

# Ocean "census" discovers undersea wonders



A huge "census" of marine life involves more than 2,000 scientists from 82 countries.

## BASIC

Part of our planet has been explored far less than any other, and it's home to millions of different plant and animal species. **Who can guess what it is?** It's our oceans! They are so vast and so deep that it is impossible to explore more than a small part of them. But more than 2,000 scientists are taking part in a huge "census" of our oceans. A census is an official count of a population. In this case, the researchers are trying to list as many undersea species as possible, and to get

information on as many new species as they

can. Here you see three of the strange and colorful creatures that live in our oceans. At top right is a type of coral, which is made up of thousands of tiny living things joined together. Below it is a sea star, or starfish, and the third photo is of a sea sponge, which survives by having water flow through its body. **What's the most interesting ocean animal you've seen?** NEXT

## GENERAL

### Have you ever gone diving in the ocean?

**If so, what did you see?** Our oceans contain life in all sorts of shapes, sizes, and colors. Our oceans are so vast and deep that it's impossible to explore more than a tiny part of them. However, marine scientists are currently taking a huge "census" of ocean life. **What's a census?** (*An official count or survey of a population.*) More than 2,000 scientists from 82 countries are taking part in the Census of Marine Life, which is expected to be complete in 2010. Scientists hope to catalogue, or create a list of, as many undersea species as possible. On the screen are three interesting undersea creatures. At top right is a type of coral. Coral is actually made up of thousands and thousands of tiny, identical organisms that join together. At

bottom right is a red-knobbed sea star, or starfish, an organism known for its ability to grow new arms if it loses any. The other photo is a type of sea sponge. This strange-looking creature has no nervous, digestive, or circulatory system. Instead, it relies on water flow through its body to get food and oxygen and remove wastes. Humans, of course, use an item just like this organism in our kitchens. **What do you think scientists can learn from studying these unusual life forms?** Besides new species, census scientists report other interesting discoveries, like a shark gathering spot they have nicknamed the "White Shark Café." They discovered that white sharks travel great distances to meet at a spot in the mid-Pacific, and scientists still aren't sure why the sharks do this. **What do you think?** NEXT

## ADVANCED

Some of the most bizarre and beautiful creatures on Earth live in one of our planet's greatest, and least explored, treasures: the oceans. **Have you ever gone diving in the ocean? If so, what kinds of life did you see?** Marine scientists say there is still much to be learned about undersea life, but a huge "census" is under way in an attempt to catalogue and gain a greater understanding of the thousands of species living beneath the waves. More than 2,000 scientists from 82 nations are taking part in the Census of Marine Life, which is to be complete in 2010. At top right is a form of coral, an organism made up of thousands of small polyps. Over thousands of generations, coral sometimes creates reefs, which host a wealth of biodiversity. At bottom right is a red-knobbed sea star, or starfish, an organism known for its ability to

regenerate arms. The other photo is a type of sea sponge, a creature that has no nervous, digestive, or circulatory system; it relies on water flow through its body to get food and oxygen and remove wastes. **How could humanity benefit from understanding more about these unusual forms of life?** Besides new species, census scientists report other interesting discoveries. A vast "city" of brittle stars, a form of starfish, was found off the coast of New Zealand, and scientists also found what they're nicknaming the "White Shark Café." Satellite tagging showed that white sharks travel huge distances each year to meet at a spot in the Pacific, where sharks of both sexes make frequent dives to depths of nearly 1,000 feet. The reason they congregate here is still in question. **What do you think might be a reason?** END

## Undersea wonders (cont'd)

Scientists will use information from the marine census to help protect marine life from manmade threats and climate change.

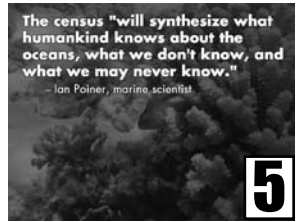
### BASIC

**Can you read the quote on the screen?**

“Synthesize” means to combine parts to make a whole. **Do you understand what the scientist means?** Besides discovering new species, the scientists in this study want to get a better understanding of undersea life. They hope to use this knowledge to better protect marine life from threats like fishing, pollution, and climate change. **Do you understand why this study is so important?** The census is expected to include more than 230,000 species

— still only a tiny amount of the species thought to

exist in the oceans. Researchers, so far, have identified 5,300 species that are probably new. **Does it surprise you that Earth’s oceans are home to so many, many different plants and animals? What else do you think undersea life can teach us? Would you like to learn more about marine life?** END



### GENERAL

**Do you understand the quote on the screen?**

“Synthesize” means to combine elements to make a whole. The goals of the marine census project aren’t just discovering new species; researchers also want to gain a better understanding of how these species live and what kind of environment makes them thrive. Through this information, they hope to find ways to protect undersea life from threats like over-fishing, pollution, and climate change. **Why do you think this is so important?** The census is expected to include more than 230,000 species — still only a fraction of the amount of species thought to exist in the oceans. Researchers have identified 5,300 species that are probably new. About 1,400 new marine species are being catalogued each year. **Does it surprise**

**you that our oceans are home to such a vast number of species? What do you think scientists can learn from discovering new species?** One very interesting area noted by the researchers is the mid-Atlantic ridge, halfway between the United States and Europe. Researchers believe the area is home to hundreds of species rare or unknown elsewhere. It also includes the world’s deepest known active hot vent, a place where a crack in the ocean floor spews boiling water from under the Earth’s crust. This vent is more than 13,300 feet deep, and densely populated with anemones, sea worms, and shrimp. **Is it amazing that there is life that deep down? What do you think of the quote on the screen? Would you like to be an undersea explorer?** END

### ADVANCED

It’s not just intellectual curiosity that’s

prompting the first Census of Marine Life; researchers are working to protect marine life from threats like over-fishing, pollution, and climate change. The census is expected to include more than 230,000 species — still only a fraction of the amount of species thought to exist in the oceans. Researchers have identified 5,300 species that are likely new, and confirmed 110 as new. About 1,400 new marine species are being catalogued each year; researchers say it could take more than five centuries to catalogue all the species. **Does it surprise you that our oceans are home to such a vast number of species? Why do you think scientists are placing so much importance on this census?** The census researchers say that even after their exhaustive work, as much

of 95 percent of the ocean will remain unexplored. **Does that surprise you?** One particularly mysterious area is the mid-Atlantic ridge halfway between the United States and Europe. Researchers believe the area is home to hundreds of species rare or unknown elsewhere. The ridge includes the world’s deepest known active hot vent, a crack in Earth’s surface that spews hot water and creates a unique ecosystem. It’s more than 13,300 feet deep and populated by anemones, sea worms, and shrimp. **What do you think of the quote on the screen? Why do you think there is a sense of urgency about exploring the oceans? Do you think there is a chance we might lose species from manmade threats before we ever have a chance to learn about them? Why might this be harmful?** END