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Scientific American launches Citizen Science Whale-Song Project, Whale FM

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Curious 'citizen scientists' can now help marine researchers better understand how killer whales and pilot whales communicate. Today *Scientific American*, in partnership with The Zooniverse, launches the whale-song project, Whale FM, at **http://whale.fm**.

The Whale FM site displays calls from both orcas (killer whales) and the lesser known pilot whales. Citizen scientists are presented with a whale call and shown where it was recorded on a map of the world's oceans and seas. After listening to the whale call, which is represented on screen as a spectrogram showing how the pitch of the sound changes with time, citizen scientists are asked to listen to a number of potential matching calls from the project's database. If a match is found, the citizen scientist clicks on that sound's spectrogram and the results are stored.

"One doesn't need a science degree to be a citizen scientist," says Mariette DiChristina, Editor in Chief of *Scientific American*. "All you need is a curiosity about the world around you and an interest in observing, measuring and reporting what you hear and see. We are pleased to work with The Zooniverse on this scientifically interesting and enjoyable project."

The dataset generated by this project will enable scientists to address a number of questions regarding whale communication. For example, biologists studying killer whales report that each group of whales has its own distinctive dialect of calls, with related groups having dialects that are more similar. The Whale FM calls on citizen scientists to test these results by making their own judgments of similarity between calls.

"Only a few researchers have categorized whale calls," says Peter Tyack of the University of St Andrews. "By asking hundreds of people to make similar judgments, we will learn how reliable the categories are, and they get the fun of hearing these amazing sounds."

Much less is known about the calls of pilot whales than of killer whales. Researchers, from the Woods Hole Oceanographic Institution in Massachusetts and the Sea Mammal Research Unit at the University of St Andrews in Scotland want to know the size of the pilot whales' call repertoire and whether call repertoires vary between groups as in killer whales. The Whale FM welcomes citizen scientists to help researchers to discover the call repertoires of pilot whales and to study how vocal traditions vary between different groups of whales.

"Scientists are faced with huge datasets, which become increasingly difficult and time-consuming to analyze by a small group of experts", adds Sander von Benda-Beckmann of the Netherlands Organisation for Applied Scientific Research (TNO). "This task is still too challenging for computers to handle. By involving a large number of volunteers we will be able to analyze much more data than we would otherwise be able to."

Citizen scientists can sign up to participate in the Whale FM using their existing *Scientific American* login and password. The project is free and participants can decide how much time they devote to the project.

Scientific American has actively promoted citizen science projects, since May 2011 at **www.scientificamerican.com/citizen-science**. The Whale FM is the first *Scientific American* has co-sponsored. Other Citizen Scientist projects hosted on *Scientific American* include The Dragonfly Swarm Project, Gulf Oil Spill Tracker, and The Great Sunflower Project.

Citizen Science is one of a number of education initiatives from *Scientific American*, as part of its Change the Equation commitment. In September 2010, Nature Publishing Group (NPG), *Scientific American's* parent organization, joined Change the Equation, a CEO-led public-private partnership to support science, technology, engineering and math (STEM) literacy in the United States. Mariette DiChristina is also an adviser for the Citizen Science Alliance, which will produce around 10 new projects.

For more information about the program, please visit the website at:

http://www.scientificamerican.com/citizen-science/

http://www.scientificamerican.com/education/

http://www.scientificamerican.com/pressroom/pr/release.cfm?site=sciam&date=2010-09-16

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About The Zooniverse

The Zooniverse began with a single project, Galaxy Zoo, which was launched in July 2007. The Zooniverse is now home to the internet's largest, most popular and most successful citizen science projects. The Zooniverse and the suite of projects it contains is produced, maintained and developed by the Citizen Science Alliance. The member institutions of the CSA work with many academic and other partners around the world to produce projects that use the efforts and ability of volunteers to help scientists and researchers deal with the flood of data that confronts them.

About the Sea Mammal Research Unit at the University of St Andrews

The Sea Mammal Research Unit (SMRU) is based at the School of Biology, University of St Andrews, Scotland, and is Europe's leading research centre in the field of marine mammal biology. SMRU carries out interdisciplinary research into the biology of marine mammals, trains marine mammal scientists through undergraduate and postgraduate teaching and provides impartial and independent advice to governments, non-governmental organizations and industry on conservation issues. SMRU's current strategic science priorities include: evaluating the status of marine mammal populations; investigating the importance of marine mammals as components of marine ecosystems; determining the dynamics of marine mammal populations; studying marine mammal social structure and communication; providing the technological basis for observing free-ranging marine mammals and their environment. For further information, please visit **www.smru.st-andrews.ac.uk/** and **www.st-andrews.ac.uk**.

About the Marine Mammal Center at the Woods Hole Oceanographic Institution

The Woods Hole Oceanographic Institution is a private, independent organization in Falmouth, Mass., dedicated to marine research, engineering, and higher education. Established in 1930 on a recommendation from the National Academy of Sciences, its primary mission is to understand the ocean and its interaction with the Earth as a whole, and to communicate a basic understanding of the ocean's role in the changing global environment. The WHOI Marine Mammal Center focuses on issues affecting conservation of marine mammals and various other marine animals such as turtles. Interdisciplinary teams are brought together to address these issues from a variety of scientific and engineering perspectives in order to gain a more comprehensive scientific understanding. Through the Center's collaborations with external parties and academic institutions, and its facilities such as the necropsy facility, it creates a unique environment to pursue new research opportunities. For further information, please visit **www.whoi.edu**.

About the Netherlands Organisation for Applied Scientific Research (TNO)

TNO is an independent innovation organisation. TNO connects people and knowledge to create innovations that sustainably boost the competitive strength of industry and the welfare of society. TNO's more than 4000 professionals work on practicable knowledge and solutions for the problems of global scarcity. TNO focuses its efforts on seven themes: Healthy Living, Industrial Innovation, Energy/Geological Survey of the Netherlands, Mobility, Built Environment, Information Society, and Defence, Safety and Security. The TNO Sonar and Acoustics department has a long history in developing technologies for detecting marine mammals and other sources (ships, submarines etc.) using underwater sound. TNO is involved in studying the impact of human generated underwater noise on marine mammals and provides advice to governments and industry on how to mitigate the impact of underwater noise on marine life. For further information, please visit **www.tno.nl/themes**.

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