2013

“A Year in the Life of a Hungry Humpback Whale”

Winter-Spring Ocean Conditions

• An exceptionally good upwelling year
• Could see this by February, based on NPH (North Pacific High), which was higher than any other time 1990-2012
• March: Depth of the 26.0 isopycnal was shallower than average
• May-Jun: SST was cooler than average in most areas

Spring Prey Availability (late Apr – early Jun)

• Krill abundance high
• Widespread along outer shelf-break, from Pt Sur to Pt. Arena (36N - 39N)
• Virtually no anchovy found anywhere between Pt. Sur and Pt. Arena (36N - 39N)
• Some anchovies south of Pt. Sur

Modeled weekly whale densities for May

• Widespread whale distribution between Pt. Reyes and Pt. Conception
• No smaller ‘hotspots’ during spring
• By September, whales moved into Monterey Bay, creating a local ‘hotspot’ (anecdotal information)

Forage/Ocean Conditions
RAF: low?

Humpback Whale Entanglements Confirmed: 0
Winter-Spring Ocean Conditions

An average upwelling year

By February, the NPH (North Pacific High) was much lower than in 2013

March: Depth of the 26.0 isopycnal was slightly deeper than average nearshore, and slightly shallower offshore

May-Jun: SST was warmer than average in most of the region

Spring Prey Availability (late Apr – early Jun)

Krill

• Krill abundance was average
• Concentrated offshore along shelf-break, especially in outer Gulf of the Farallones

Anchovy

• Anchovy concentrated south of Monterey Bay
• Highest concentrations off Moro Bay

Modeled weekly whale densities for May

• Highest Density ‘Hotspots’ in the Gulf of the Farallones and nearshore Monterey Bay and Morro Bay

Forage/Ocean Conditions

RAF: ?

Humpback Whale Entanglements Confirmed: 17
2015
“A Year in the Life of a Hungry Humpback Whale”

Winter-Spring Ocean Conditions

- A weak upwelling year
- By February the NPH (North Pacific High Index) had dropped to lowest level since 2010
- March: depth of the 26.0 isopycnal was deeper than average
- May-Jun: SST was warmer than average, and the

Spring Prey Availability (late Apr – early Jun)

- Krill abundance was low/moderate
- Concentrated offshore along shelf break in a few patches off San Mateo, Sonoma, and Mendocino Counties

- Anchovy very abundant
- Distributed throughout the region, with high concentration patches off central and southern California

- Concentrated ‘Hotspots’ very close to shore in Monterey Bay in early May
- Distribution broadens along central coast during second half of May

Humpback Whale Entanglements Confirmed: 31

Forage/Ocean Conditions
RAF: ?
**Winter-Spring Ocean Conditions**

- A weak upwelling year
- By February, we could see that the NPH (North Pacific High) remained very low for the third year in a row.
- **March**: Depth of the 26.0 isopycnal was deeper than average throughout the region.
- **May-Jun**: SST was warmer than average throughout the entire region

**Spring Prey Availability**

(late Apr – early Jun)

- **Krill**: Abundance low
- Few concentrations along the shelf-break

- **Anchovy**: Abundant in the south and concentrated inside Monterey Bay

**Modeled weekly whale densities for May**

- Concentrated ‘hotspots’ very close to shore in Monterey Bay, Gulf of Farallones and Morro Bay during early May
- Distribution broadens along central coast during late May

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**“A Year in the Life of a Hungry Humpback Whale”**

**Humpback Whale Entanglements Confirmed**: 42
El Niño Forecast

The most recent ONI value (May - July 2019) is +0.5°C.

ENSO-neutral is most likely to continue through Northern Hemisphere winter 2019-20 (50-55% chance).*