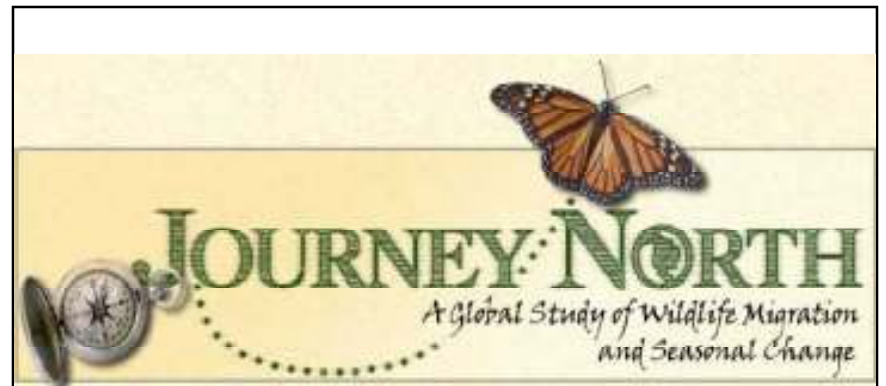




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## **Gray Whales: Navigating the Way**

by Mike Hawe,  
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Navigating the journey north through the longest migration of any mammal on Earth is no easy task for gray whales. How do they find their way?

## Navigation Perils

Being a coastal whale means the gray whale encounters everything humans do: boats, piers, oil platforms, pollution, fishing nests, lobster pots, and more.



Photo © United States Geological Service

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Migrating whales have to navigate through heavy shipping, including large freighters, passenger cruise ships, and weekenders out in their small boats. Some small boaters try to see a gray whale. Other boaters do not even know they are in the whales' migration path. Many boaters do not know about the strict rules that protect the whales. And sometimes a whale may end up where it's not expected, such as this whale in Santa Barbara Harbor for a few weeks!



Photo © Jean Louis

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And, especially on the northbound journey, gray whales must also be on the alert for Orcas (killer whales). Orcas mainly attack calves, or weak or injured gray whales.



Photo © Mike Hawe

## How Do They Do It?

Have you ever wondered how the Gray whale finds its way to and from the arctic seas? No one knows for sure, but the following are some scientists' ideas. . .

- **Low-frequency sounds.** One theory is that the whales are using low-frequency sounds, like a primitive sonar. The whales also may use these sounds to communicate with each other, like a chain: "Hey, follow me. It's this way."
- **Known sounds.** Whales have acute hearing. They maybe able to hear the waves hitting the shore. They may hear the sounds of small creatures living in the kelp beds.



Photo © Michael H. Smith

- **Landmarks.** The whales might even use visual aids. Maybe they recognize certain landmarks. Some believe the behavior of **spy hopping** gives whales a better look around for landmarks along the way.



Photo © Keith Jones

*As this whale spy hops, it might notice important landmarks!*

- **Earth's Magnetic Field.** The latest theory is that the whales respond to the earth's magnetic field via small particles of magnetite (iron oxide) in their brains.

How ever they navigate, it's an epic journey. For some whales, it's their very first. For others, it's just another of many such journeys made during a long, long lifetime. Each year, we thrill at the news of the returning gray whales!



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