



### **“Test” LightHawk Survey CA Dungeness Crab Fishing Gear Working Group**

On Sunday May 1, the first aerial “test” survey flight was conducted onboard a Cessna 182 out of Half Moon Bay in cooperation between [LightHawk](#) and the California Dungeness Crab Fishing Gear Working Group. Participants of the flight included LightHawk volunteer pilot Bill Rush and Working Group participants Tom Mattusch and Doug Laughlin. The flight took place from about 10:00 AM to 2:00 PM, covering a stretch of coastal waters along the Central California coast between Point Reyes and Monterey Bay, and out as far as the Farallon Islands (refer to flight track figure).

The objectives of the flight were exploratory to help determine what is possible/practical from this platform, to help inform future Working Group discussion and potential future collaborations with LightHawk. Building off of initial Working Group discussions recognizing the value of aerial surveys to enhance data collection, fundamental questions asked in preparation of the flight were:

1. Could LightHawk flights survey for entangled whales and improve monitoring and reporting capabilities in certain areas where the risks of entanglement may be high?
2. Could LightHawk flights help gain a relative understanding of the distribution of gear and/or whales at a given moment in time and/or the relative overlap between gear and whales?

### **Flight Summary Notes from Tom and Doug**

LightHawk volunteer pilot Bill Rush departed Half Moon Bay Airport with Doug Laughlin and Tom Mattusch. Flight started to the west to see the concentration of gear in the separation zone. Many strings of crab gear were spotted, not much whale activity at the particular time that we were there. The flight continued past the pilot boat boarding area and up towards Duxbury.

The crew encountered their first pair of gray whales at 37 54.6 / 122 47.3 below Point Reyes (**point 1** on the map).



At Point Reyes, there was a heavy concentration of gear and several crab boats were working, 37 57.8 / 122 56.5 (**point 2**).



We were flying at 1300' and had good visibility for pots boats and wave tops. At a few miles above Point Reyes, we turned to head down towards Pigeon Point. Altitude decreased to 600' to see how viewing would be. Just above Santa Cruz numerous boats were seen in less than 30 fathoms of

water. Many sailboats or seen in front of Santa Cruz and commercial boats were seen working the water out further.

We encountered a full breach at 36 53 / 121 54 (**point 3**). There was a small area of white caps below Moss Landing.



The salmon fleet appeared to be working in the 36 53 / 122 00 area (**point 4**, no photo).

Quick spout by salmon fleet, 36 49 / 122 02 (**point 5**).



Two humpback whales at 37 01 / 122 26 and then a single (**point 6**).





Working back NW, single at 37 10 / 122 34 (**point 7**).



Two whales spotted at 37 21 / 122 50 among lots of crab gear (**point 8**).



Whales and dolphins at 37 23 / 122 53 (**point 9**) in roughly 1,200' of water (Navionics app).



Two whales 37 24 / 122 54 (**point 10**).





Small whale at 37 25 / 122 53 (**point 11**, whale not pictured).



One whale at 37 26.7 / 122 53.7 thick gear in roughly 480' (**point 12**).



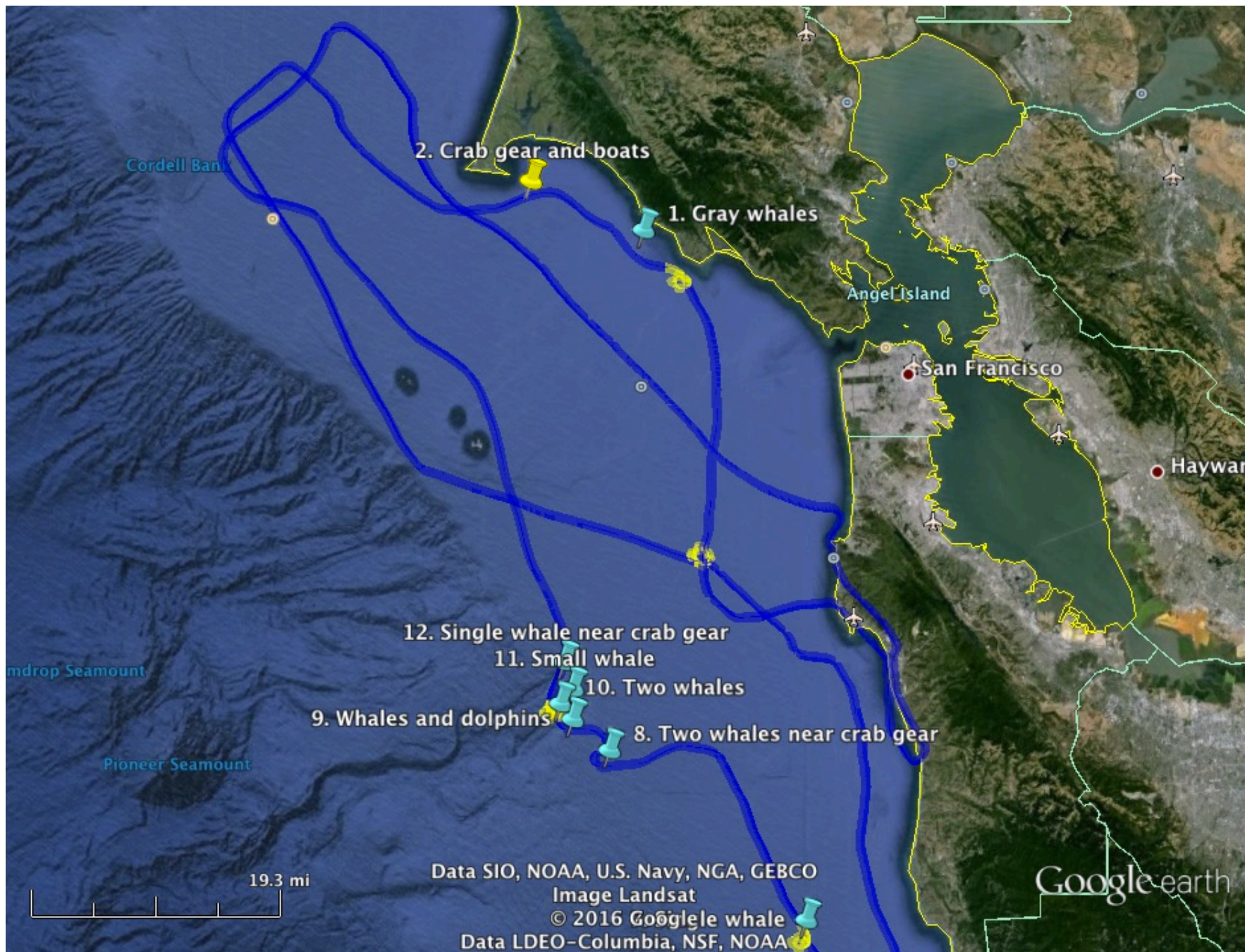
Four hours of flying at roughly 110 kts covered more than 400 miles of ocean with a wide swath visible on both sides of the plane. The pilot and the two observers worked well as there was a lot of ocean to observe. Weather was ideal. About 14-15 whales spotted, and no entanglements. Area flown included from the shore out to about 12 miles.

### **Take Home and Lessons Learned**

All indications are that the flight was considered a success based on the feedback provided by all participants. There is interest from participants in considering future flights and further exploring potential ideas for developing standardized sampling protocol. Some of the lessons learned and key feedback from the flight includes:

- Good weather is critical to being able to spot whales and clearly distinguish gear. Good weather is likely to be more influential on the quality of visibility than relative flight altitude. Consequently, maintaining flexible flight scheduling options around good weather is a must.
- Generally (from fisherman’s knowledge and perspective), if you know the area you are flying over and more specifically the bottom type in that area, you should be able to determine what fishery is associated with the gear that is present (e.g. Dungeness vs rock crab). Other types of fixed gear like spot prawn and sablefish are also distinguishable because of large polyballs and/or high flyers.
- Mounting cameras for more extensive photograph or video documentation on planes like the one used for this flight is possible, but will take a careful consideration. It is not clear yet if more accessible cameras like Go Pros are suitable for this type of effort.
- The objectives of looking for entangled whales and highlighting relative gear/whale distributions produced a flight/survey pattern that is expected to be quite different than a flight more specifically surveying for the purposes of generating gear distribution and abundance. The former is freer to target areas where gear might be expected to be concentrated and explore particular sightings of gear, whales, possible entanglements, as opposed to being more confined to a traditional transect survey-style flight.









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# Fishermen fly in search of entanglements

*Carina Woudenberg*

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Tom Mattusch and Doug Laughlin, left and center, prepare to board an airplane that was flown by pilot Bill Rush on Saturday at Half Moon Bay Airport. Carina Woudenberg / Reviwe



One potential downside to the crab season's late opening is the danger that fishing gear can pose to migrating whales. Tom Mattusch and Doug Laughlin — both fishermen familiar with the waters off of Pillar Point Harbor — traded their boats for an airplane on Sunday to see whether they could spot any whales tangled in the fishing gear.

That morning they hopped in a four-seat Cessna at the Half Moon Bay Airport. Pilot Bill Rush took them on a nearly four-hour ride that covered a section of the local coast. The pair spotted 15 whales and a lot of fishing gear, but no entanglements.

“Our biggest concentration of whales was in an area that had a lot of crab gear as well,” said Mattusch a day later. “Our entire day, there was absolutely nobody dragging anything, thank goodness,” he added.

Mattusch and Laughlin are both members of the Whale Entanglement Working Group, which grew out of the California Dungeness Crab Task Force and created specifically to address a growing concern surrounding whales getting trapped in fishing gear.

The group's development was fostered by Strategic Earth Consulting, a firm that links science and policy with community outreach. The group takes an interest in environmental concerns, said the firm's co-founder Kelly Sayce.

Sayce says that many fishermen say that they haven't witnessed whale entanglement first hand, but have shown a willingness to



help just the same.

“We don’t have all the information,” Sayce said. “From the fishermen’s perspective we want to be part of the solution. We want to move the conversation forward in a very proactive way.

Mattusch, who is also San Mateo County Harbor District Board president, and the owner and captain of the 53-foot charter known as the Huli Cat, echoed that sentiment.

“When you see them it kind of tugs at your heart strings, Mattusch said, adding he hasn’t seen an entangled whale personally.

“There’s a greater awareness.”

Mattusch said he was impressed with the amount of ground they were able to cover in the flight provided by LightHawk pilot Rush. LightHawk is a nonprofit organization that provides flights for conservation-minded missions.

Sayce says they were grateful to Rush for donating his time toward the project. As far as she’s aware this may have been the first trip dedicated to spotting entangled whales though she knew the U.S. Coast Guard and the California Department of Fish and Wildlife have gone on similar flyovers without specifically looking for whales.

In the future, the effort may rely on drones to search for the entangled mammals, but that may be a ways off.

“That’s on everyone’s radar,” Sayce said. “We may not be quite there yet.”

## **By the numbers**

According to the National Oceanic and Atmospheric Administration, 61 whales were reported as entangled off the coasts of Washington, Oregon and California. That is the highest annual total since NOAA fisheries began keeping records in 1982.

NOAA attributes these numbers to a variety of factors, including an increase in whales in general and a shift in their distribution.

Data for 2016 isn’t out yet but the crab season’s start has been identified as a contributing factor for increased entanglements.

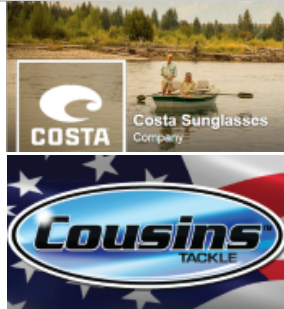
“I can tell you that there has been an increased number of entanglements that have been reported in California during April since the crab fishery opened,” wrote Dan Lawson, fisheries biologist with the Protected Resources Division of the National Marine Fisheries Service West Coast Regional Office, in an email to the Review. “Many, but not all, of these reports were from the Central California and San Francisco/Monterey Bay area.”

Reports of entangled whales come from a variety of sources, Lawson said, from the public, the Coast Guard, fishermen and researchers.

“I think improved (greater) reporting is a part of it,” Lawson wrote.




“However, it is unlikely that alone can explain it all. Like everything, it's a combination of factors most likely in play.”

-- *Carina Woudenberg*

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	<b>Bobby G</b>  Coastside Member	Join Date: Location: Posts:	Jan 2009 Moss Beach 1,344
 <b>Whale flight</b>			
<p>Tom Mattusch and I took a flight today, representing the whale entanglement working group of the Dungeness Crab Task Force. The flight was provided by LightHawk, a non-profit organization that facilitates flights for other environmental groups to promote good conservation. Bill Rush piloted his Cessna 182 for 4 hours, from HMB to Tomales, down to Pacific Grove, out 15 miles off the coast, back over the Farallons to Pt. Reyes, and finally homeward with a sweep in shore from Martins to the airport. In all, about a dozen whales were sighted, along with about 70 commercial and recreational crabbers. No entangled whales were seen. The opportunity gave us good insight to it's future feasibility in spotting entangled whales as well as the proximity of whales to the crab grounds. As recreational crabbers, I would like to remind everyone of the best practices guide that the group put together for our use.</p>			