

# クジラの歌が聞こえない

26

011

Warm-up

1

音声を聴いて、写真を説明している英文を a～c から選びましょう。



a.

b.

c.

27

012

Warm-up

2

現在分詞 (V-ing) や過去分詞 (V-ed) が名詞を修飾するとき、単独であれば名詞の直前、他の語句を伴うときは直後に置かれます。音声を聴いて 1～4 の空所内に適当な分詞を書き入れましょう。なお修飾されている名詞句は太字で示されています。

1. a **sound** ( ) ( ) **corn**  
「弾けているコーンに似ている音」
2. **research articles** ( ) changes in noise volume  
「騒音量の変化を記録している研究論文」
3. **large vessels** ( ) to Asia, Europe and Africa  
「アジア、ヨーロッパそしてアフリカに向かって航行している大型船」
4. ( ) **noise** from shipping traffic  
「船舶の往来が原因で増加した騒音」

Warm-up

3

問 A、B に答えましょう。

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問 A

音声（ある海洋生態学者のコメント）を聴いて、監視が必要な海の環境に影響するものとして述べられていないものを 1～4 から選びましょう。

1. 気候変動
2. 海洋生物の乱獲
3. 流入する河川の水質
4. 騒音公害

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問 B

以下の英文を読み、質問に答えましょう。

Many fish and marine animals use sound to communicate with each other, to locate promising locations to breed or feed, and possibly to detect predators. For example, snapping shrimp make a sound resembling popping corn that stuns their prey. Humpback whale songs can resemble a violinist's melodies.

But increased noise from shipping traffic, motorized fishing vessels, underwater oil and gas exploration, offshore construction and other human activity is making it harder for fish to hear each other.

(AP)

Notes

locations to breed or feed 「繁殖したりエサを取ったりする場所」 predator 「捕食者」  
snapping shrimp 「テッポウエビ」 stun one's prey 「獲物を驚かす」 humpback whale 「ザトウクジラ」

Which of the following is NOT true about the passage?

- a. Many fish communicate information about their feeding grounds by using sound.
- b. Humpback whales can make a sound similar to that of a violin.
- c. Noise from shipping traffic has been increasing, causing sound pollution.
- d. The underwater noise helps fish to protect themselves from predators.

## Reading

### 30 Under the sea, humans have changed ocean sounds

Not only are humans changing the surface and temperature of the planet, but also its sounds — and those shifts are detectable even in the open ocean, according to research published Thursday.

Changes in the ocean soundscape affect wide swaths of marine life, from tiny snapping shrimp to huge right whales, the researchers found.

“Sounds travel very far underwater. For fish, sound is probably a better way to sense their environment than light,” said Francis Juanes, an ecologist at the University of Victoria in Canada and a co-author of the paper in the journal Science.

The researchers sifted through thousands of data sets and research articles documenting changes in noise volume and frequency to assemble a comprehensive picture of how the ocean soundscape is changing — and how marine life is impacted.

Using underwater microphones, scientists can record fish sounds — which tend to hover around the same low frequencies as shipping traffic noise.

“For many marine species, their attempts to communicate are being masked by sounds that humans have introduced,” said Carlos Duarte, a marine ecologist at the Red Sea Research Center in Saudi Arabia and co-author of the paper.

The Red Sea is one of the world’s key shipping corridors, full of large vessels traveling to Asia, Europe and Africa. Some fish and invertebrates now avoid the noisiest areas, as the sound effectively fragments their Red Sea habitat, he said.

Meanwhile, the overall number of marine animals has declined by about half since 1970. In some parts of the ocean, “scientists now record fewer animals singing and calling than in the past — those voices are gone,” said Duarte.

(AP 一部抜粋・改変)

## Notes

**detectable** 「検知可能な」

**open ocean** 「外洋」

**soundscape** 「音環境」  
**wide swaths of ...** 「広範囲の～」  
**right whale** 「セミクジラ」

**co-author** 「共著者」

**sift ...** 「～を厳密に調べる」

**assemble a comprehensive picture of ...** 「～を包括的に把握する」

**hover around ...** 「～あたりに留まる」

**attempt to ...** 「～する試み」

**mask ...** 「～を妨害する」

**shipping corridor** 「海運回廊」

**invertebrate** 「無脊椎動物」

**habitat** 「生息地」  
**fragment ...** 「～を断片化する」

## Comprehension

Choose two statements that are true about the passage.

1. A study found that changes in the sound environment affect marine animals.
2. Marine animals detect their environment by using sound.
3. It is difficult to record changes in underwater sound volume and frequency.
4. The sound frequency produced by fish is higher than that by shipping traffic.
5. Many fish are returning to the Red Sea because of decreased shipping traffic.

## Further Activity

科学技術関連の記事中では、一般読者が理解しやすいように、専門家が科学事象を比喻を使って説明することがあります。以下の英文では、魚が騒音を避ける事象について、ある専門家が比喻を使って説明しています。[ ]内の語句を並べ替えて、比喻表現を完成しましょう。

“Imagine [ all the time / your kids / that’s noisy / raise / having to / in a place ]. It’s no wonder many marine animals are showing elevated and detectable levels of stress due to noise,” said Joe Roman, a University of Vermont marine ecologist, who was not involved in the paper.

「いつも騒がしい場所で子どもを育てなければならないことを想像してみてください。多くの海洋動物が騒音により上昇する検出可能なレベルのストレスを示しているのも不思議ではありません」と、その論文（Reading 中で取り上げられている論文のこと）に関与していないバーモント大学の海洋生態学者ジョー・ローマン氏は述べている。