

# A small resident social group of pygmy killer whales off the island of O'ahu: photo-identification and satellite tagging reveal differences in social patterns of this species in the Hawaiian archipelago

Sabre D. Mahaffy<sup>1</sup>, Robin W. Baird<sup>1</sup>, Tori Cullins<sup>2</sup>, Gregory S. Schorr<sup>1</sup>, Daniel L. Webster<sup>1</sup>, Daniel J. McSweeney<sup>3</sup>

<sup>1</sup>Cascadia Research Collective, Olympia, WA USA (mahaffys@cascadiaresearch.org) <sup>2</sup>Wild Dolphin Foundation, Waianae, HI USA <sup>3</sup>Wild Whale Research Foundation, Holualoa, HI USA

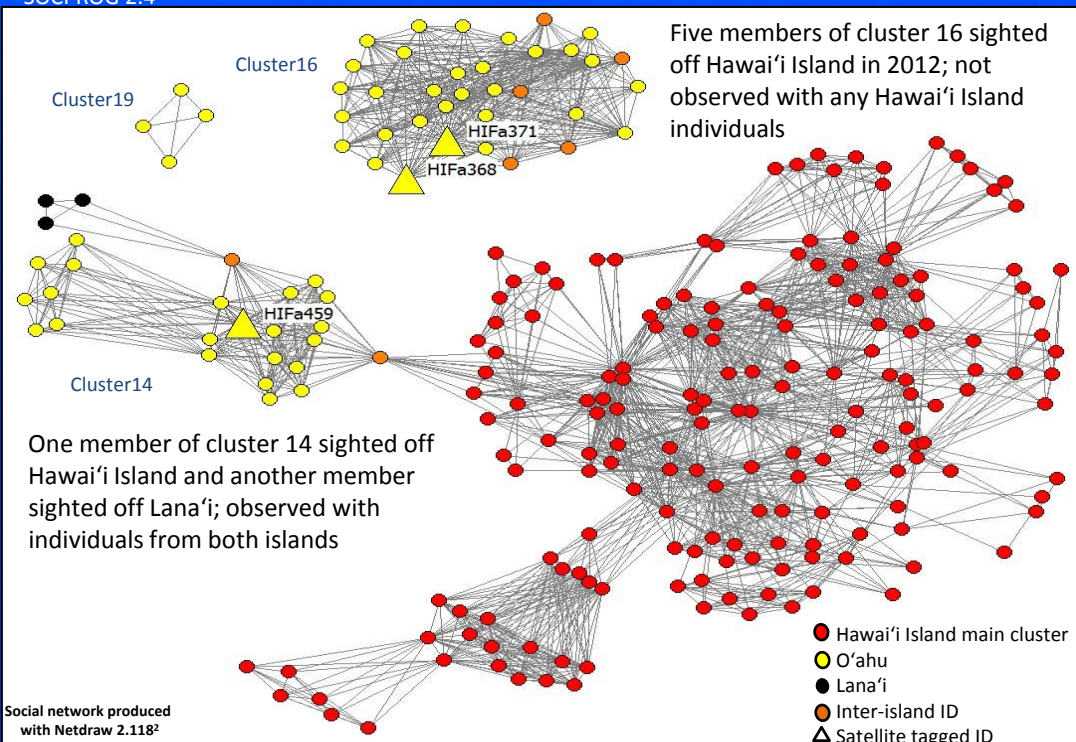
## Pygmy killer whales in Hawai'i

- One of the least-known species of delphinids world-wide
- Evidence of a small resident population off Hawai'i Island forming discrete social clusters within the same social network<sup>1</sup>
- 20 photographic encounters off O'ahu 2007-2013
- 52 distinctive individuals identified; 53.9% seen more than once

## Social network analysis identified three isolated social clusters with differing levels of site fidelity\*

Cluster	# individuals	# sightings/Island	O'ahu sightings
14	19	4(2 O'ahu, 1 Hawai'i, 1 Lana'i)	1-2 times ; 1-2 years
16	29	18 (17 O'ahu, 1 Hawai'i)	1-16 times ; 1-7 years
19	4	1 (O'ahu)	1 (2008)

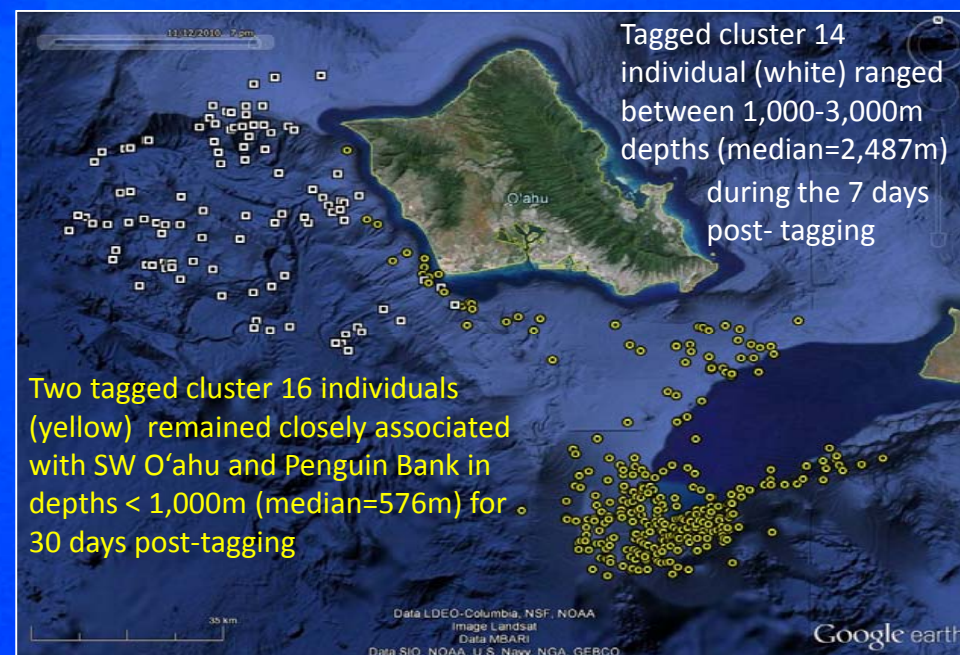
\* SOCPROG 2.4



Funding provided by the Navy LMR program, Naval Postgraduate School and NOAA's PIFSC. Thanks to Chuck Babbitt, Alicia Franco, Jim Ward, Kelly Wright and The Dolphin Institute for providing photos. Background photo © Jim Ward

For more information: [www.cascadiaresearch.org/hawaii/hawaii.htm](http://www.cascadiaresearch.org/hawaii/hawaii.htm). Poster presented at the 20<sup>th</sup> Biennial Conference on the Biology of Marine Mammals, Dunedin, New Zealand, December 2013

## LIMPET satellite tags deployed in 2010 revealed differences in habitat use between clusters<sup>3</sup>



## Conclusions

- There is a single small resident social group of pygmy killer whales off the western and southern shores of O'ahu
- Waters off western and southwestern O'ahu are only occasionally visited by other social groups, none of which have been documented associating with the residents
- The association pattern observed off O'ahu of isolated social groups that do not interact is unlike that recorded off Hawai'i Island and may indicate island-specific differences in association and residency

### References

<sup>1</sup>McSweeney et al. 2009. Site fidelity and association patterns of a rare species: pygmy killer whales (*Feresa attenuata*) in the main Hawaiian Islands. *Marine Mammal Science* 25:557-572.  
<sup>2</sup>Borgatti, S.P. 2002. Netdraw Network Visualization. Analytic Technologies: Harvard, MA  
<sup>3</sup>Baird et al. 2011. Movements of two satellite-tagged pygmy killer whales (*Feresa attenuata*) off the island of Hawai'i. *Marine Mammal Science* 27:E332-337