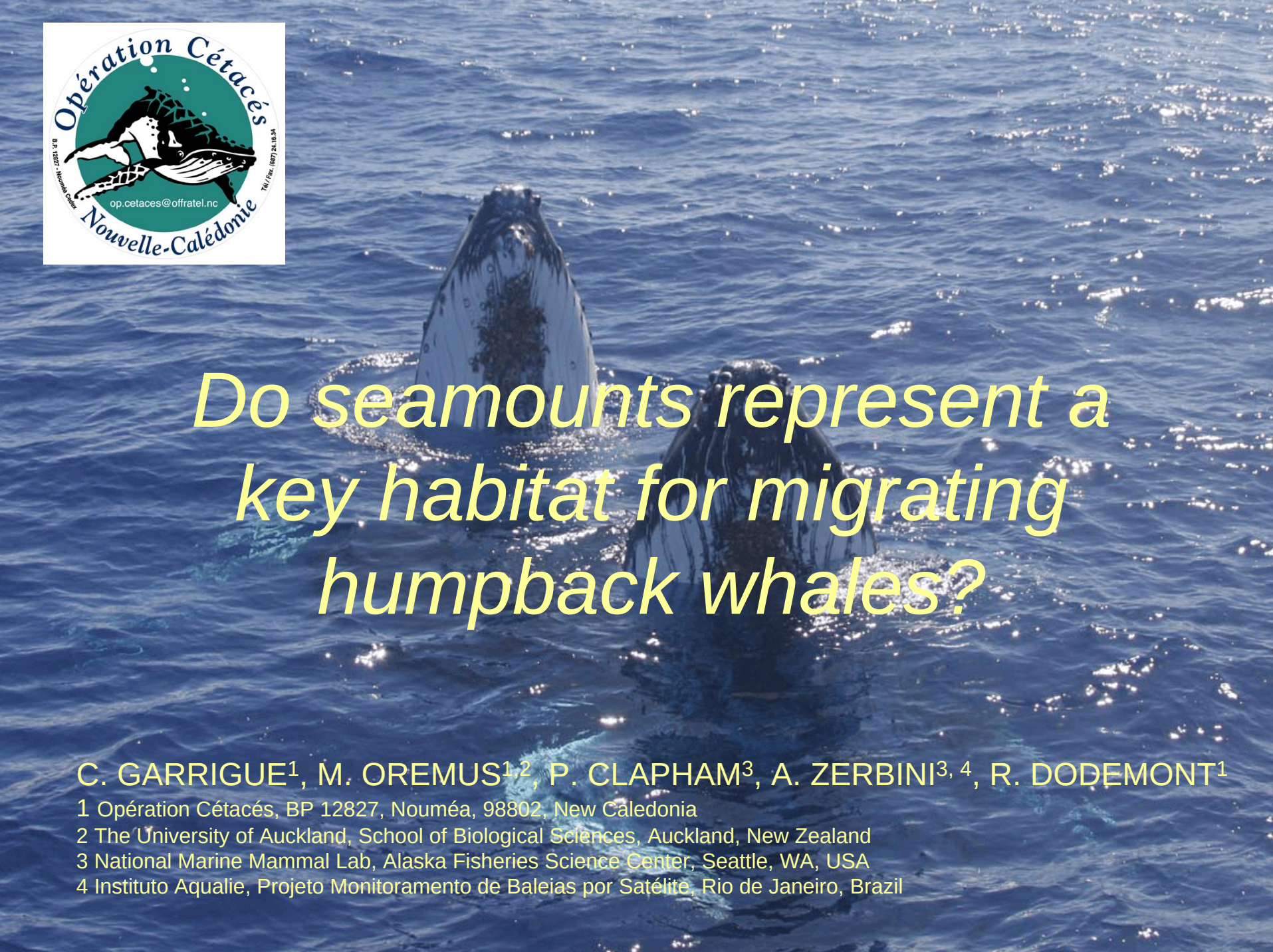
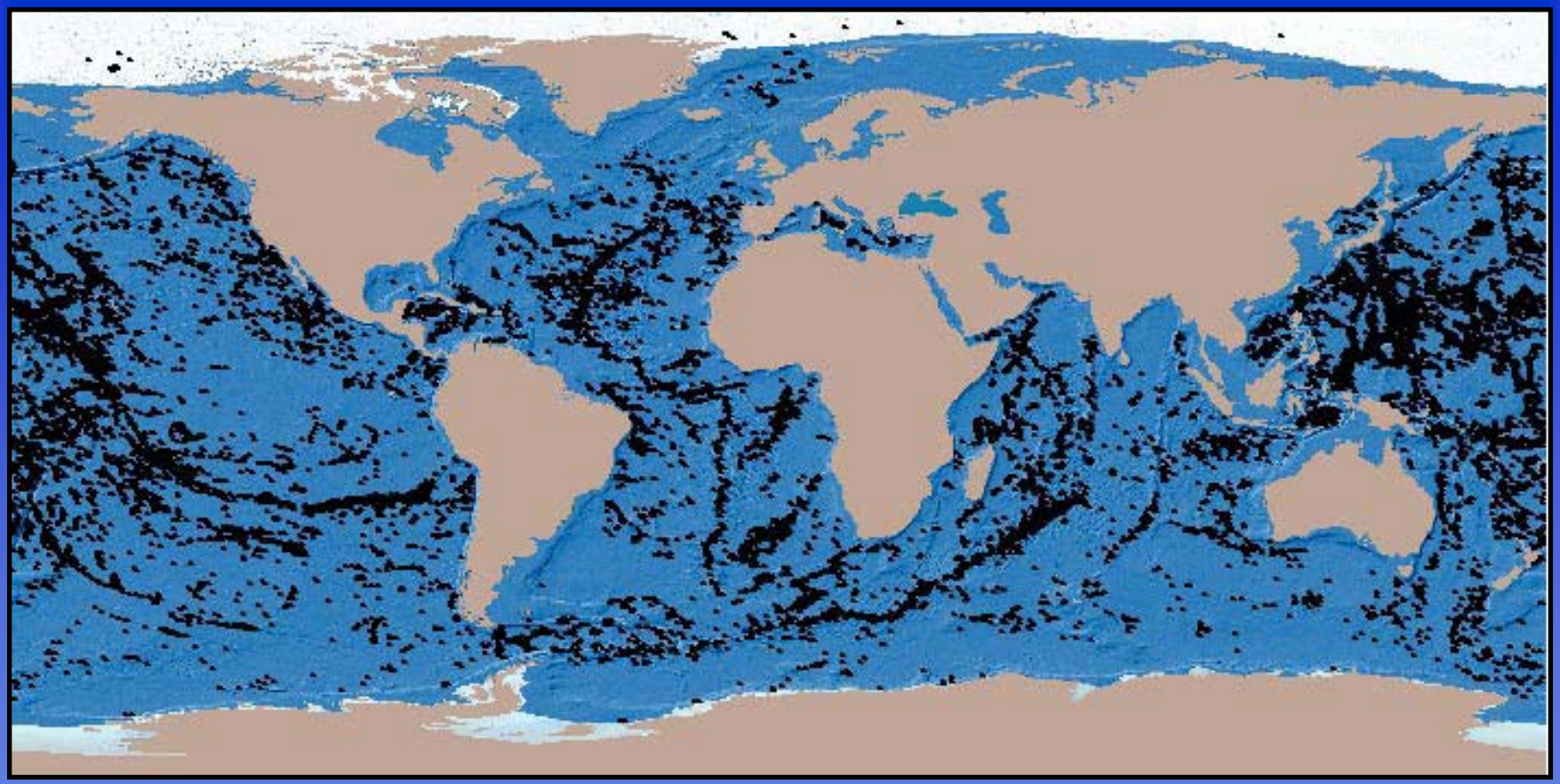


Do seamounts represent a key habitat for migrating humpback whales?

C. GARRIGUE[1], M. OREMUS[1,2], P. CLAPHAM[3], A. ZERBINI[3, 4], R. DODEMONT[1]

1 Opération Cétacés, BP 12827, Nouméa, 98802, New Caledonia
2 The University of Auckland, School of Biological Sciences, Auckland, New Zealand
3 National Marine Mammal Lab, Alaska Fisheries Science Center, Seattle, WA, USA
4 Instituto Aqualie, Projeto Monitoramento de Baleias por Satélite, Rio de Janeiro, Brazil

Large seamounts area

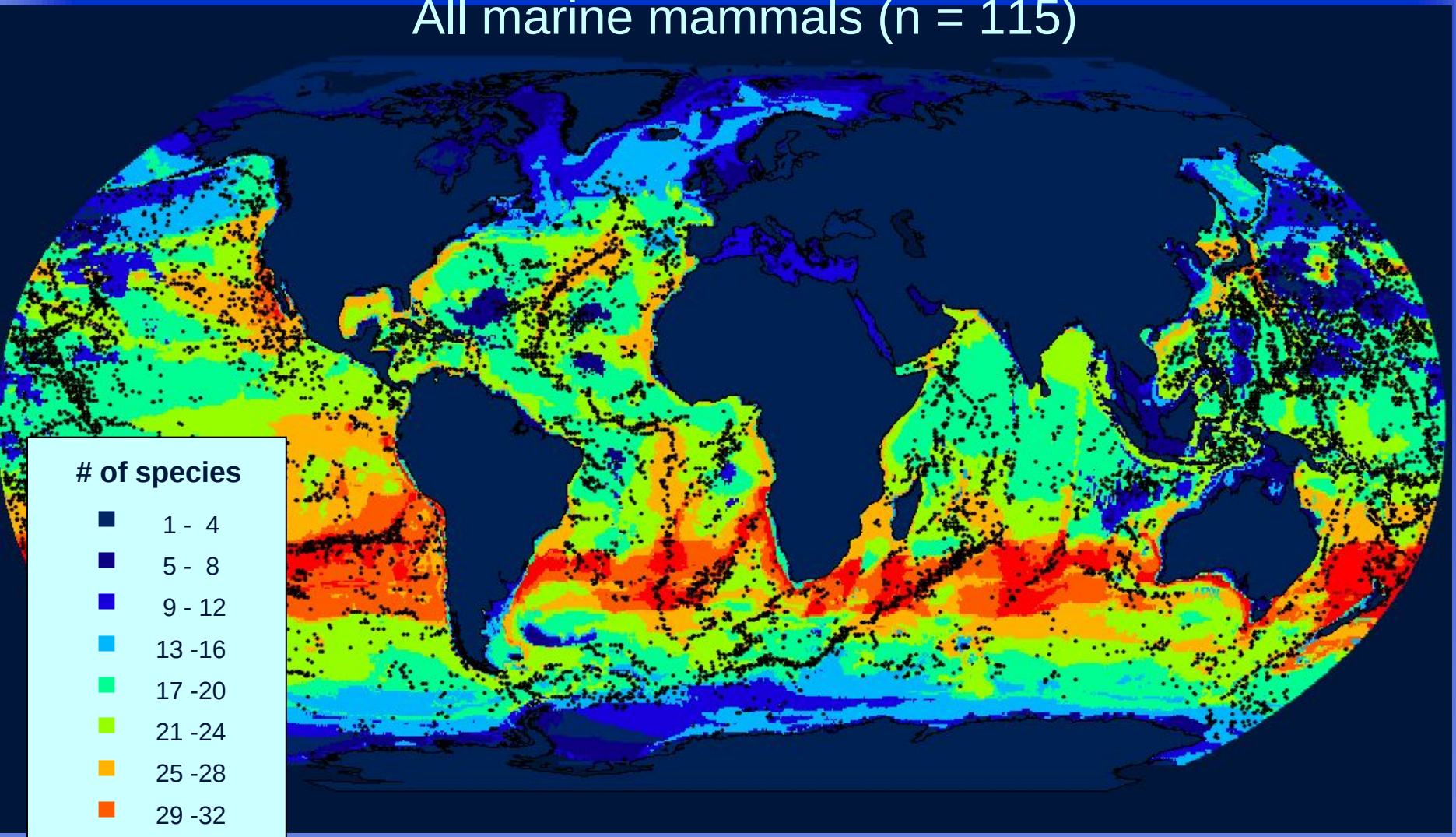


14 000 large seamounts greater than 1000 m in height
(Kintchingman and Lai, 2005)

From: Kintchingman A. and Lai S. 2004 P. Inferences on Potential Seamount Locations from Mid-Resolution Bathymetric Data. In T. Morato and D. Pauly, FCRR Seamounts: Biodiversity and Fisheries, Fisheries Centre Research Reports. University of British Columbia. 12:7 - 12.

Species Richness & Seamounts

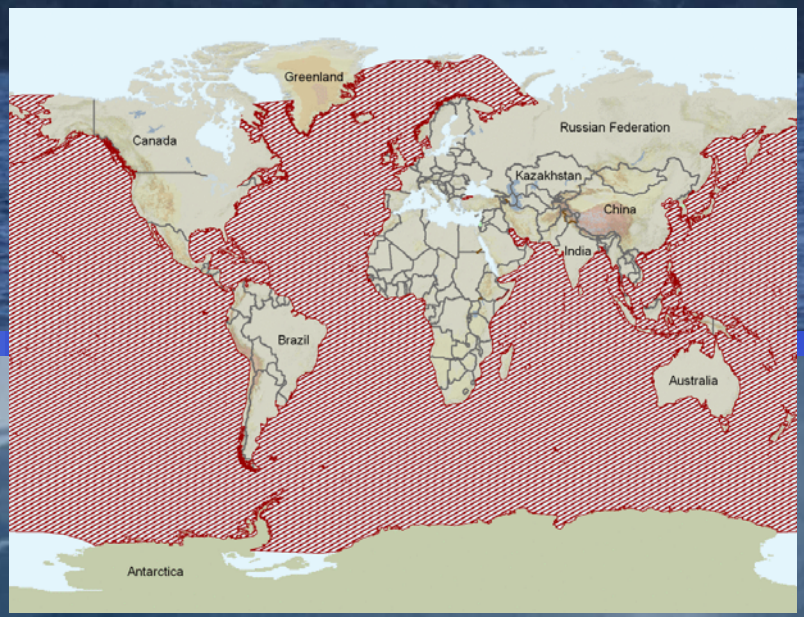
All marine mammals (n = 115)



RES threshold for assumed presence > 0.4

From : Kaschner, K. 2007. Air-breathing visitors to seamounts. Section A: Marine mammals (2007) In: Seamounts: Ecology, Fisheries & Conservation. Eds. T. Pitcher, T. Morato, P.J.B. Hart, M.R. Clark, N. Haggan and R.S. Santos. 230-238

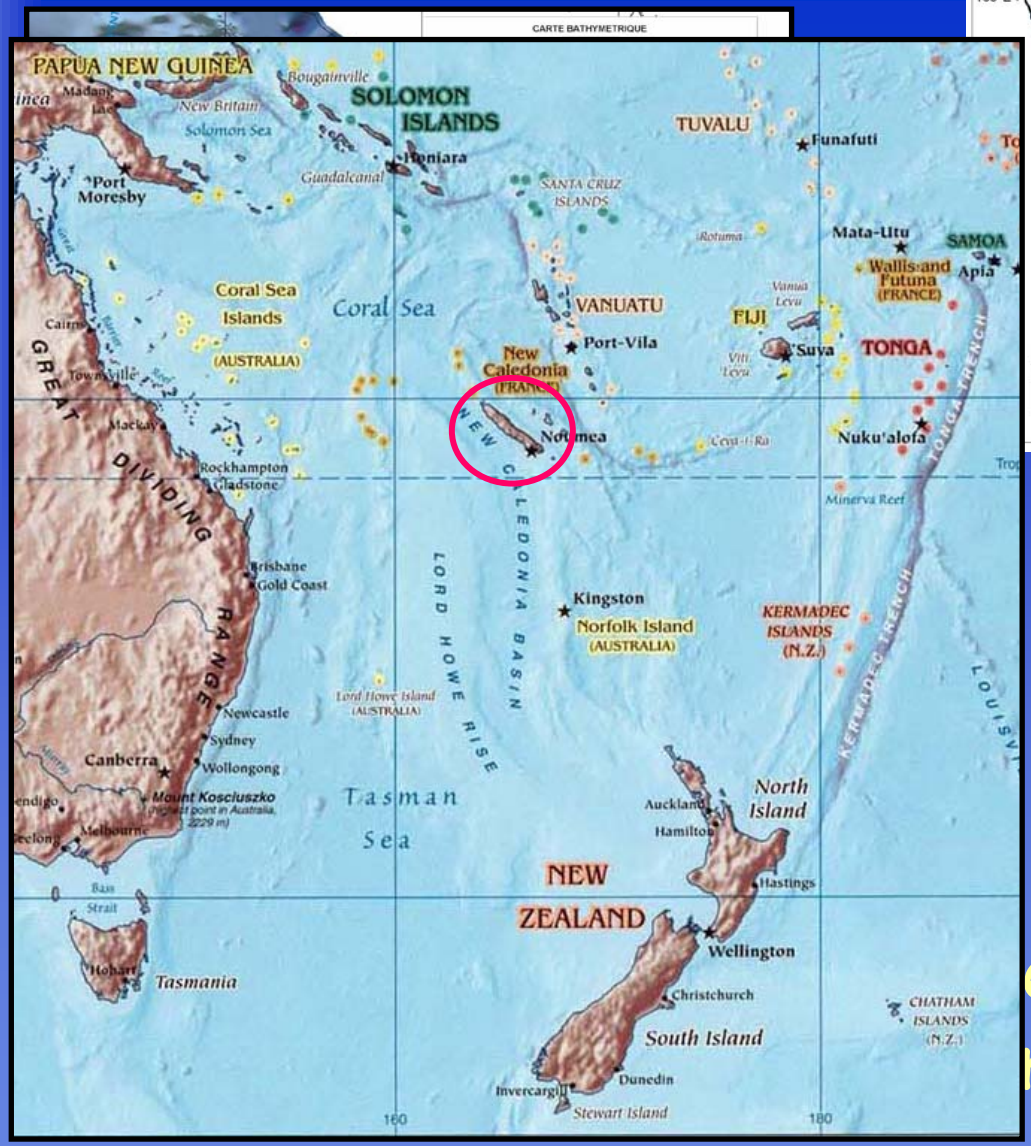
Habitats of humpback whales

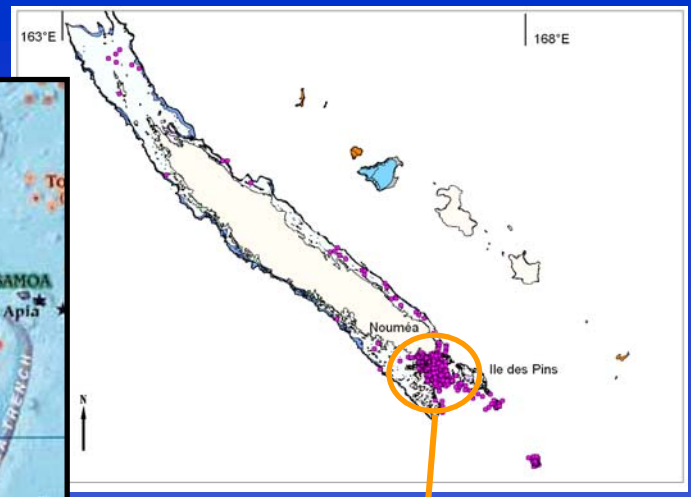


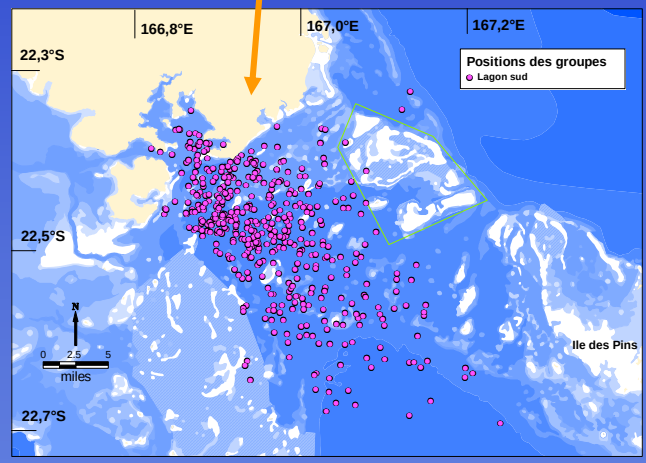
Are the seamounts used by humpback whales and how ?

Map : Source UICN, Photos : C.Olavarria

Study site





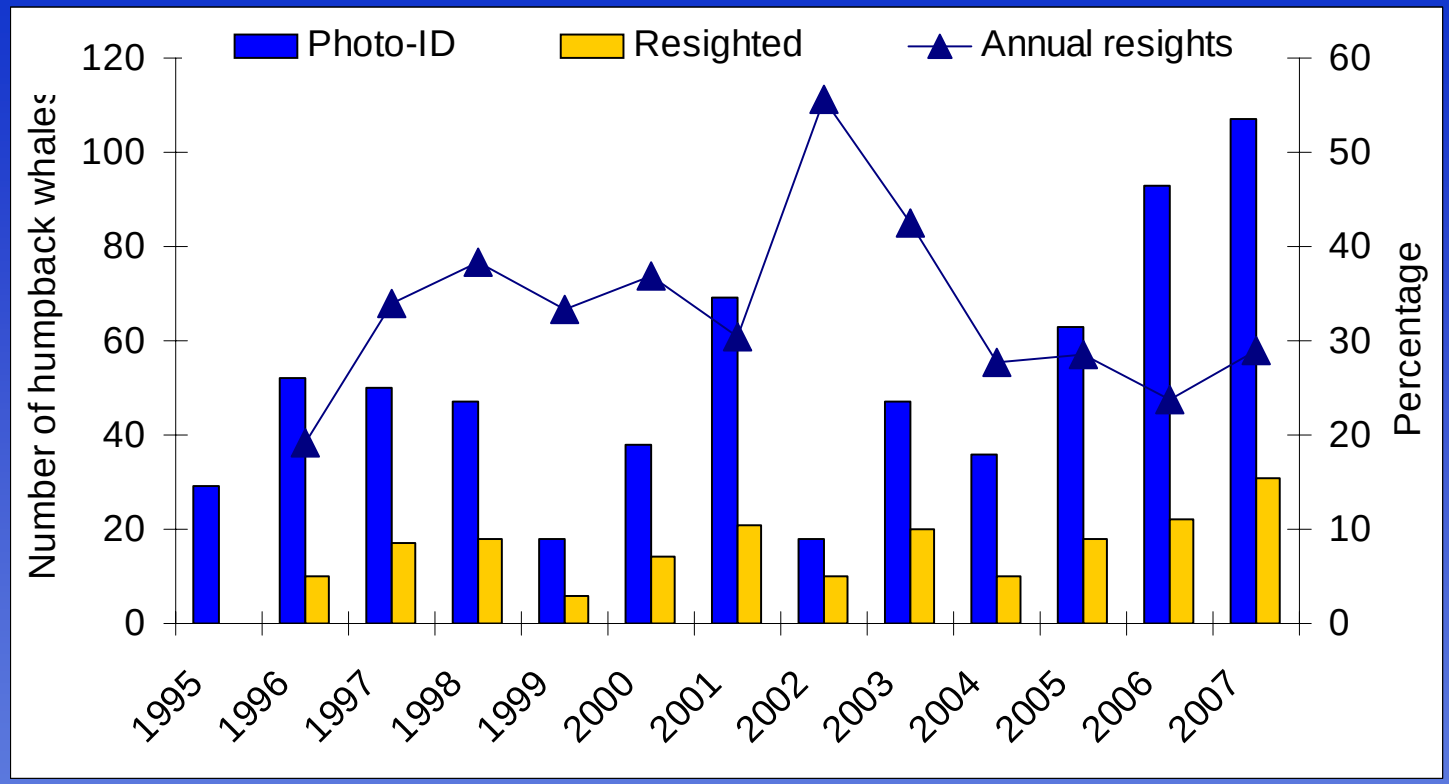


e southern lagoon is the main breeding ground

Garrigue C., Greaves J. and Chambellant M. 2001. Characteristics of the New Caledonian humpback whale population. Memoirs of Queensland Museum, 47 (2) : 539-546.

A small population with high site fidelity

N = 472 CV = 0.18



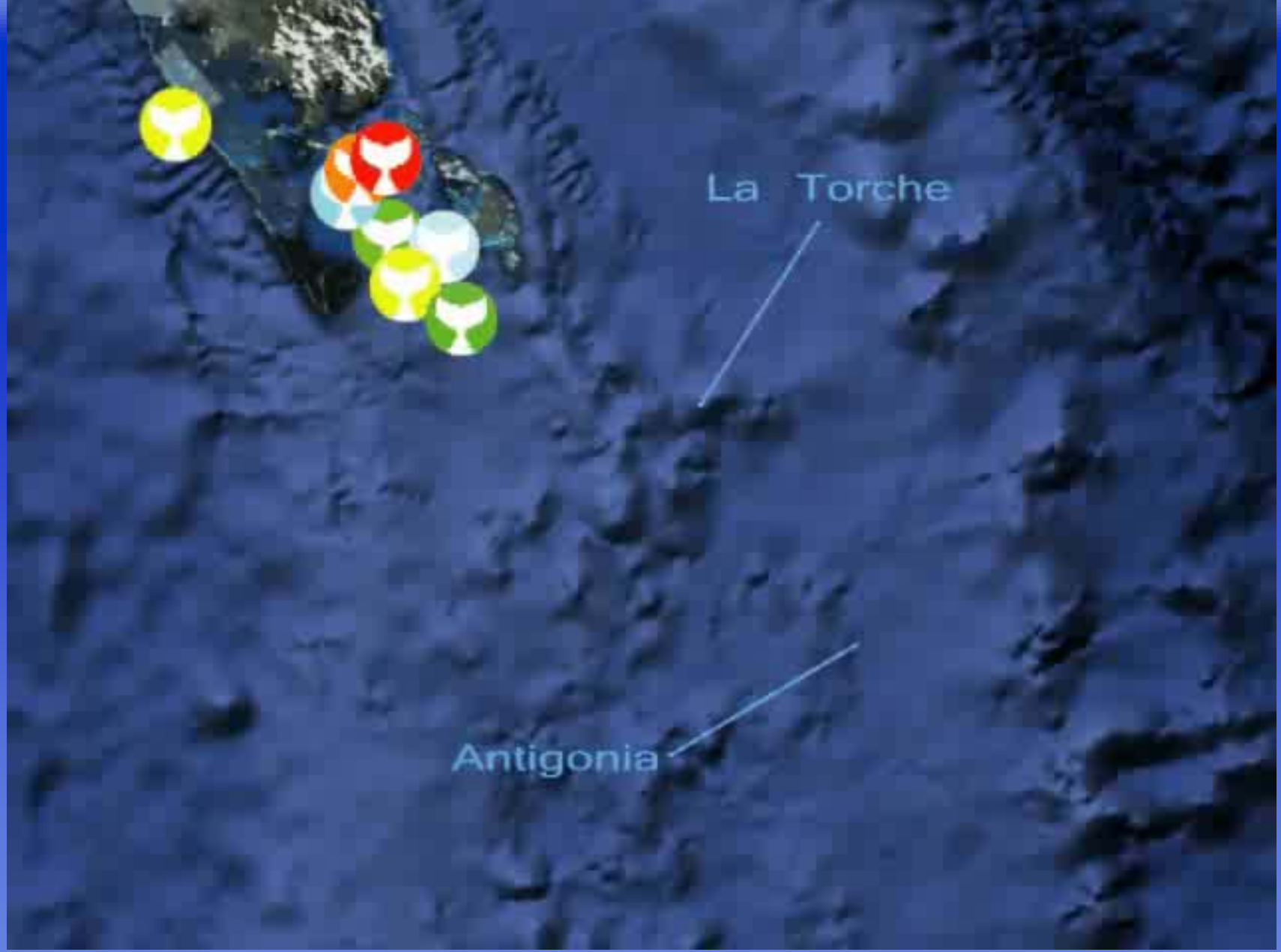
20% of resights
Between 19 to 55% of inter annual resights

Garrigue, C., Dodemont, R., Steel, D., Baker, C.S. 2004. Organismal and 'gametic' capture-recapture using microsatellites genotyping confirm low abundance and reproductive autonomy of humpback whales on the wintering grounds of New Caledonia. Marine Ecology Progress Series, 274: 251-262.

Baker, C.S., Garrigue, C., Constantine, R., Madon, B., Poole, M., Hauser, N., Clapham, P., Donoghue, M., Russell, K., O'Callahan, T., Paton, D., Mattila, D. 2006. Abundance of humpback whales in Oceania (South Pacific), 1999 to 2004. SC/A06/HW51.

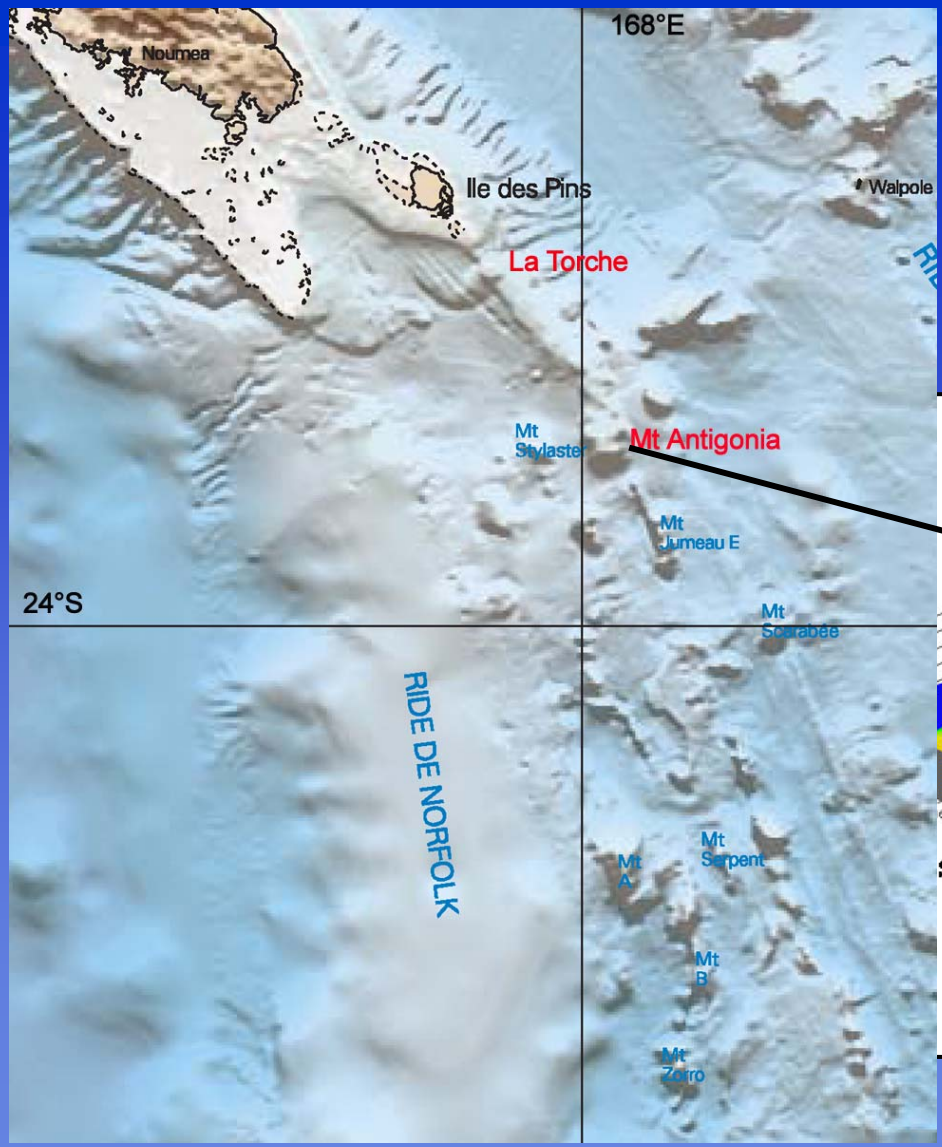
Satellite tagging

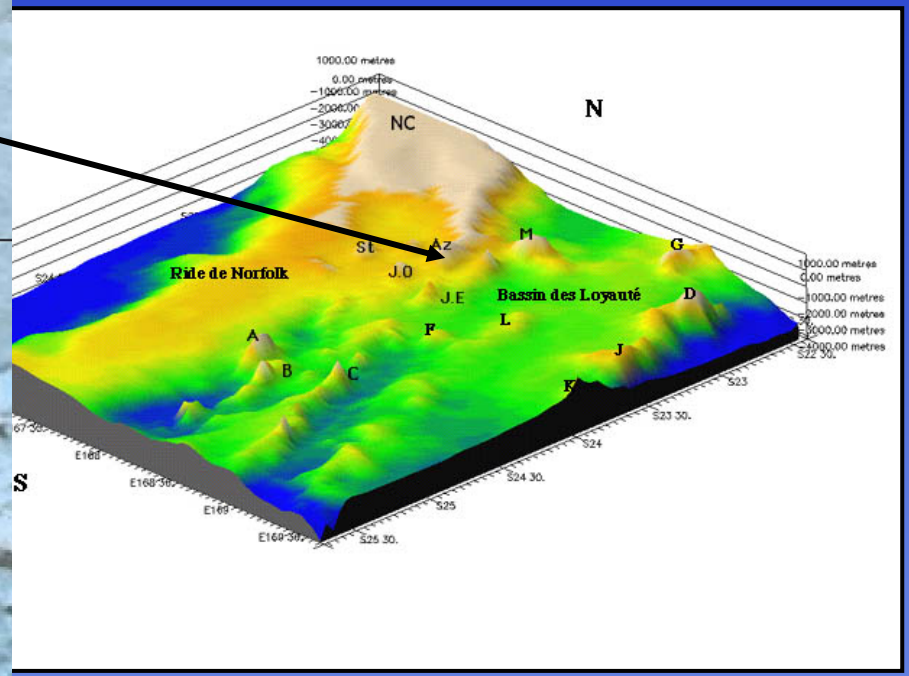
From: Garrigue C., Zerbini A.N., Geyer Y., Heide-Jørgensen M-P., Hanaoka W., and Clapham P.. Movements of satellite-monitored humpback whales from New Caledonia. Journal of Mammalogy (in press).



Resting, breeding, feeding area, navigational landmark ?

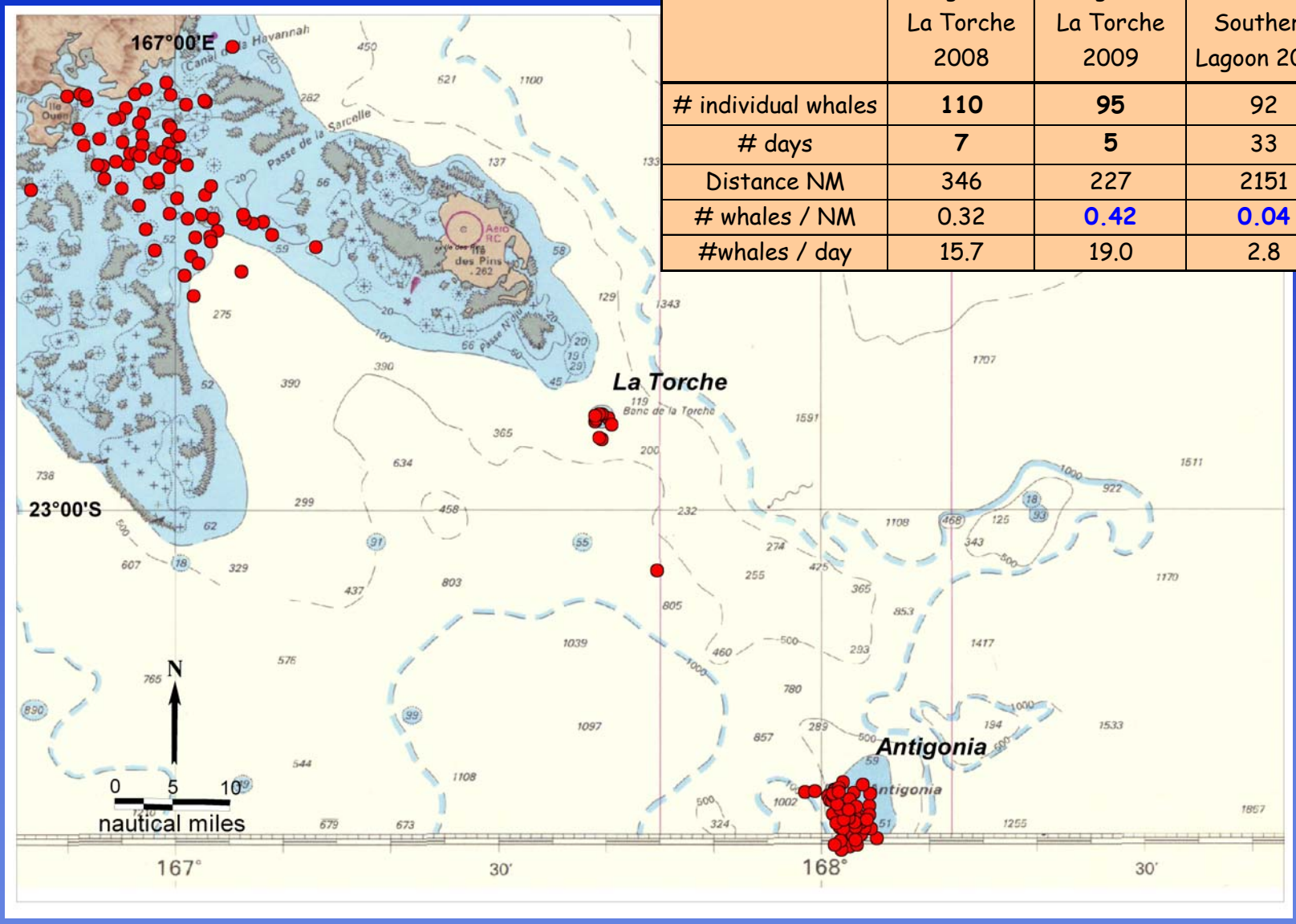
Use of an offshore seamount reef system



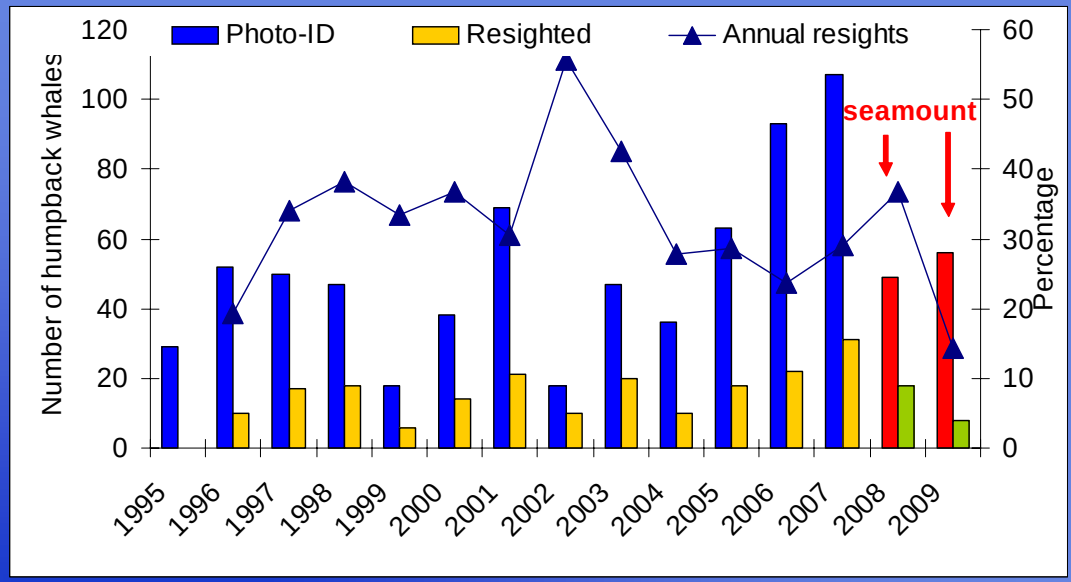


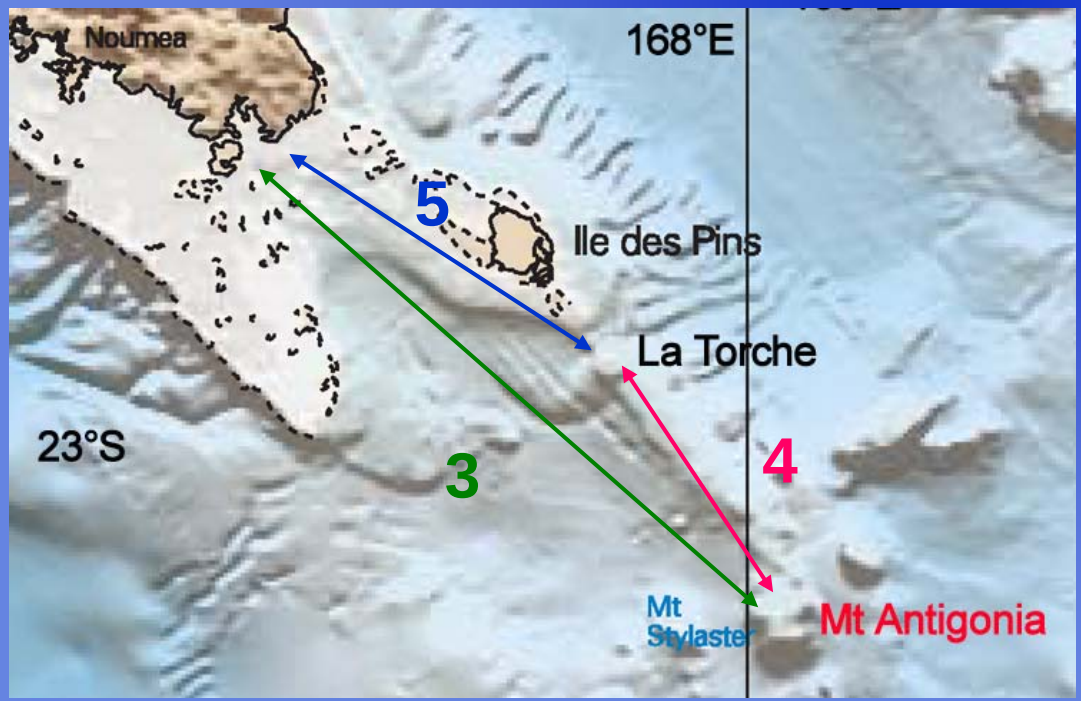
Exploratory expeditions

	Antigonia & La Torche 2008	Antigonia & La Torche 2009	Southern Lagoon 2009
# individual whales	**110**	**95**	92
# days	**7**	**5**	33
Distance NM	346	227	2151
# whales / NM	0.32	**0.42**	**0.04**
#whales / day	15.7	19.0	2.8



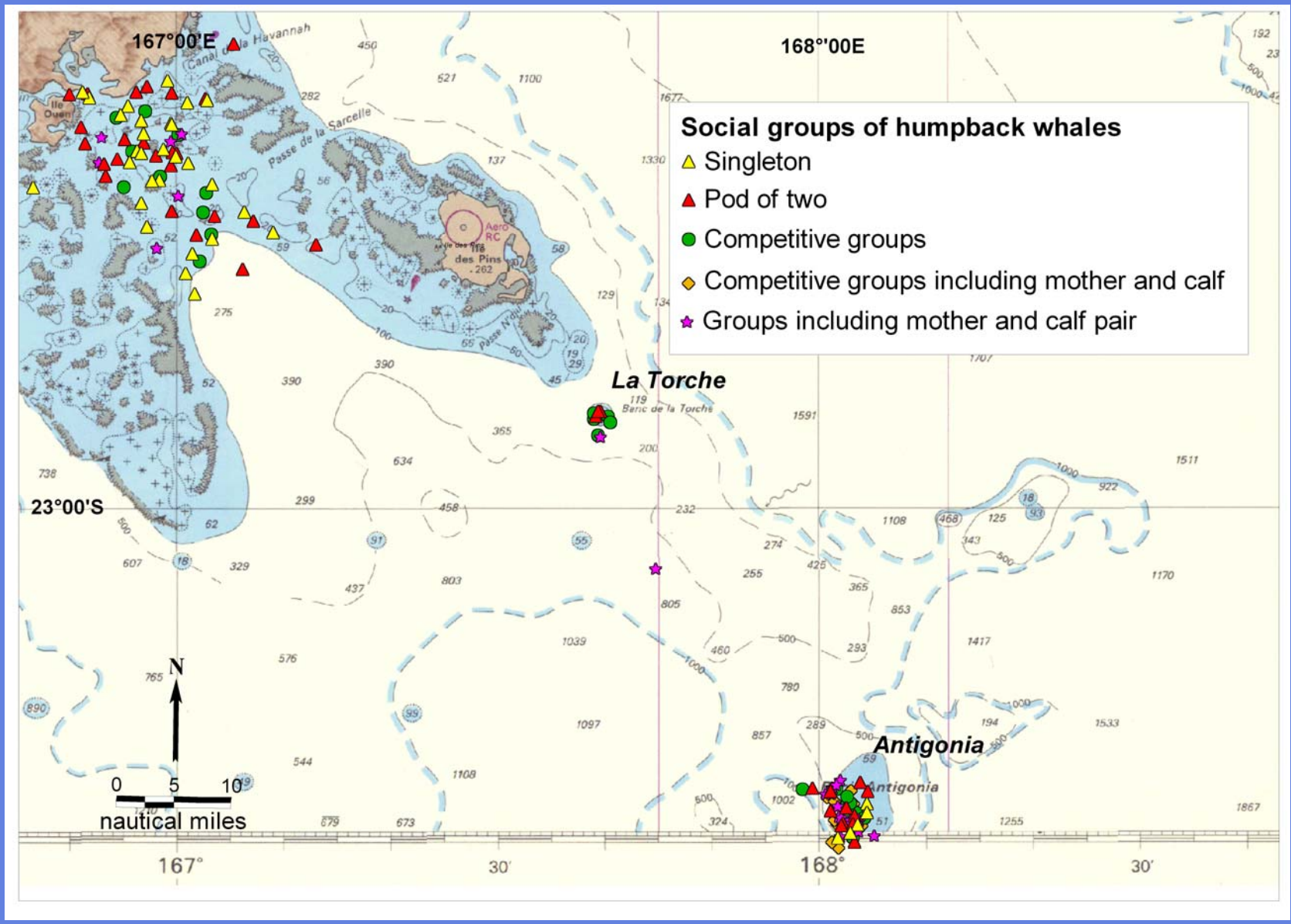
Areas used by the same breeding stock





12 movements of photo Id whales between the seamounts and the Southern lagoon

Seamount used as a breeding ground



Conclusions

- In New Caledonia some seamounts constitute a habitat for humpback whale as a breeding location.
- One third of the seamounts are situated in the latitude of reproduction of the humpback whales.
- Remote seamounts across the Pacific could potentially shelter previously undetected breeding stocks.
- Others could serve as a navigational landmark or a resting stop for migrating whales or even feeding.

Seamounts could potentially represent an important habitat previously overlooked

This project will have not been possible without the financial support of:

GREENPEACE

FONDATION TOTAL

TOTAL

PROVINCE SUD

IFAW
www.ifaw.org

All procedures followed guidelines by the American Society of Mammalogists (Gannon et al. 2007), and research was reviewed and permitted by the administration of New Caledonia

Thanks to K. Kaschner for the 3rd slide.