



Atlanta Underwater Explorers

AUE Bubbles

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Decoding the Song Of The Humpback Whale

By Jessica Vvvan-Robinson

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"Humpback whales (like humans) follow song trends that change by the season."



Humans have been fascinated with the humpback's eerie musical stylings since at least 1979, when *National Geographic* distributed 10 million copies of marine scientist Roger Payne's album "Songs of the Humpback Whale" with the magazine in an effort to draw attention to the plight of a species that was, at the time, threatened with extinction as a result of global whaling. Since then, the humpback has become one of the most beloved marine animals, and countless research studies have been dedicated to better understanding the mysteries of its haunting song. Many of those mysteries remain unsolved, however, and even now scientists are making new discoveries about how, and why, humpbacks sing.

In 2011, scientists from the University of Queensland published a study that suggested humpback whales (like humans) follow song trends that change by the season. The research team, led by marine biologist Ellen Garland, used hydrophones to record the songs of six distinct humpback populations in the waters of eastern Australia, New Caledonia, Tonga, American Samoa, the Cook Islands and French Polynesia. After analyzing 11 years' worth of recordings from each region, the scientists were able to distinguish 11 unique patterns, or songs. The new songs always originated in the eastern Australian humpback population, and

Decoding The Song Of The Humpback Whale – Cont.

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Studies like the one conducted by Garland and her team shed some light on *how* humpbacks sing (and in this case, how specific songs travel from coast to coast across an entire ocean). For many years, scientists have argued as to *why* the whales produce such complex songs. The most popular theory holds that because only the males sing, the song must be connected to mating rituals, i.e., that the males use these songs to woo a partner during mating season. However, so far there has been little scientific evidence to prove this theory. Indeed, humpbacks sing at all times of the year, even when they're not looking for a mate, suggesting that there may be other factors inspiring the practice.

In December of 2014, a study led by [Susan Parks of Syracuse University](#) proposed that the whales use certain song patterns to help them hunt at night. The study fitted acoustic recording tags to a group of humpbacks living in the waters off Massachusetts. Analysis of the recordings showed that the whales use a specific song that sounds a lot like a ticking clock to flush eel-like fish known as sand lances from their burrows in the seafloor. Parks suggested that the whales might also use their song to inform other humpbacks about fertile hunting grounds, particularly when food is scarce.

There are many other theories as to why humpbacks sing. Some scientists think that the whales use their songs to communicate information about their surroundings, particularly when they are migrating through unfamiliar territory. Others believe that the males sing to trigger estrus in female humpbacks; or that they use their songs to bond with other solitary males. We still have much to learn in terms of fully understanding the secrets of the humpbacks' song, which is perhaps why it remains one of Nature's most compelling and enchanting sounds. Most importantly, our fascination with the song of the humpback whale has helped to earn this species the international protection it deserves so that an animal that was threatened with extinction in 1979 now boasts thriving populations throughout most of its range.

Published by Scuba Life June 30, 2015 - See link below for more information.

<http://scubadiverlife.com/2015/06/30/decoding-the-song-of-the-humpback-whale/>

Five Tips for Compass Navigation Underwater

By Travis Marshall

- 1) **Line it up.** Point the long line on your compass – the lubber line – in the direction you want to swim, and make sure your body is pointed in the same direction.
- 2) **Take a heading.** Rotate the bezel – the spinning wheel on top of the compass – until the two hatch marks sit over the tip of the north arrow. As you swim, watch to make sure the north arrow stays between those marks.
- 3) **Proper positioning.** Hold the compass flat and in line with your body at all times. If you get off-course, turn your whole body, not just the compass, until your heading is back on track.
- 4) **Avoid tunnel vision.** Look up and around periodically to keep an eye on your surroundings. If there is a current or heavy surge, you can be pushed off-course, even if your heading stays true.
- 5) **Happy returns.** To return to your starting point, turn your body until the north arrow points at the single hatch mark on the opposite side of the bezel and follow steps one through four on the reciprocal heading home.

*Published in scuba Diving Magazine -
See web link below:*

<http://www.scubadiving.com/authors/travis-marshall>



COMPASS NAVIGATION

Chris A. Crumley/Alamy
Diver demonstrating underwater compass navigation

5 Tips for Saving Air

Diving Tips: Saving Air

Do you breathe your tank down faster than your buddy? Here are 5 diving tips to help conserve your oxygen and extend your bottom time.

1. Fix the small leaks

Even a tiny stream of bubbles from an O-ring or an inflator swivel adds up over 40 minutes, and may be a sign of more serious trouble ahead anyway. A mask that doesn't seal is another kind of leak in that you have to constantly blow air into it to clear out the water. It's also a source of stress, which needlessly elevates your breathing rate and thereby reduces your breathing efficiency. Does your octo free-flow easily? That can dump a lot of air quickly. Detune it or mount it carefully so the mouthpiece points downward.

2. Dive More

Inexperienced divers are famous for burning through their air supply at a furious rate, so one of the best diving tips for saving air is to simply dive more often. You may not be a new diver, but unless you dive almost every week it's still an unnatural activity. By diving more, your body will get used to the idea, and you'll breathe less.

3. Swim Slowly

The energy cost of speed is even more than you might think: Swim half as fast as you do now, and you'll use less air.

4. Stay Shallow

Because your regulator has to deliver air at the same pressure as the water, a lungful at 33 feet (two atmospheres) takes twice as much out of your tank as does the same breath at the surface. At 99 feet (four atmospheres) it takes twice as much as at 33 feet. There's absolutely nothing you can do about that except to avoid being deeper than you have to be. If you're making a transit over an uninteresting sand flat to get to the edge of the drop-off, do it at 15 feet instead of at 40 feet, and you'll save air.

5. Minimize the Lead

If you're over weighted, you have to put more air into your BC to float it and be neutral. The inflated BC is larger and requires more energy and oxygen to push it through the water. An extra eight pounds of lead means your BC is one gallon bigger when inflated enough to make you neutral.



Diver Doing Deco Stop

Published in Scuba Diving Magazine: See web link below:

<http://www.scubadiving.com/training/basic-skills/5-diving-tips-saving-air>

Upcoming AUE Activities

- *AUE General Meeting - Saturday 1:00 p.m. - 4:00 p.m. July 18, 2015, Atlanta Public Safety building on Pryor Street @ Garnett Street*
- *DWP Coral Restoration Session 2 - July 27 thru 29, 2015 - Key Largo, FL. Details - Contact Ken Stewart - (615) 730-4906*
- *Panama City Beach Dive & Navy Hard Hat Tour September 10 thru 13, 2015 - Details: Contact Quinal Johnson via email at quinalj@gmail.com*
- *AUE General Meeting - Saturday 1:00 p.m. - 4:00 p.m. August 15, 2015, Atlanta Public Safety building on Pryor Street @ Garnett Street*

Recent AUE Activities

- *NABS Presidents Meeting April 17 -19, 2015 - Hosted by Charm City SCUBA*
- *DWP Coral Restoration Session I - May 14 thru 16, 2015, Key Largo, FL*
- *AUE Annual Cookout - June 13, 2015 Hosted by Bruce & Catherine Mitchell*
- *DIVERSe Orlando - Dive at Blue Heron Bridge (AUE, Atlantic Ranger, & SSQ - June 20, 2015*
- *DWP, SSQ, & AUE Empowerment Dive July 12 -13, 2015, Pelham, AL*

Member Announcements

Latest AUE & Other Dive News Updates:



AUE member Marie Richardson completed the Mt. Kilimanjaro half marathon June 28, 2015 in Moshi, Tanzania and presented the local runners with shirts from Fisk and 13 other HBCUs. This race was the international summit for the National Black Marathon Association (NBMA). This is a proud moment for Marie and Fisk University. Congratulations Marie

Member Announcements – Cont.

DWP Program Honored:

Diving With A Purpose (DWP) is a program that creates trained volunteer marine advocates to assist in the stewardship of heritage assets in National Parks and National Marine Sanctuaries, and introduces young people to maritime-linked careers, was honored by the Advisory Council on Historic Preservation (ACHP) today with the Chairman's Award for Achievement in Historic Preservation. (See original press release at web link below)

https://attachment.fsbx.com/file_download.php?id=1001792589852109&eid=ASuXsOuxLaw8b3T9KkDEe-luLcG6RJ8WbOepCK83l3Tm7rcgqzhrnSN6DvT2GzRsj_l&inline=1&ext=1436754213&hash=ASvfmZ3koyYg5vU_



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Editor's Corner

Fellow AUE Members:

Welcome to the July 15, 2015 edition of *AUE Bubbles* newsletter. We hope you continue to find future editions informative. Your suggestions, comments and story ideas are welcomed.

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Completed story submissions must be received one week prior to the publishing date (Bi-monthly on the 15th of the month).

The next edition will be published September 15, 2015.

Please submit your story ideas and comments to my attention via email.

Dive safely,

Alex Adams,

Publisher & Editor

scuba1aja@gmail.com

www.diveaue.org