

Harbor Porpoises of Puget Sound

Quizzes and Worksheets

This Packet Contains:

- Pre-Quiz
- Post-Quiz
- Video Worksheet
- Digging Deeper



Puget Sound Research
Conservation & Education





Pre-Quiz

Name _____ Date _____

1. Which of the following species is small, found throughout the Salish Sea, and needs to feed more consistently than other species?
 - a. Harbor porpoise
 - b. Harbor seal
 - c. Pacific white sided dolphin
 - d. Minke whale
2. Behaviors of most creatures can be attributed to which two primary motivators (e.g. what do they need for survival the most)?
 - a. Food and sleep
 - b. Shelter and living in groups
 - c. Food and shelter
 - d. Rest and activity
3. Harbor porpoises were all but gone in the Puget Sound in which time period?
 - a. 1940s-1950s
 - b. 1970s-1990s
 - c. 2000-now
 - d. 1960s
4. What technique is used by many marine mammal researchers to identify individuals without touching/harming the animals?
 - a. Photo-identification
 - b. Biopsy darting
 - c. Freeze branding
 - d. Survey sampling
5. Which of the following has the shortest life-span?
 - a. Orcas
 - b. Pacific white sided dolphins
 - c. Bottlenose dolphin
 - d. Harbor porpoise

6. _____
is the term for how dolphins and porpoises use sound to find food.

- a. Sonar
- b. Echolocation
- c. Ultrasound
- d. Vocal warping

7. What is unique about harbor porpoise vocalizations?

- a. They make very low frequency sounds that we can't hear
- b. They don't make sounds
- c. They make very high frequency sounds that we can't hear
- d. They make only whistles and no other type of sound

8. Which of the following is a difference between porpoises and dolphins?

- a. Porpoises have triangular dorsal fins, dolphins have falcate (curved) dorsal fins
- b. Porpoises have spade shaped teeth, dolphins have cone shaped teeth
- c. Neither are correct
- d. Both are correct

9. What is the term for the behavior when a whale, dolphin or porpoise lunges at the surface, causing water to spray up on both sides, while chasing a fish?

- a. Fish catch
- b. Surface chase
- c. Porpoising
- d. Aerial

10. Why are harbor porpoises and harbor seals more susceptible to the effects of human actions that happen on land than other marine mammals?

- a. They live closer to shore than other marine mammals
- b. They interact with humans more than other marine mammals
- c. They are lower on the food chain than other marine mammals
- d. They are not more susceptible than other marine mammals

Score ____/10



Post-Quiz Name _____ Date _____

1. Which of the following species is small, found throughout the Salish Sea, and needs to feed more consistently than other species?
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11. How much do you feel you learned about harbor porpoises, their ecology, and research/conservation in this video?

- a. Nothing – I already knew the information
- b. I already knew some but learned a little
- c. I learned a lot of new information
- d. Everything was new information

12. I will be able to use the information from this video to help describe real and hypothetical ecological interactions between marine species, humans and the physical environment and the consequences of these interactions.

- a. Not at all
- b. Partially agree
- c. Fully agree



Video Worksheet

Name _____

1. What two species of marine mammal does Pacific Mammal Research study? _____ & _____

2. Name one reason that collaboration between research scientists is important. _____

3. Name the three things that harbor porpoises do in Burrows Pass (PacMam's study site) that make it biologically important for them.

4. Describe why harbor porpoises need food more consistently than other marine mammals. _____

5. Researchers know that individual harbor porpoises return to the study site, what technique do they use for identification?

6. Name the two primary motivators that help shape the behavior of most animals (e.g. what do they look for/need the most?).

7. Name 2 ways that the Strait of Juan de Fuca influences the environment in Burrows Pass that benefits the organisms there.

8. Describe the timeline for harbor porpoises in the Salish Sea – when were they abundant, all but gone, and returned?

Abundant

All but Gone

Returned

|

|

|

(year/s)

(year/s)

(year/s)

9. What factors may have influenced their disappearance and return?

10. Name three things that are recorded in the field by researchers.

11. Why was finding a land-based study site important for researching harbor porpoises?

12. What is it called when a harbor porpoise chases a fish at the surface (lunging at the surface)?

13. When researchers see harbor porpoises doing aerial behavior, what is most likely happening, and which sex (male or female) is jumping out of the water?

14. How long do porpoises live (is this shorter or longer than for dolphin species) and when do they become sexually mature?

15. Female harbor porpoises can be _____ and _____ each year (or every other year), which increases their energetic needs and thus the food that they require.

16. Why are gulls helpful when photographing harbor porpoises?

17. Name 2 differences between dolphins and porpoises.

18. How do porpoises sleep and how does this relate to the fact that they are conscious breathers?

19. How do porpoises use sound to find food? (specifically what is the term and how does it work?) _____

20. Harbor porpoises vocalize in the high frequency range (which we have only more recently been able to record with new technology); why is it thought that they evolved this adaptation?

21. What is the nickname for the harbor porpoise due to their loud exhalation? _____

22. What is the average size for a harbor porpoise? _____

23. A harbor porpoise is a top predator – why are animals like these more susceptible to issues like pollution, and how does it affect their health?

24. What about harbor porpoise and harbor seal ecology makes them more susceptible to what humans do on land than other marine mammals? _____

25. Why is it important to know more about the biology, behavior and ecology of harbor porpoises in relation to climate change and other anthropogenic (human) impacts?

Question 1:

Harbor porpoises eat herring (one of many species they eat), herring eat phytoplankton (small microscopic photosynthetic organisms). Water quality is important to phytoplankton and is influenced by water movement due, in part, to currents and tides, bringing nutrient rich water to an area. Describe how harbor porpoises would be affected if water quality and nutrient distribution significantly decreased, or even ceased, in a biologically important area for them. Remember that harbor porpoises need consistent food sources, more than other marine mammal species; how would this affect behavior? Also be sure to think about how these changes will affect other organisms in the ecosystem. Answers can include, but are not limited to: their individual and population health, behavior, ranging patterns, and interactions with other species (changing ecosystem dynamics).

Question 2:

Describe how humans have influenced the abundance of harbor porpoises in the past and present and how we may affect them in the future (good and bad). Think about what we know happened, and why research is needed; use that to explain possible outcomes for the future – can these lessons be used for other species and why?

Question 3:

Think about how researchers study harbor porpoises, including what questions they want to answer, what data they collect and how they collect it. Using this information as a guide, choose a different species of interest to you. Describe what questions you would want to answer about your chosen species (and why that is important to know), explain what data you would collect in order to answer these questions, and how you would collect it. Create/describe your study and also explain how this information could be used to help protect and conserve the species (and its environment if applicable).

Lastly, conservation of a species relates to maintaining biodiversity of an ecosystem – but this is easier said than done. Think about your research topic and how this would help to maintain biodiversity in an ecosystem. Think about what constraints might hinder the use/application of the research results – this can be either scientific, economic, political, or social considerations. For example, do we have the technology and/or money to implement the research or the solution it may produce; are there any political or social obstacles (e.g. political opposition, cultural ideas that need to be addressed)? Discuss these constraints and how they may be able to be overcome.