



Laguna San Ignacio Ecosystem Science Program

A Project of the Ocean Foundation in Baja California Sur, Mexico



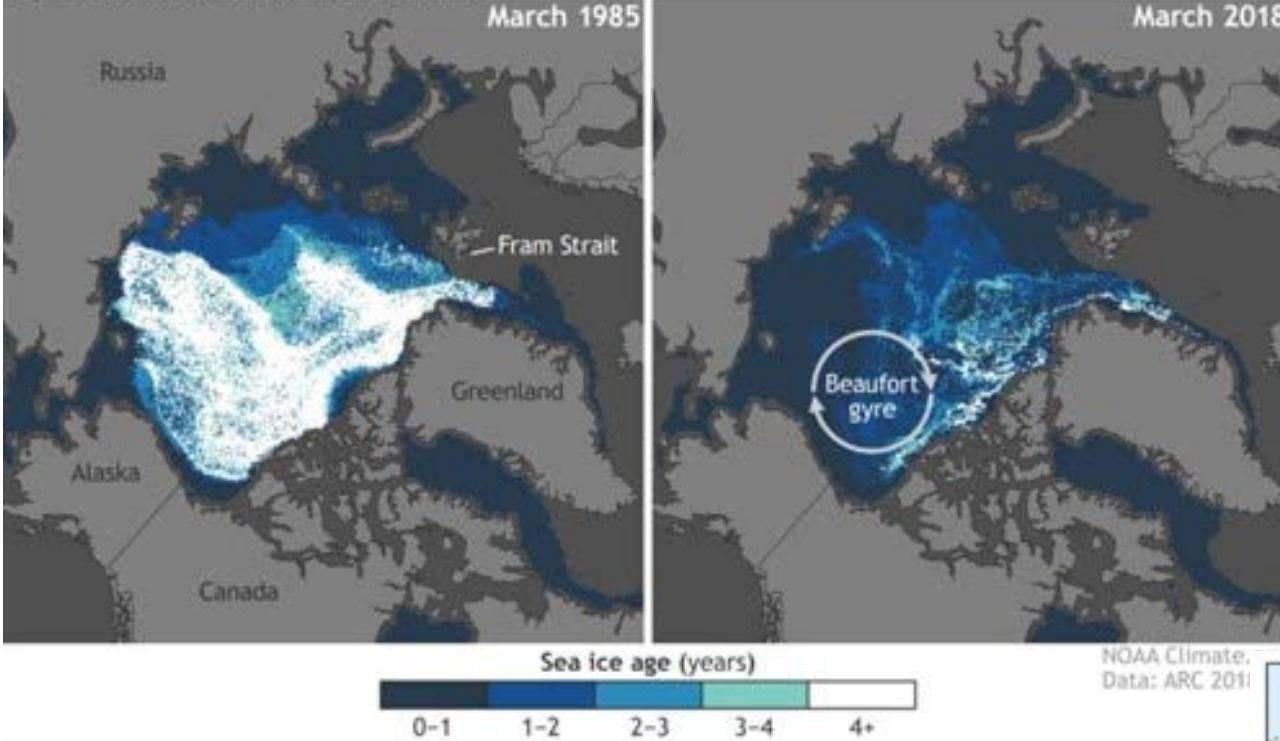
¿Qué tan saludables están las ballenas de la Laguna San Ignacio?

How healthy are the whales of the San Ignacio lagoon?



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LOSS OF VERY OLD ICE OVER TIME



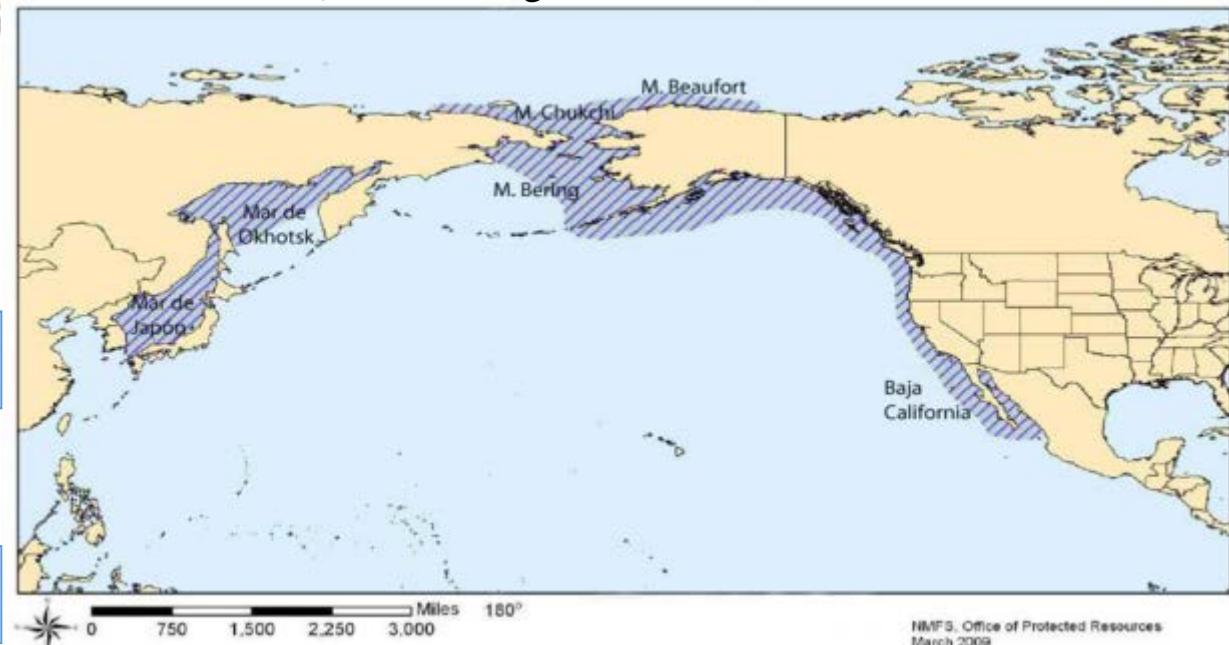
Alimentación/Feeding

Energía almacenada/Stored energy

Reproducción/Reproduction

- Asociado a la distribución y estacionalidad del hielo/association of the distribution and seasonality of the sea ice

(Martínez-Aguilar, 2016: modificado de la NMFS, 2009)



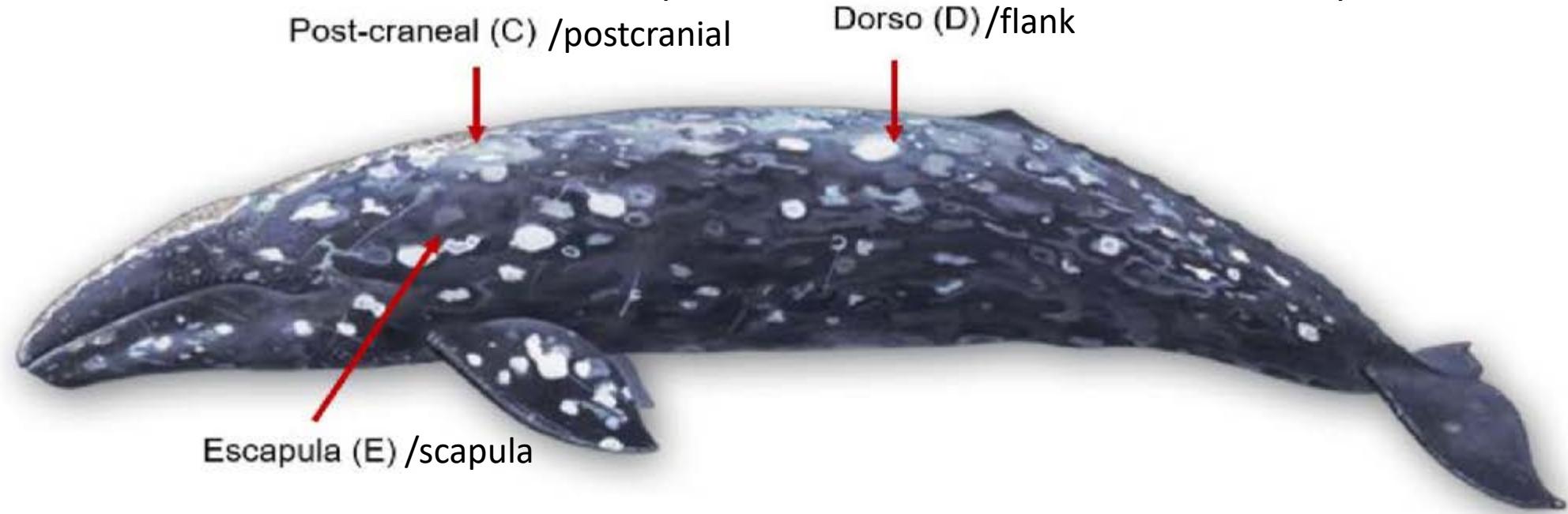
NMFS, Office of Protected Resources
March 2009

(Bradford *et al*, 2012 y Weller *et al*, 2000)





Evaluación de la condición corporal/evaluation of the body condition



Modificado de Pieter Folkens

Categorías/Categories	C E D									
	322	321	32X	312	31X	3X2	3X1	3XX		
Saludable/Good	322	321	32X	312	31X	3X2	3X1	3XX		
Aceptable/Fair	311	222	221	22X	212	21X	2X2	2X1	2XX	
Pobre(flaca)/Skinny	211	122	121	12X	112	111	11X	1X2	1X1	1XX
Desconocida/Unknown	X22	X21	X2X	X12	X11	X1X	XX2	XX1	XXX	

(Modificado de Bradford *et al*, 2012)



Cabeza/Head

3



2



1



Escápula/Scapula



Dorso/Flank



Categories



Saludable/healthy

Aceptable/fair

Flaca/skinny



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Madre con cría/mother with calf

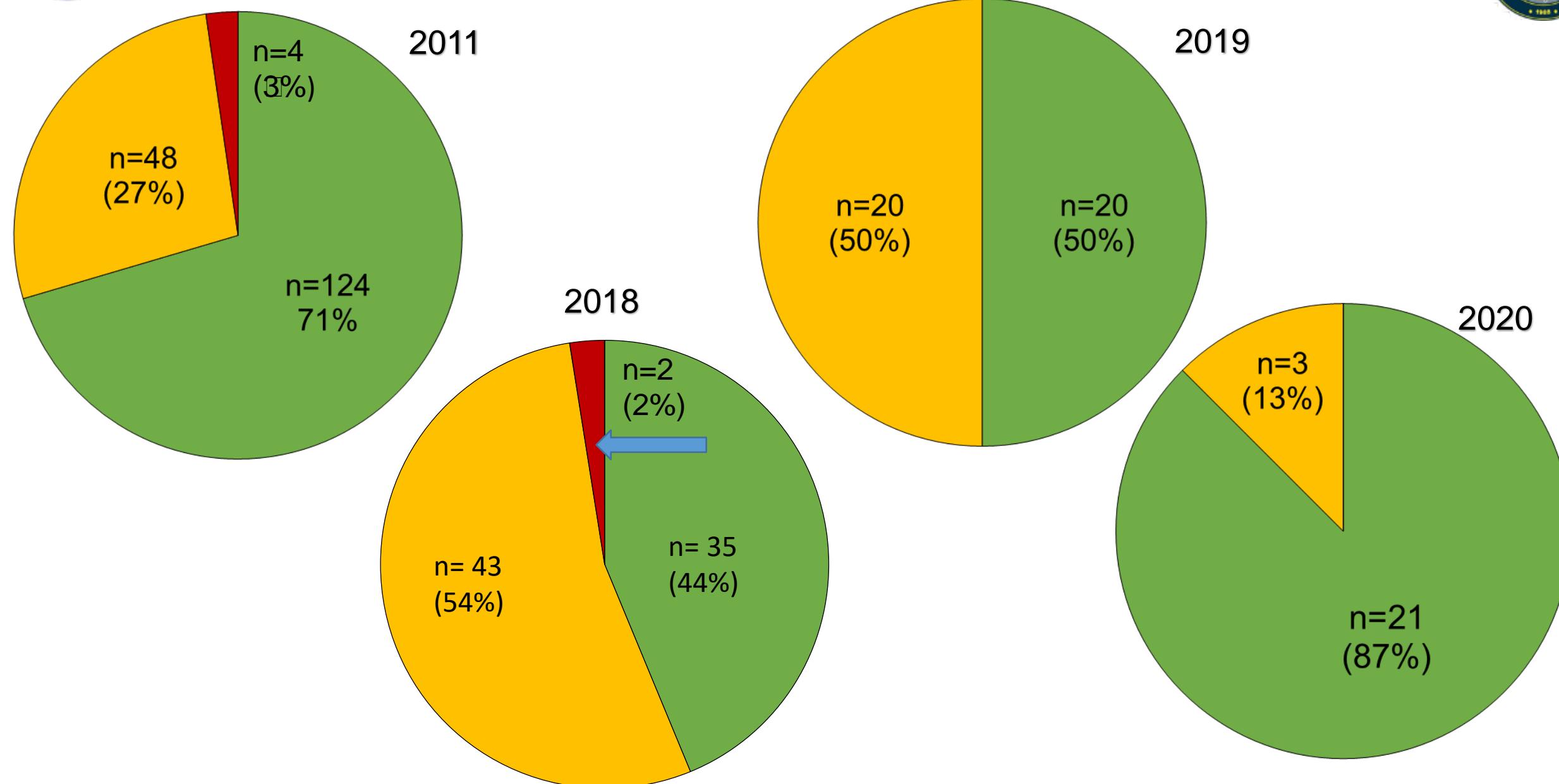




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Normal/healty Acceptable /fair Pobre /skinny





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Solitarios/single

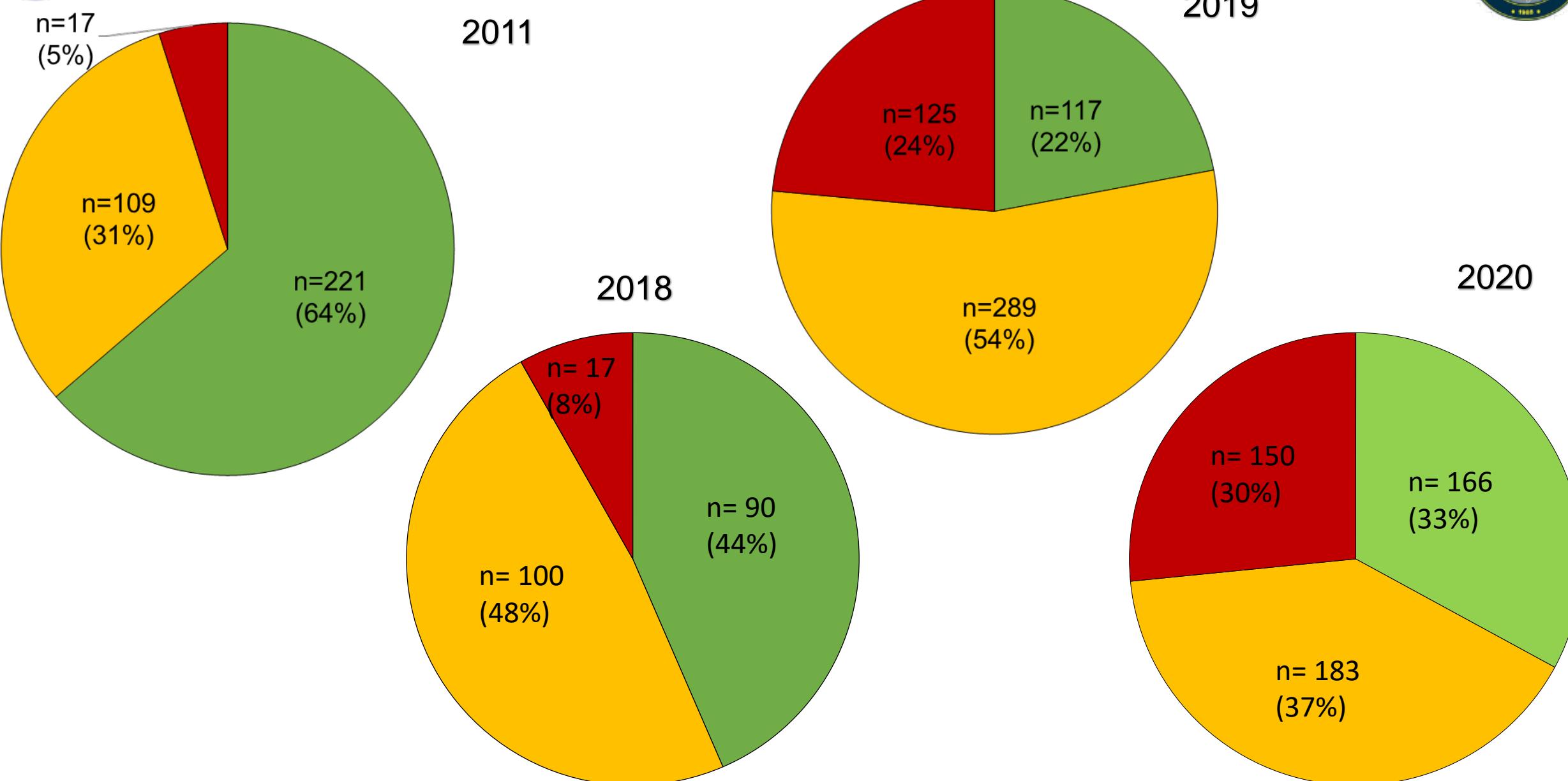




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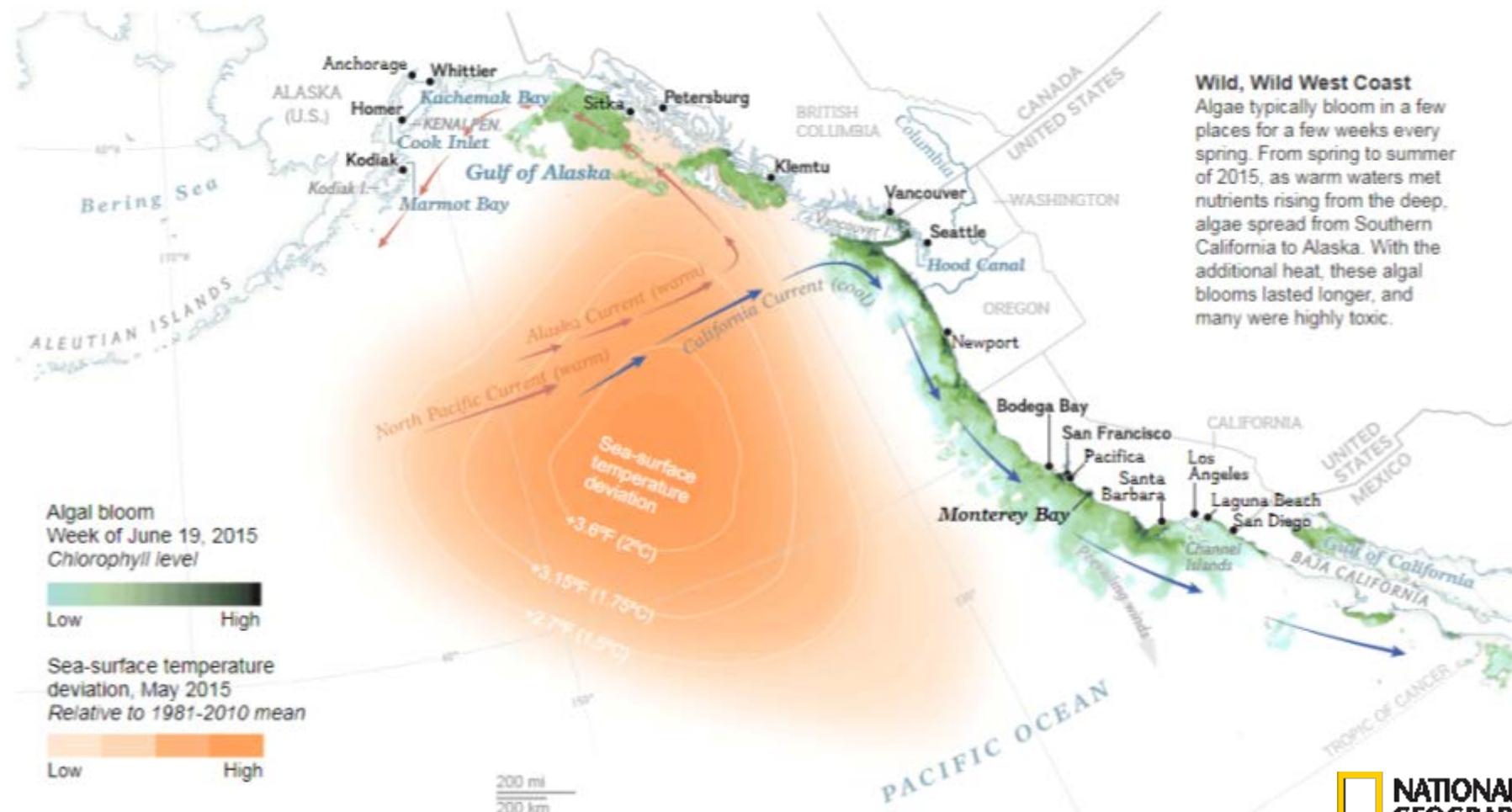


?

Possible causa/possible causes

2016- 2019

- Agua caliente anormal debido a fenómeno del “blob”/abnormal Warmer Water
- Crecimiento de la población(menor alimento)/The population size has increased





AGRADECIMIENTOS



Programa de Investigación Científica del Ecosistema de Laguna San Ignacio

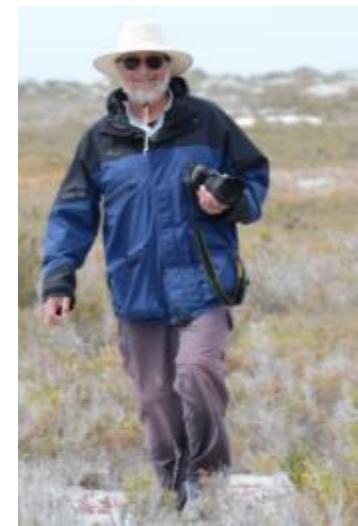
Un Proyecto de la Ocean Foundation en Baja California Sur, Mexico



THE OCEAN FOUNDATION



COMISION NACIONAL DE
AREAS NATURALES
PROTEGIDAS





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Gracias

Preguntas?

