

North Pacific Humpback Whale Genotype Matches Student Worksheet #2

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What Next? Using this information to form policy

How do we regulate fisheries and impact on “non-target” species? Are we concerned at all? What are the guidelines for this?

PBR: Potential Biological Removal

8. Click on the link [here](#) and explain what this is in the space below: 3pts

9. If we exceed the PBR - what is the potential problem or issue? 2pts

What do WE do next???

**Stop fishing and crabbing during certain times of the year?*

**Mandate that only “whale safe” crab lines be deployed? (Very expensive and will drive the price of crab way up and put boats and people out of work.)*

**Everything is fine - just keep on keeping on?*

To inform our next steps, we need to calculate the PBR and compare it to the number of entanglements in our region.

How to do our own PBR Calculation

Population size estimates for humpback whales:

CA/OR/WA Stock - 2016 Estimate: 1,876

Mexico DPS - 2017 Estimate: 2,806*

Central America DPS - 2017 Estimate: 500

Hawaii DPS - 2011 Estimate: 10,000

DPS = Distinct Population Segment

Recovery Factor: 0.3

Growth Rate: 0.08 (or 8%)

Allowed PBR = (Minimum population size estimate) x ½(Growth rate) * (Recovery factor 0.3)

NP humpbacks spend ½ year outside US waters, **US Allowed PBR / 2 = Actual PBR**

10. Calculate the Actual PBR for humpback whales that feed along the CA/OR/WA coast. *Show your work.*
5pts

11. Calculate the PBR for humpback whales that belong to the Central American DPS. *Show your work.*
5pts

Read the [Entanglement Report 2018](#)

- Take notes: what are the numbers, what are the locations, what species, sources of entanglements, responses and outcomes, what are we currently doing to address this issue.
- This should take you around 15-20 minutes.

Read: [Rulemaking to Designate Critical Habitat for the Central America, Mexico, and Western North Pacific Distinct Population Segments of Humpback Whales](#)

- This was open to public comment on the Federal government's Regulations.gov website.
- Read public comments (same link)

12. Using ALL of the information from this project: humpback whale population numbers, migration routes, genetic data from our local feeding population of whales, your observations in problem #7 (what populations of whales are being entangled), the Entanglement Report 2018, etc.

Argue which number (from #10 and #11) should we use to manage humpback whales off the CA/OR/WA coast and why? Explain your reasoning in detail - using as much information as possible from this project. 10pts