NEWS RELEASE

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Saving Coral Reefs Depends More on Protecting Fish Than Safeguarding Locations

- **Study finds fish biomass more important than habitat or other factors used to define biodiversity 'hotspots'**
- **Reefs containing more than 600 kilograms per hectare of fish biomass should be conservation priorities**

NEW YORK (September 2, 2015)— A new study by WCS (Wildlife Conservation Society) has found that coral reef diversity 'hotspots' in the southwestern Indian Ocean rely more on the biomass of fish than where they are located, a conclusion that has major implications for management decisions to protect coral reef ecosystems.

Using data gathered over a 12-year period from nearly 270 coral reefs across the southwestern Indian Ocean, the WCS study found that the highest conservation priorities in the region should be reef systems where fish biomass exceeds 600 kilograms per hectare. This finding conflicts with a common conservation and management policy that emphasizes the geographical location and physical factors that are often associated with reef diversity.

The study—authored by Dr. Tim McClanahan of WCS (Wildlife Conservation Society)—appears in the latest edition of the *Journal of Biogeography.*

Click here for a link to the study:
http://onlinelibrary.wiley.com/doi/10.1111/jbi.12604/abstract

"While geography has often been the main factor that conservation policy has used to establish protected areas, this study shows that protecting fish biomass should be the priority and this can be done with improved fisheries management," said McClanahan, a Senior Conservationist for WCS. "A hotspot is not a permanent feature and can be lost if the fish and the habitat are not protected."

Experts agree that fishing is a primary cause in the degradation of coral reefs, and needs to be better managed but what is more controversial is the various roles of protected areas or fisheries restrictions. Protecting regions containing threatened biodiversity—considered to largely be an attribute of geography— has created a policy focus on the geographic hotspots. McClanahan found that the hotspot in the Indian Ocean is a real feature but is maintained more by fish biomass and habitat than by the geographic location. This means that fish biomass and habitat are the most influential factors and should be used to guide management decisions rather than location.

McClanahan's study of 266 sites in seven countries of the southwestern Indian Ocean measured numbers of fish species while simultaneously collecting information on the abundance of corals and algae, depth, geographical location, and the types of fisheries management. This allowed him to compare the importance of each of these factors.

The results support previous studies identifying the Mozambique Channel as a center of species richness in the southwestern Indian Ocean. However, sites in this region with low fish biomass also lacked full diversity, and being in this hotspot center alone did not ensure high diversity. Stronger correlations were found between biomass and local factors such as restrictions on fishing along with coral cover and water depth. The latitude and longitude were significant but found to contribute the least to the variation in numbers of species – a finding that challenges common conservation wisdom.

The study also reveals that protected areas that lacked regular and strong enforcement of fishing bans - classified as 'low compliance' fisheries closures - had nearly as low numbers of fish species as reefs that were regularly fished. The low compliance category included 50 of the 104 reefs included in the study. McClanahan added: "Having fishing restrictions is better than closing reefs to fishing if the closure rules are not followed, which was common and found for nearly half of the studied closures."

"The Southwest Indian Ocean is a globally important marine biodiversity hotspot. Unfortunately, this study shows that many protected areas are not doing a good job at protecting fish diversity, a shortcoming that threatens some of the world's most important coral reefs," said Dr. Caleb McClennen, Executive Director of the Marine Program. "While these ecosystems are complex, it is clear we need to do at a minimum two things very well to save the world's coral reefs: strictly enforce established marine protected areas, and; outside these areas, increase the sustainability of fishing practices to increase biomass."

The projects that lead to the compilation of the large data set were supported by the John D. and Catherine T. MacArthur Foundation, The Tiffany & Co. Foundation, and the Western Indian Ocean Marine Science Association (WIOMSA).

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MISSION: WCS saves wildlife and wild places worldwide through science, conservation action, education, and inspiring people to value nature. **VISION:** WCS envisions a world where wildlife thrives in healthy lands and seas, valued by societies that embrace and benefit from the diversity and integrity of life on earth. **To achieve our mission,** WCS, based at the Bronx Zoo, harnesses the power of its Global Conservation Program in more than 60 nations and in all the world's oceans and its five wildlife parks in New York City, visited by 4 million people annually. WCS combines its expertise in the field, zoos, and aquarium to achieve its conservation mission.
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Coney Island. The New York Aquarium is located on property owned by the City of New York, and its operation is made possible in part by public funds provided through the New York City Department of Cultural Affairs. For directions, information on public events and programs, and other aquarium information, call 718-265-FISH or visit our web site at http://www.nyaquarium.com. Now is the perfect time to visit and show support for the WCS New York Aquarium, a beloved part of Brooklyn and all of the City of New York. Due to Hurricane Sandy we are partially opened. Check our website for more information. www.nyaquarium.com.