

Increase in large whale entanglements in 2018 in the Pacific Northwest: Improved reporting & changes in whale occurrence

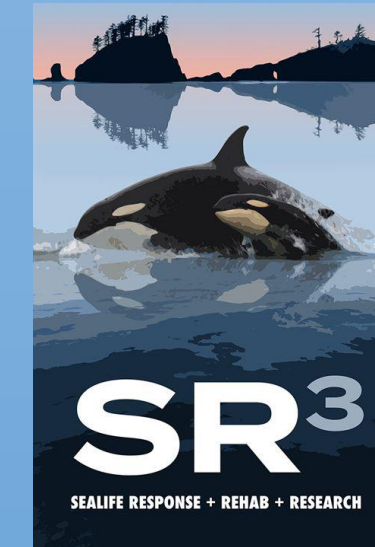


Northwest: Improved reporting & changes in whale occurrence

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More Entanglements: More than 5 times the long term average

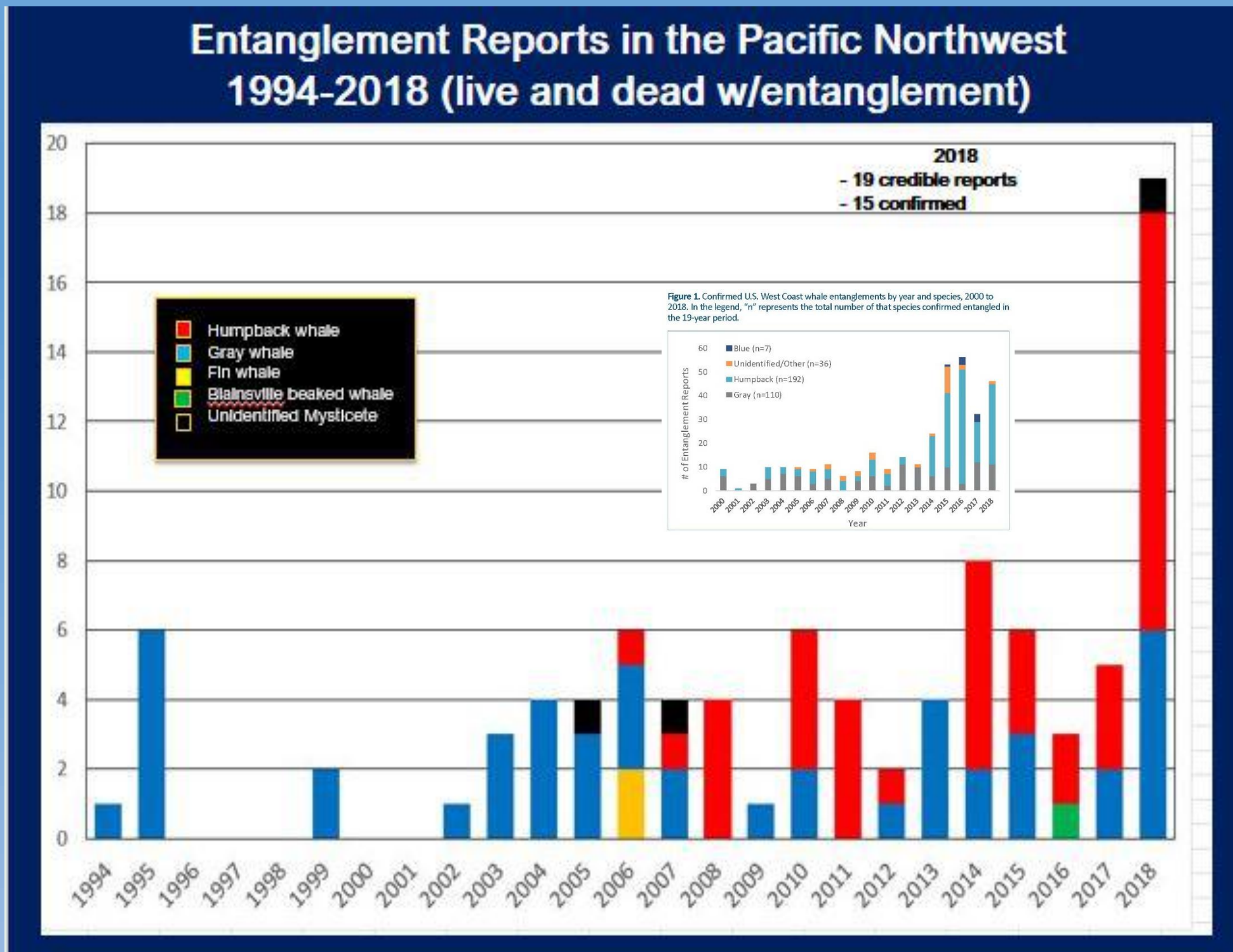
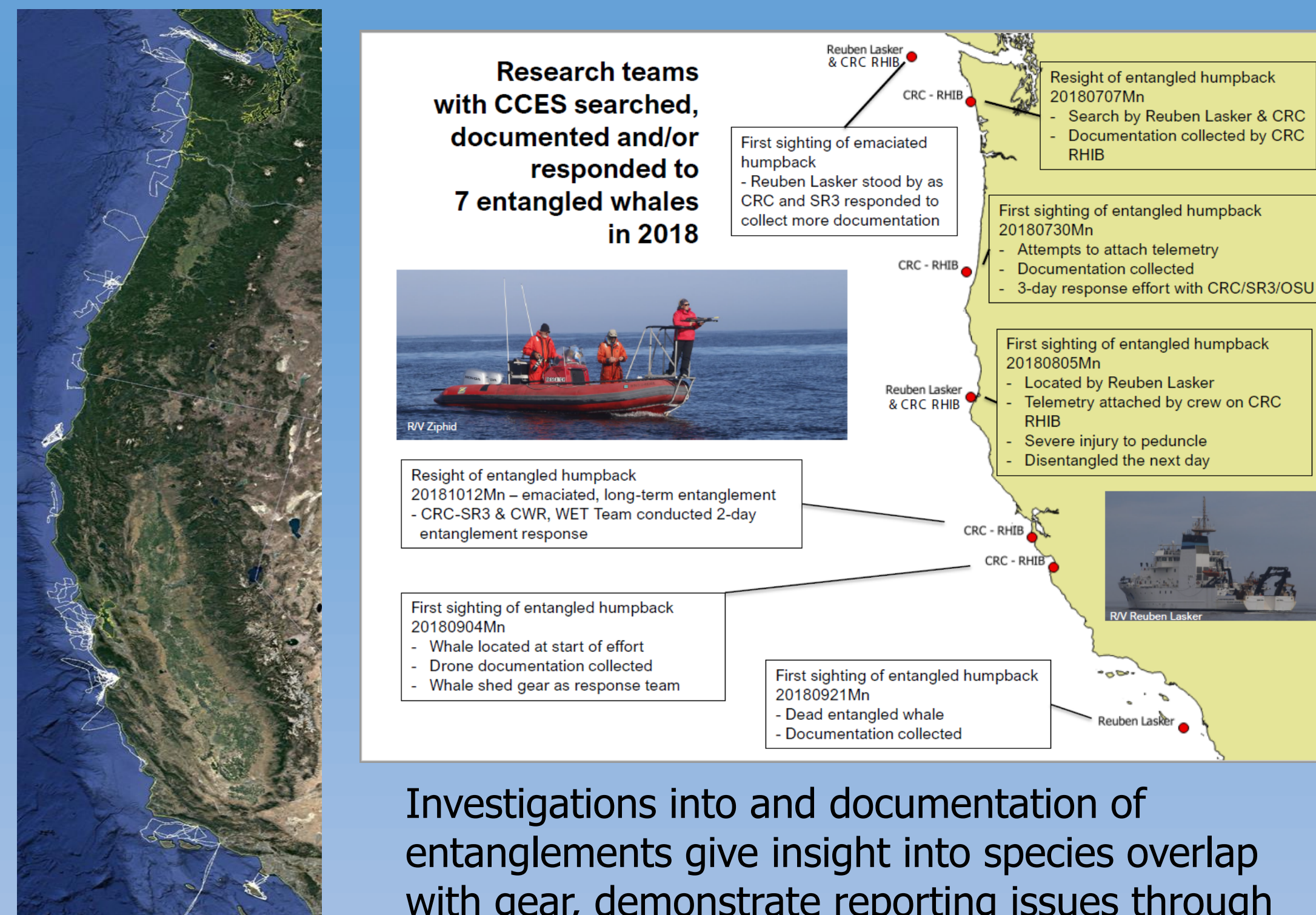


Figure above and inset: NOAA 2018

More Research: Dedicated surveys were conducted in 2018 searching for entangled whales and a survey down the US West Coast in coordination with NOAA AND SWFSC: See poster #1124 for more information



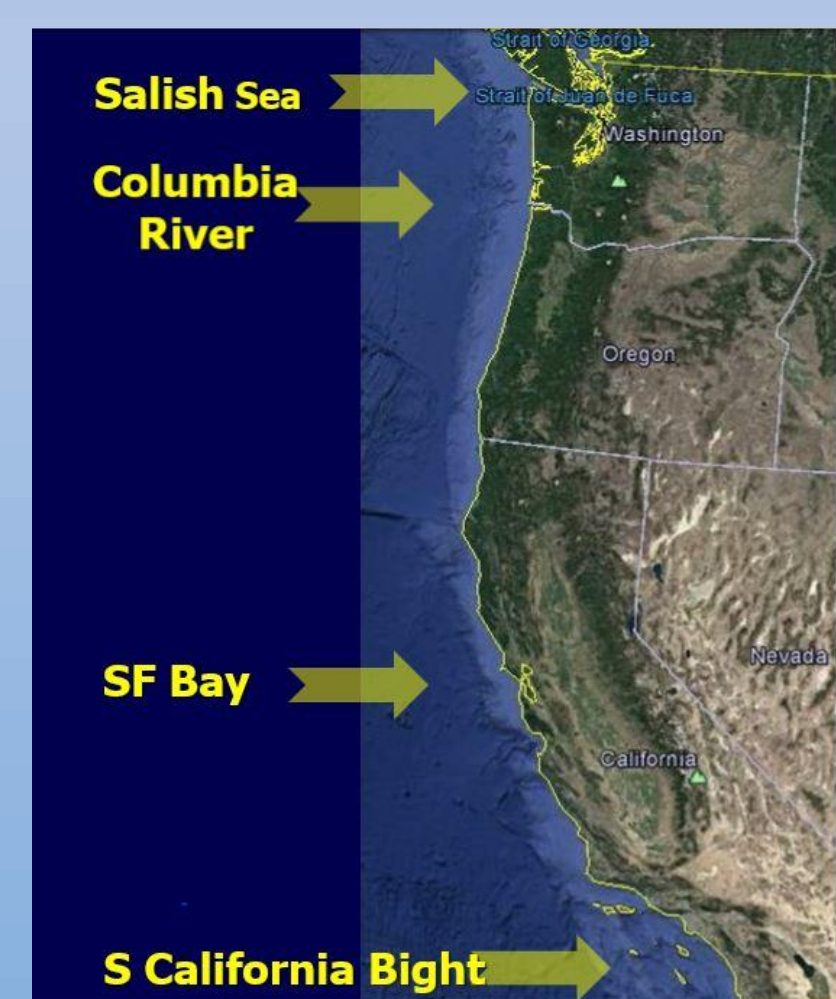
Investigations into and documentation of entanglements give insight into species overlap with gear, demonstrate reporting issues through gear origin, and inform discussions with fisheries

Next Steps: Continued research and outreach with managers, mariners, scientists and coastal communities about entanglement issues including

- Develop coordination between aerial programs in CA / OR with entanglement response teams
- Conduct large whale research with trained responders and equipment wherever possible
- Continue to develop relationship with USCG and State Agencies to provide stand-by vessels
- Document and analyze gear removed from whales and transfer under chain of custody to a secure warehouse
- Provide more trainings to increase the number of authorized responders to increase the likelihood of responses, their outcomes and better documentation during responses.

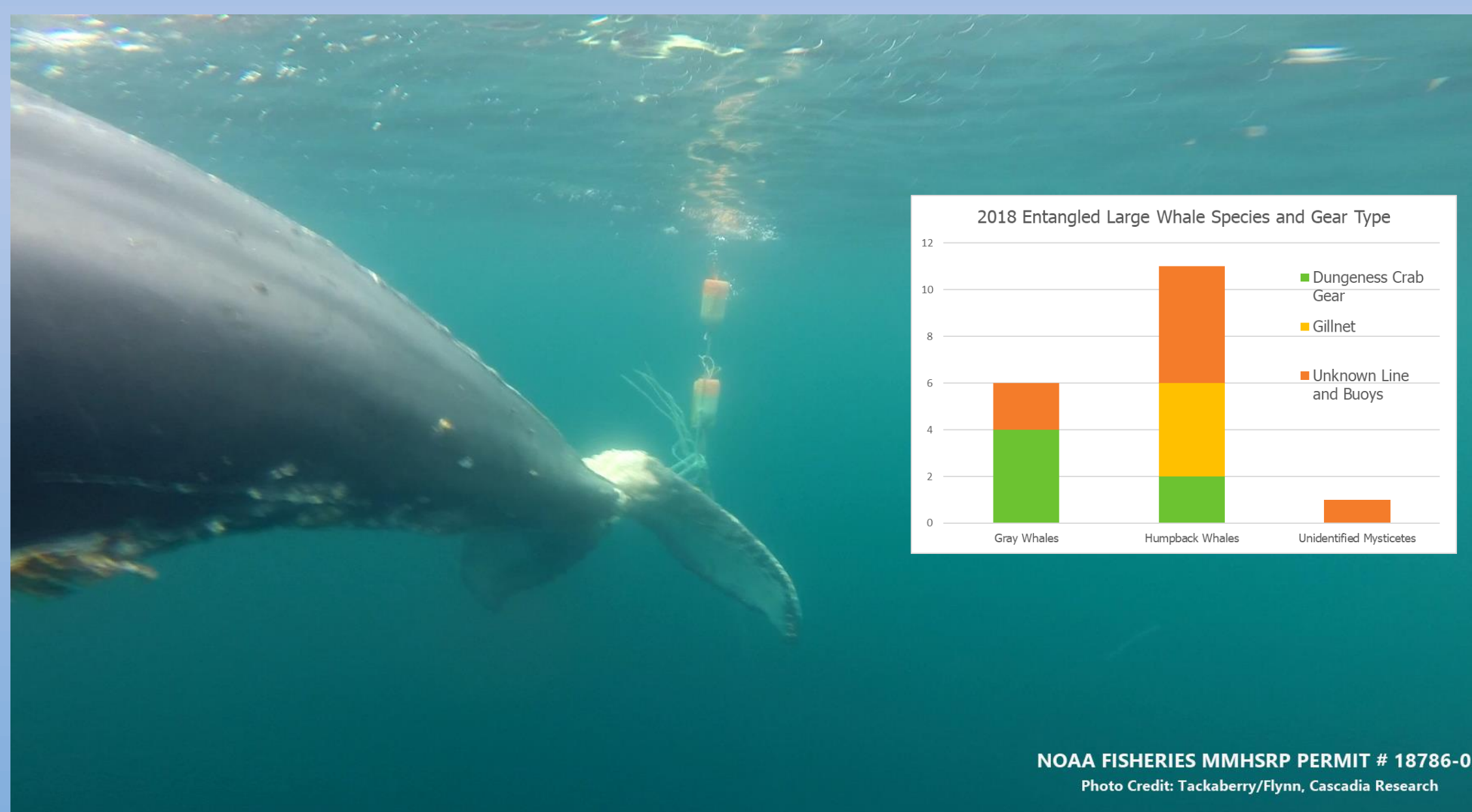
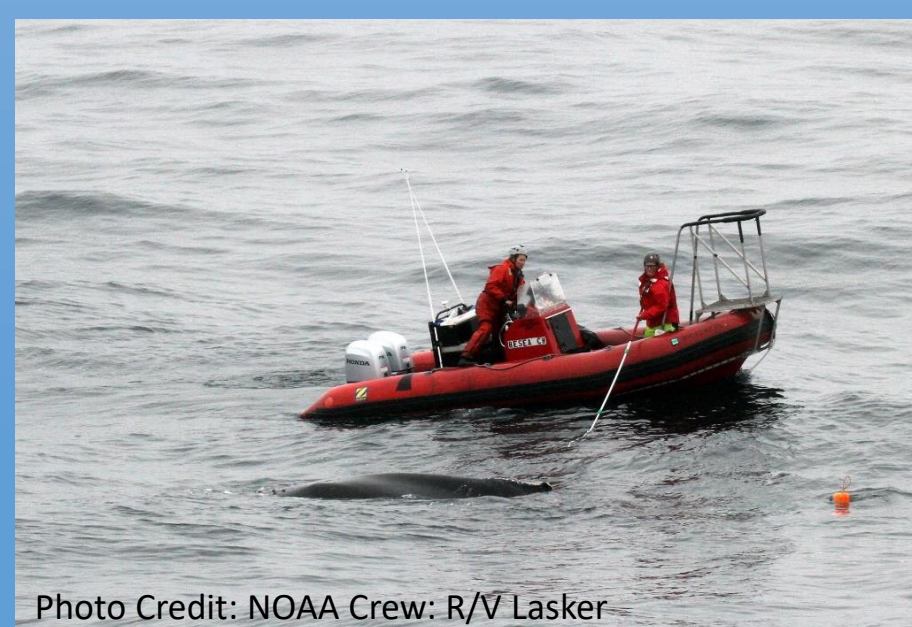


More Whales: Changes in abundance and distribution expose whales to risks of anthropogenic activities due to overlapping areas of use



- Humpback whale abundance along US WC has increased at 7%/yr from early 1990 to late 2000s & increased dramatically from 2015-2017: some whales seen expanding into areas where co-occurrence with fishing gear occurs; e.g tribal gillnet in western Juan de Fuca
- Gray whales were seen in Puget Sound earlier and staying longer and other individuals were observed feeding off the coast in late spring; this may have been an early indication of the nutritional stress exhibited in many stranded gray whales during the 2019 Unusual Mortality Event

More reporting and Education: Pacific Northwest Large Whale Entanglement Response Network (PNWLWERN): Comprised of 7 organizations



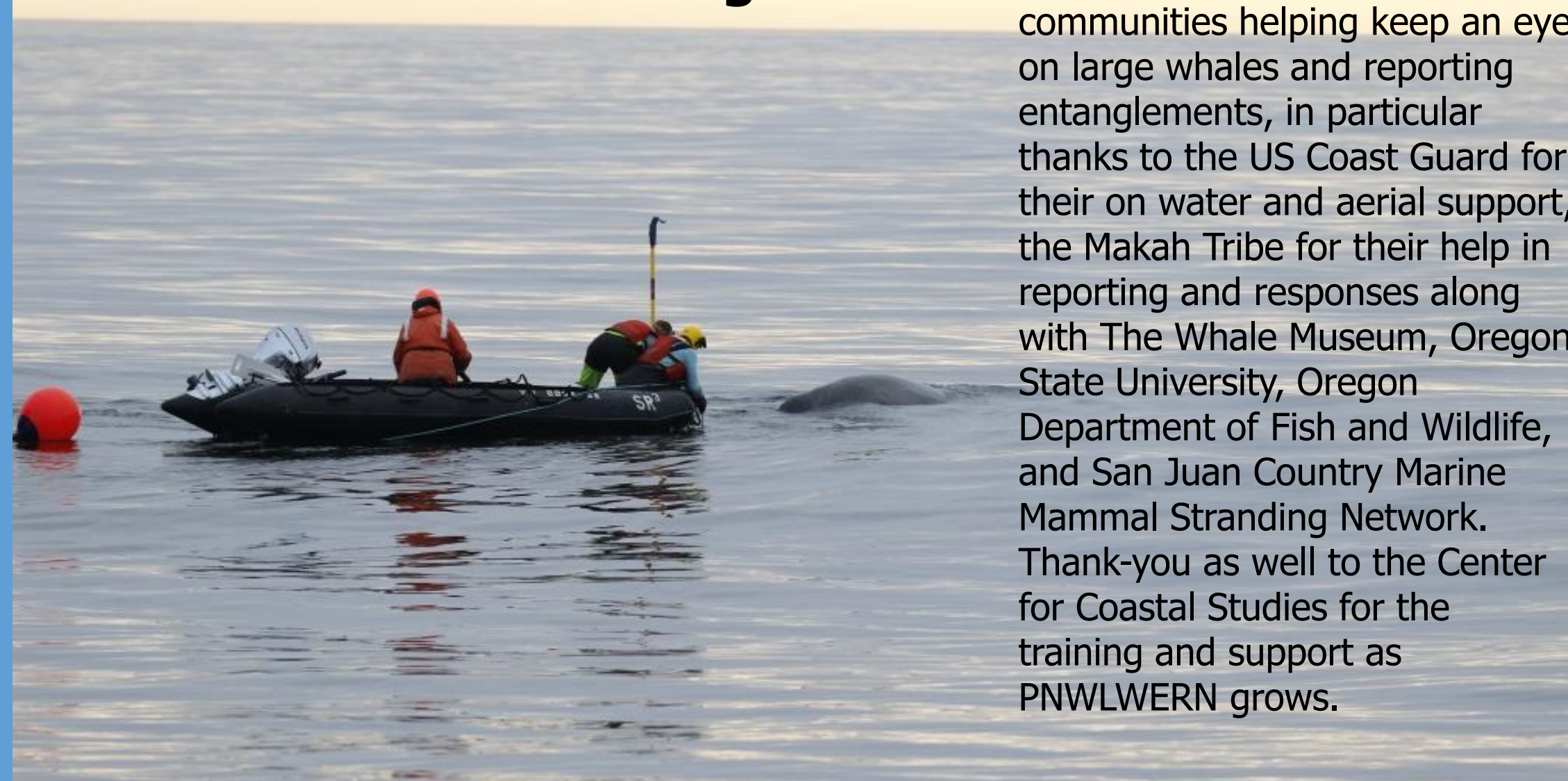
Large whales reported entangled in other areas with WA/OR gear is not reported in PNW numbers of animals



	2015 - 2019 Entanglements	Gear Origin	
		Washington	Oregon
Whale Found Entangled	BC	1	0
	WA		2
	OR	3	
	CA	1	4
	MX	1	0

Acknowledgements:

We would like to thank maritime communities helping keep an eye on large whales and reporting entanglements, in particular thanks to the US Coast Guard for their on water and aerial support, the Makah Tribe for their help in reporting and responses along with The Whale Museum, Oregon State University, Oregon Department of Fish and Wildlife, and San Juan County Marine Mammal Stranding Network. Thank-you as well to the Center for Coastal Studies for the training and support as PNWLWERN grows.



Take Away: 2018 increase in entangled reports stemmed from:

Real increase in entanglement

- Humpback whale increase in abundance and expansion of distribution into areas of higher fishing activity.
- Gray whales seen in poor nutritional condition in 2018 attempting to feed in nearshore areas with higher gear densities (ahead of 2019 UME).

Increased reporting from other sources

- More trainings and education to mariners since 2016

More research activities documented entanglements

- More thorough research surveys along US West Coast conducted in 2018 including both large vessel systematic survey and small RHIB surveys (see poster 1124).

