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Pacific Islands Region Species of Concern FY 2010 Year-End Report

National SOC Internal Grants Program

In March 2010, the National Marine Fisheries Service (NMFS) Pacific Islands Regional Office (PIRO) Species of Concern (SOC) regional program coordinator, Krista Graham, was a panel reviewer for the FY 2010 internal SOC grant proposals. Twenty-seven proposals were submitted this year requesting \$769,659 from the available pot of approximately \$300,000. Eleven proposals were selected to receive funding, including a proposal submitted by the PIRO regional program coordinator for \$34,060, titled “Genetic isolation and plasticity in *Montipora dilatata* and Hawaiian congeners: where are the species boundaries?” The goals of this research, conducted by Drs. Rob Toonen and Zac Forsman of the University of Hawaii (UH)/Hawaii Institute of Marine Biology (HIMB), are to: (1) determine the degree of genetic similarity of *Montipora* in the Hawaiian Archipelago with congeners in surrounding waters; and (2) examine phenotypic plasticity of skeletal morphology in *Montipora* at the HIMB by reciprocal transplant studies. Funds for this research were awarded in June and a final report is anticipated by May 31, 2011. This research is particularly germane because on October 20, 2009, NMFS received a petition by the Center for Biological Diversity to list 83 species of coral under the United States Endangered Species Act (ESA). The SOC *M. dilatata* is one of the corals currently undergoing a status review, along with seven other *Montipora* species, to determine if listing under the ESA is warranted.

The FY 2010 SOC internal grant program also chose to fund research on two more SOC species that are found in the Pacific Islands region: the humphead wrasse and the bumphead parrotfish. Drs. Roldan Muñoz (NMFS Southeast Fisheries Science Center) and Brian Zgliczynski (NMFS Pacific Islands Fisheries Science Center) received \$35,000 to research “Spawning site characteristics and reproduction of keystone labroid fishes: baseline estimates of IUCN Vulnerable bumphead parrotfish (*Bolbometopon muricatum*) and IUCN Endangered Napoleon wrasse (*Cheilinus undulatus*) from pristine habitats of Wake Atoll, a U.S. Pacific Remote Island.” The goals of this research are to characterize and determine the locations of spawning sites and aggregations, and determine their pattern of utilization (e.g., number of days active, size of spawning groups) for *B. muricatum* and *C. undulatus* at Wake Atoll. This research is also particularly germane because on January 4, 2010, NMFS received a petition by the WildEarth Guardians to list *B. muricatum* under the ESA. The bumphead parrotfish is currently undergoing a status review to determine if listing under the ESA is warranted. A final report is anticipated by winter 2011.

National SOC External Grants Program

As for our SOC external grant program, we had a record number of applicants and funding requests this year. Ten proposals, each ranging from two to five years, requested a total of \$4,071,201 with \$1,064,890 requested for the first year. However, due to the FY 2010 funds

funding subsequent years from previous proposals, along with unexpected budget shortfalls, no proposals were funded this year.

Regionally-funded SOC Grants

In addition to funding research, monitoring, and outreach and education projects via the national SOC internal and external grant program, NMFS PIRO was able to award SOC funds for a project titled “Assessment and habitat restoration for two NOAA Species of Concern (*Lingula reevii* and *Montipora dilatata*) in Kaneohe Bay, Oahu, Hawaii.” The goals of this contract, totaling \$23,422 and awarded to Dr. Cindy Hunter of UH, are to: (1) create updated GIS-based distribution maps for *M. dilatata* and *L. reevii* in Kaneohe Bay; (2) continue field surveys to evaluate and provide an accuracy-assessment of the spatially predictive models of *M. dilatata* and *L. reevii* potential habitat in Kaneohe Bay created in 2009; (3) quantify the current occurrence of alien/invasive algae in SOC habitats, remove alien/invasive algae in proximity to observed occurrences of *M. dilatata*, and monitor regrowth of algae; (4) transplant and monitor sea urchins as biocontrol agents against alien algae overgrowth of SOC; and (5) expand surveys to areas directly outside of Kaneohe Bay that show potential for SOC environmental requirements, but that have not been surveyed previously. A final report is anticipated by Feb 28, 2011.

NMFS PIRO was also able to award SOC funds to the Waikiki Aquarium (WAQ) for a project titled “Waikiki Aquarium Species of Concern Research and Outreach Program and Captive Propagation of *Lingula reevii*.” The objectives of this research, totaling \$34,234, are: (1) through educational activities this project will address the lack of public awareness about the SOC program in general, and these two species in particular. Activities will include special public tours that highlight the *M. dilatata* and *L. reevii* propagation tanks and explain about the species and the efforts of the WAQ and NMFS to conserve them (a graphics panel complementary in content and dedicated towards promulgating these messages to approximately 320,000 annual visitors will be funded elsewhere); (2) attain for *L. reevii* a level of success in captive maintenance and propagation/reproduction similar to that achieved for *M. dilatata* (i.e., to develop husbandry techniques capable of producing sufficient numbers of larval or juvenile *L. reevii* for possible enhancement of the wild population); and (3) through continued efforts in captive husbandry and research utilizing an experimental investigatory approach this project will address the shortcomings in knowledge about the feeding, reproductive and larval biology of *L. reevii*, and factors affecting its density and distribution. A final report is anticipated by summer 2011.

Progress and Final Reports

As for progress and final reports, NMFS PIRO received the following reports:

- Final report from Drs. Rob Toonen and Zac Forsman of the HIMB on a 2009 project titled “Is *Montipora dilatata* an endangered coral species or an ecotype? Genes and skeletal microstructure lump seven Hawaiian species into four groups.” This final report can be downloaded from our website at:
<http://www.fpir.noaa.gov/Library/PRD/SOC/SOC%20Final%20Report%202009.pdf>

- Final report from Dr. Cindy Hunter from the UH. “Distribution and abundance of *Montipora dilatata* in Kaneohe Bay, Oahu, Hawaii, 2009.” This final report can be downloaded from our website at: <http://www.fpir.noaa.gov/Library/PRD/SOC/Montipora%20Final%202009%20-%203-16-10.pdf>
- Final report from Dr. Cindy Hunter of the UH. “Distribution and abundance of *Lingula reevii* in Kaneohe Bay, Oahu, Hawaii, 2009.” This final report can be downloaded from our website at: <http://www.fpir.noaa.gov/Library/PRD/SOC/Lingula%20Final%202009%20-%203-5-10.pdf>
- Final report from the WAQ on their 2007 project titled “Create an Aquarium display for two Species of Concern: a Hawaiian coral and a brachiopod, and to perform genetic studies on the former.” This final report can be downloaded from our website at: <http://www.fpir.noaa.gov/Library/PRD/SOC/WAaquarium/WAaquarium%20SOC%20Final%20Report%20-%20Jan%202010.pdf>
- Final report from John Starmer of the Commonwealth of the Northern Mariana Islands (CNMI) Coastal Resources Management Office on a 2008 project titled “Assessment of status and habitat specificity of *Cheilinus undulatus* and *Bolbometopon muricatum* in the Southern Islands of the CNMI.” This final report will be posted to our website shortly.
- Progress report from John Starmer of the CNMI Coastal Resources Management Office on a 2009 project titled “Assessment of status and habitat specificity of *Cheilinus undulatus* and *Bolbometopon muricatum* in the Southern Islands of the CNMI.” This final report can be downloaded from our website at: http://www.fpir.noaa.gov/Library/PRD/SOC/PSCCOrderNo.AB133F09SE4484_ProgRept_Mar_10_Edit%20-%20FINAL%20PROGRESS%20REPORT.pdf

Photos of Species of Concern



Figure 1. Dr. James B. Wood, Waikiki Aquarium Associate Director, observing *Lingula*.



Figure 2: *Lingula* in Dr. James B. Wood's hand.



Figure 3: Holding tanks with four *Lingula*.



Figure 4: Close up of *Lingula*.



Figure 5: Norton Chan, Aquarist at Waikiki Aquarium, measuring the width of a *Lingula*.



Figure 6: Norton Chan, Aquarist at Waikiki Aquarium, measuring the length of a *Lingula*.

All photographs taken by Kelsey Ige, Waikiki Aquarium.

Please visit our NMFS Species of Concern websites for more information:
http://www.fpir.noaa.gov/PRD/prd_species_of_concern.html and
<http://www.nmfs.noaa.gov/pr/species/concern/>