

# Diving That Counts

Whether you're a seasoned diver or the new kid on the boat, REEF surveying could change the way you dive

BY KERI KENNING, REEF COMMUNICATIONS AND AFFILIATE PROGRAM MANAGER

A dozen divers spread across the site, slates in hand, pointing at fish and flashing animal hand signals: horse-eye jacks, yellowhead jawfish, spotted eagle rays, colorful chromis. Scanning the reef for new species and recording them on waterproof checklists, the surveyors leave nothing unexplored. As each diver climbs back on the boat, the group begins the post-dive show and tell.

"Did you see those juvenile jackknives? They were the size of



A diver counts a red Irish lord in the Olympic Coast National Marine Sanctuary, Washington.

mosquitos!" one exclaims. "Seventy-six ... 77 ... 78! I found 78 different species this dive!"

This scene is repeated on countless dive boats and beaches throughout the Caribbean, North and Central America, Hawaii, and the South Pacific. Increasing numbers of citizen scientists are participating in one of the longest-standing marine-conservation programs for divers and snorkelers: Reef Environmental Education Foundation's

Volunteer Survey Project. They learn to identify fish and invertebrates, record those species while diving, and add their surveys to REEF's database.

Twenty years ago, REEF began the Volunteer Survey Project because basic information on marine fish populations was lacking. Since 1993, REEF volunteers have completed more than 170,000 fish surveys at more than 10,000 sites — creating the world's largest collection of marine-life sightings. This extensive

volume of data enables researchers and marine-resource managers to detect changes in ecosystems and implement conservation measures.

REEF data have been used to assess biodiversity, monitor changes in fish populations and evaluate the effectiveness of marine-protected areas and artificial reefs. Surveyors document new species and track the spread of exotic (non-native) species. REEF provides free access to its database, which helps scientists, policymakers, and the public better understand and preserve oceans.

Specific successes include: evaluating populations of rockfish in the Pacific Northwest and goliath grouper in

## MAKE IT HAPPEN

REEF is a grass-roots conservation organization that relies on volunteer support and the generosity of its donors. Here are some ways you can help; visit [reef.org](http://reef.org) for more.

**> Join REEF**  
Become a free member, receive monthly updates, access

Fishinars. [reef.org/user/register](http://reef.org/user/register)

**> Donate** Contribute to REEF's research and education programs that benefit ocean conservation. [reef.org/contribute](http://reef.org/contribute)

**> Learn** Pick up a fish-ID book from [reef.org](http://reef.org), attend an

online Fishinar, or take an ID class at your local dive shop.

**> Volunteer Underwater**  
Don your mask and fins, grab a waterproof slate and a REEF species checklist, and start surveying species — then submit the data online.

**> Dive with Us**  
Make your next dive vacation a REEF Field Survey Trip and learn about marine life from the pros. [reef.org/trips](http://reef.org/trips)

**> Get Social**  
"Like" REEF and REEF Invasive Lionfish Program on Facebook and follow on Twitter.



the world's best underwater naturalists and photographers, including Ned and Anna DeLoach, founders and pioneers of REEF's Volunteer Survey Project and *Scuba Diving* magazine's monthly Critter Hunt columnists.

In this issue, you can read about Ned and Anna's passion for identifying marine life in the Critter Hunt featuring microscopic bumblebee shrimp on page 28. The DeLoaches are leading a REEF Field Survey Trip to Dominica in February 2014. Join them and learn to really "see" underwater. You might even find a bumblebee shrimp or two.

Volunteer data collection yields valuable information on fish populations, including Nassau grouper (below).



## REEF THROUGH THE YEARS

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|--|--|---|---|
| <p><b>1993</b><br/>REEF begins surveying and hosts first Field Survey Trip, Key Largo</p>      | <p><b>1997</b><br/>REEF joins the World Wide Web — REEF.org launched</p>       | <p><b>2002</b><br/>REEF begins Grouper Moon Project to protect Nassau grouper</p>           | <p><b>2013</b><br/>REEF database reaches 170,000 surveys</p>        |
| <p><b>1990</b><br/>After releasing Reef Fish Identification, Humann and DeLoach found REEF</p> | <p><b>1996</b><br/>First of 45 scientific papers published using REEF data</p> | <p><b>2009</b><br/>NOAA uses REEF data to protect rockfish under Endangered Species Act</p> | <p><b>2011</b><br/>REEF begins live, online fish-ID "Fishinars"</p> |
| <p><b>1999</b><br/>REEF develops PADI Project AWARE Fish Identification Specialty</p>          | <p><b>2006</b><br/>REEF database reaches 100,000 surveys</p>                   | <p><b>2006</b><br/>REEF begins Invasive Lionfish Program</p>                                |   |

TOP: COURTESY PETE NAYLOR; (TIMELINE) CLOCKWISE FROM BOTTOM LEFT: COURTESY REEF (2); COURTESY MIKE PHELAN; COURTESY CARLOS AND ALLISON ESTAPE (2); COURTESY REEF; SHUTTERSTOCK; COURTESY JANNA NICHOLS; COURTESY CARLOS AND ALLISON ESTAPE; OPPOSITE, FROM TOP: ANDY MORRISON; ALEX MUSTARD

Florida to ensure sustainable fisheries for these keystone species; monitoring and protecting one of the Caribbean's largest and last-known spawning aggregations of Nassau grouper in Little Cayman; and documenting occurrences of non-native fish, including invasive lionfish.

Many divers take up fish-watching because they are curious about nature and want to actively conserve oceans. Others survey because it makes diving more interesting. Learning the names, behaviors and characteristics of underwater creatures enhances the diving experience. When surveying, every dive feels like a treasure hunt — making even mediocre dives unforgettable.

If you know just one fish, you can start surveying. Grab a slate and a waterproof species checklist at [reef.org/store](http://reef.org/store). Go diving, and remember to keep an eye out for camouflaged critters and speedy swimmers. Record only what you can positively identify; leave out the rest, and submit the data online. Learn new species by reading a marine life guidebook or attending a "Fishinar" — REEF's free online seminars.

The key to becoming a successful "afishionado" is to practice. REEF leads Field Survey Trips throughout the world each year to increase divers' identification competence and confidence. These trips are led by some of