

## 2013 MINA/MANAGAHA MPA RARE FELLOW ACCOMPLISHMENTS

The MINA/Managaha MPA Rare Fellow is working to reduce the human-induced threats on the reefs and build greater support for CNMI's marine protected area system. The Managaha Pride Campaign has now been successfully launched!

Deliverables:

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- 1. Support has been provided for the salary of a project lead—or campaign manager from MINA's staff to lead the campaign. This campaign manager will go through Rare's training program on communications for conservation and social marketing.**

Kodep Ogumoro-Uludong was selected as the MINA/RARE Fellow and has completed University Phase 1 and II trainings.

### Second University Phase

Beginning in mid-May for over six weeks, campaign managers gathered on Saipan for Rare's 2<sup>nd</sup> University Phase. KAP survey data was cleaned and analyzed, and the cohort launched into planning for the implementation phase of Pride campaigns. Monitoring partner PMRI presented on monitoring surveys conducted at twelve sites, including campaign sites and with reference sites. Results from surveys were entered into Rare's Data Management Tool template and baseline data was established. Instruction was also given on the outreach and communications aspect of the campaign by UTEP Communication Dept. Professor Richard Pineda.

### Pre-Launch Workshop

During the second week of August, the Rare Micronesia cohort gathered on Guam to review deliverables and go over materials to be used during each campaign manager's launch as well as 1<sup>st</sup> wave of activities. Cohort-themed plans, including billboard templates, were also examined for relevance and effectiveness in communicating the Micronesia cohort message of marine and terrestrial resilience.

- 2. Conduct a thorough assessment of the threats to the near shore environment off Garapan—particularly to the Managaha MPA through a series of user and community surveys as well as an analysis of available scientific data.**

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### Research & Planning

Qualitative research was conducted with members of MMCA Pride Campaign’s target audience: Managaha users. Nine in-depth interviews were conducted with local fishermen, including two key informants – Richard Seman and Benigno Sablan. Additionally, two recreational users and three tourism industry employees were interviewed. Four focus group discussion sessions were held, that included staff from Tasi Tours, the Managaha concessionaire, a group of recreational users, and two groups of fishers, one from Tanapag and another from Kagman village.

Participants were selected based on access and visits to the island, and fishers who either had knowledge of the MMCA or had been known to fish in or around the marine protected area.

Key findings from the interviews and focus groups were:

- Fish were easy to catch in the sanctuary, and they were larger in size than non-MPA fishing sites in the lagoon
- The weak economy/lack of jobs and weak enforcement were key factors that led to poaching in the MPA
- Spearfishers were a key group of poachers
- Fishers from Tanapag were named as a key group of poachers in the MPA, although most respondents would only admit to this off record

### KAP Surveys

Following completion of qualitative research, two KAP surveys were developed, one for recreational users and one for tourism industry workers. With an audience size of 8,000, 95% confidence level and 5% confidence interval, the recommended sample size was 381. 364 pre-campaign surveys were conducted. The following table indicates pre-campaign KAP baselines:

SMART Objective	Pre-campaign result (baseline)
By June 2014, the number of users that know the benefits of having the Managaha Marine Conservation Area (MMCA) increases from x% to y%.	29.0%
By June 2014, the % of users that know the rules and regulations of the Managaha Marine Conservation Area (MMCA) increases from x% to y%.	94.0%
By June 2014, the % of community members who are willing to report violations of the Managaha Marine Conservation Area (MMCA) rules and regulations will increase from x% to y%.	69.0%
By June 2014, the % of users who support the prohibition of fishing in the Managaha Marine Conservation Area (MMCA) increases from x% to y%.	81.0%
By June 2014, the % of users who talk to each other about the Managaha Marine Conservation Area (MMCA) increases from x% to y%.	29.0%
By June 2014, the % of users who talk to each other about the importance of the Managaha Marine Conservation Area (MMCA) rules and regulations for sustaining the abundance of fisheries increases from x% to y%.	21.0%

By June 2014, the % of users who have seen or heard of fishing in the Managaha Marine Conservation Area (MMCA) increases from x% to y%.	26.0%
By June 2014, the % of users who have participated or are actively involved with the Managaha Marine Conservation Area (MMCA) increases from x% to y%.	5.0%

**3. Use baseline metrics generated in collaboration with program partners the Pacific Marine Resource Institute (PMRI) and DFW to track progress of the campaign through key indicators such as biomass, biodiversity, coral cover and citations within the MPA as well as within areas in close proximity to the MPA.**

As mentioned previously, monitoring partner PMRI presented on monitoring surveys during the University Phase II. Results from surveys were entered into Rare’s Data Management Tool template and baseline data was established. The following is from PMRI’s “Ecological Indicator Assessments for the 2012 RARE Program for Island Resilience in Micronesia,” pp. 16-21 [Prepared by John Starmer, Starmer Systems, for the Pacific Marine Resources Institute August 2013]

***Northern Mariana Islands: Managaha Marine Conservation Area***

Although considered for some form of management since the 1980’s, the Managaha Marine Conservation Area is now just over ten years old (Fig. 10). There have been continued efforts to provide outreach about the purpose and regulations at the marine protected area (MPA) along with continued efforts to improve enforcement and create a sustainably financed management program for the MPA. Despite these efforts, enforcement and compliance with regulations is thought not to be at a level that will allow the MPA to function optimally in enhancing Saipan’s fisheries.

Assessment and reference sites were located in back reef of the northern part of Saipan Lagoon (fig. 10). Due to its relatively sheltered location the reference site is subject to fishing pressure most of the year. The back reef habitat at both sites is characterized by mixed coral-bearing hard ground and sand. The RARE Project site is equivalent to a long-term monitoring program station while the reference site is new (fig. 11).



Figure 10. Location of Managaha Marine Conservation Area campaign site and Tanapag back reef reference site. Base image from Google Earth.



Figure 11. Long-term coral reef monitoring program sites on the islands of Saipan and Tinian.

## Results

Figure 12 provides graphical overviews of the survey results by survey unit, (SPC or transect) and a comparison, for fishes, with biomass values (fig. 12) from other CNMI MMT monitoring sites (fig. 11).

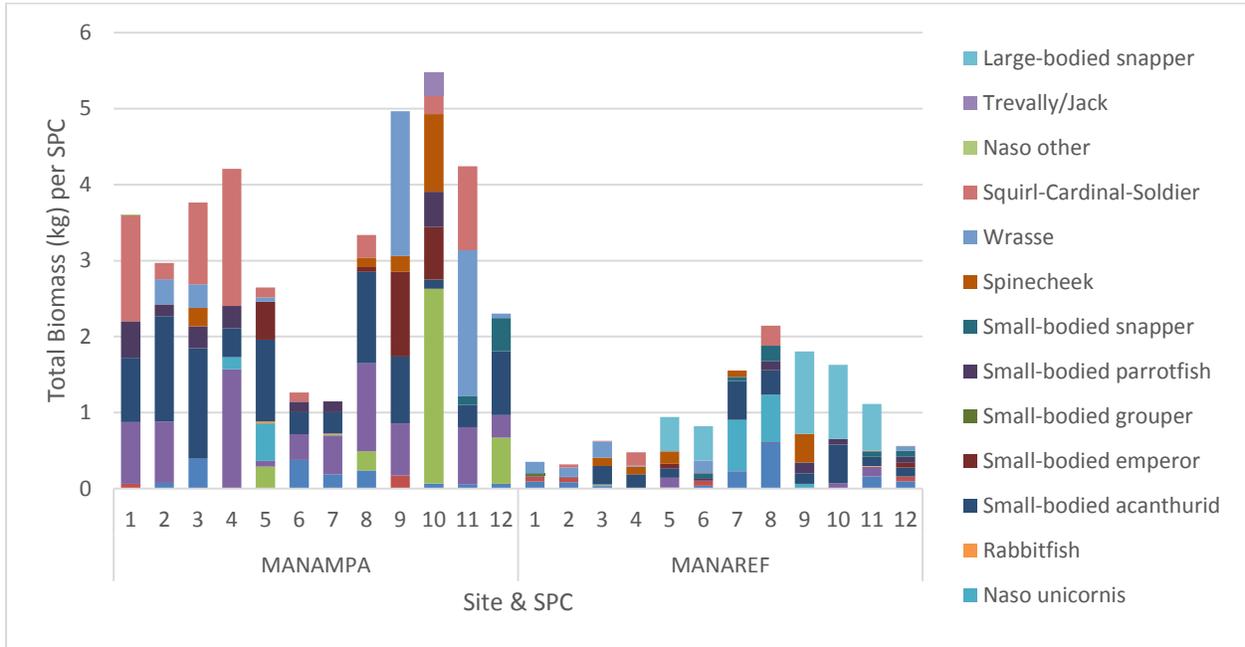


Figure 12. Total fish biomass (kg) by stationary point count (SPC) station at Managaha MPA campaign site and Tanapag back reef reference site.

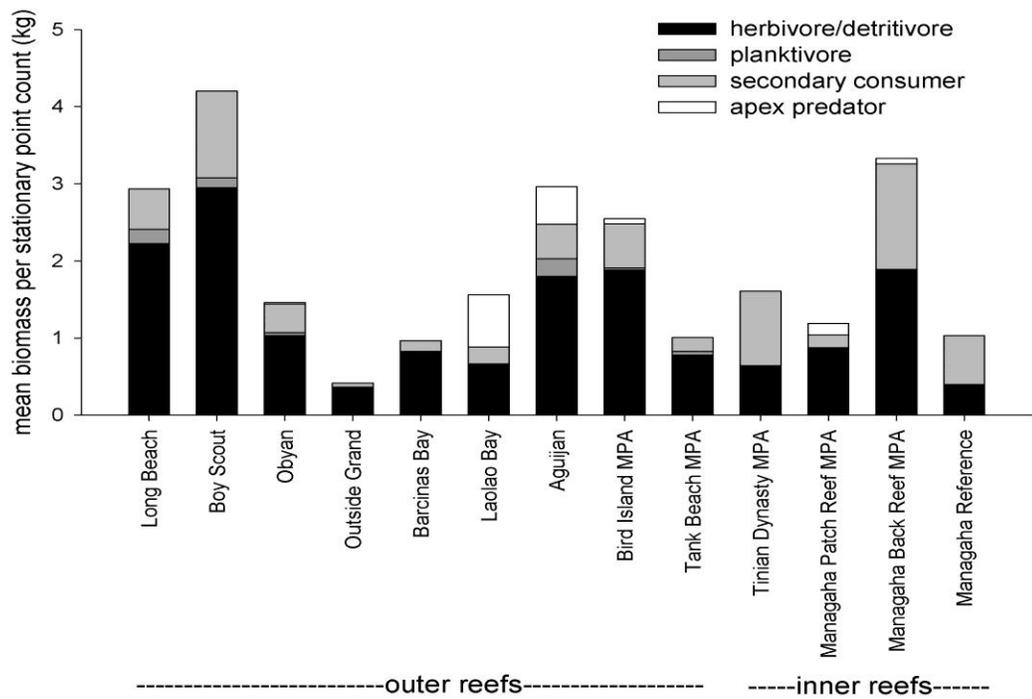


Figure 13. Comparison of mean fish biomass per SPC among CNMI Long-Term Monitoring Program sites on Tinian and Saipan and including RARE Project result for Managaha project and reference sites. (Courtesy Dr. Peter.Houk, UOGML)

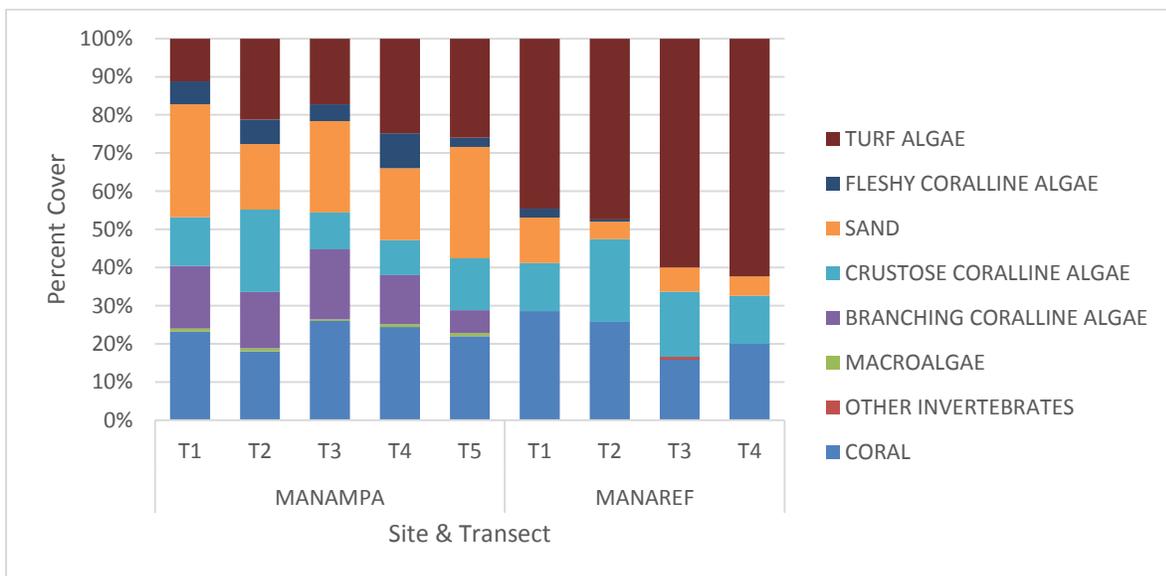


Figure 14. Benthic cover at Managaha project and reference sites by transect.

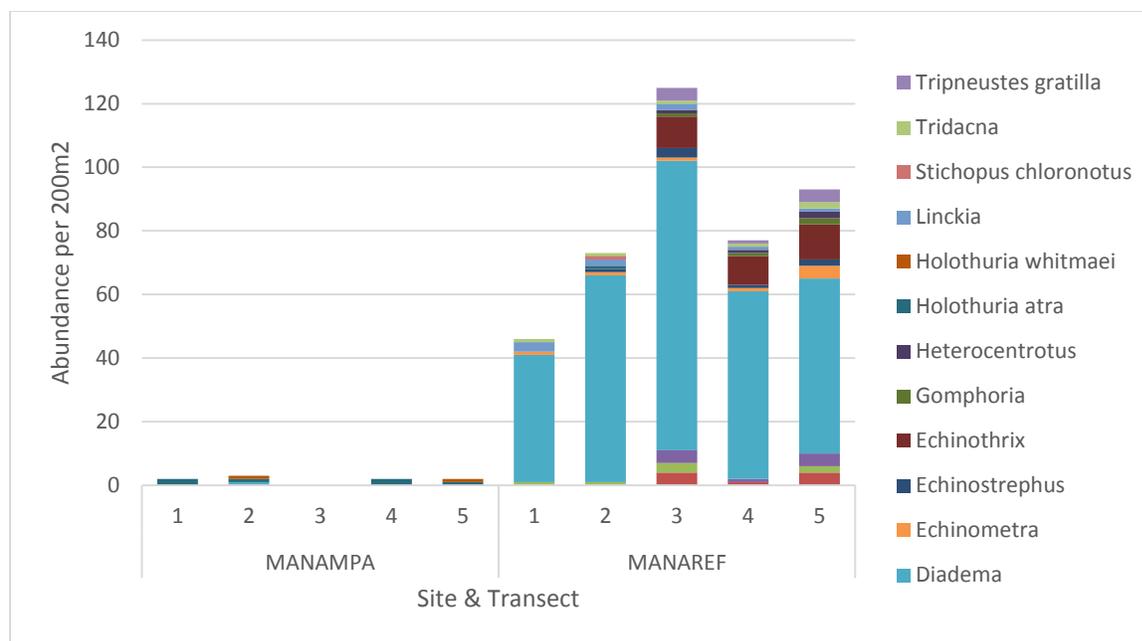


Figure 15. Total invertebrate abundance at Managaha project and reference site for each survey transect.

## Discussion

The Managaha MPA project site has relatively high levels of hard cover (hard coral and coralline algae) and low levels of turf algae, indicative of a reef habitat in good ecological condition. Though similar benthic categories exist at the reference site, the absence of branching corals, coralline algae and turf cover at or above 50% indicates relatively poorer ‘health’ or less favorable environmental conditions for coral habitat.

The assessment site also has both greater diversity and biomass of food fishes present as compared to the reference site (fig. 12). Overall biomass is comparable to other sites on Saipan and Tinian, though the roughly equal ratio of herbivores to secondary predators at both sites is unusual (fig. 13). Most other monitoring sites present a more typical state with herbivores being in greater abundance than secondary predators.

*Naso lituratus*, small emperors, small parrotfish, small acanthurids, wrasse and squirrel/cardinal/soldier fishes were relatively abundant at the Managaha survey site and nearly absent at the reference site. With the possible exception of wrasses, all of the listed fish are targeted as food fish on Saipan and their abundance may be a reflection of fishing pressure at the two sites. The much lower number of grazers (*Naso* spp. and small-bodied acanthurids) may, in part, explain the higher levels of turf algae at the reference site.

The variation in invertebrate abundance and diversity between the two sites is surprising. This difference is primarily driven by Diadematid grazing urchins (*Diadema* and *Echinothrix*). Even in their absence, the reference site holds a higher invertebrate abundance and diversity.

From the perspective of evaluating RARE Project success at this site, diversity, abundance and biomass at the MPA should at least maintain current levels or increase. Similarly ratios of benthic indicators of reef condition (hard coral and coralline algae vs. turf or macro algae) should be maintained or increase. Invertebrates also may increase, though the high levels of fisheries species at the reference rather than the MPA site suggest invertebrates may not be the most relevant indicator of fishing pressure.

**4. Develop and begin to conduct a comprehensive social marketing and community outreach program to build awareness and understanding of the importance of Saipan’s MPA network—particularly Managaha MPA—and how human behaviors are threatening Saipan’s delicate reef system and the biodiversity found within.**

The Managaha Campaign has successfully been developed and launched. The first activity as part of the social marketing strategy was logo development. Initially, the expertise of biologists and graphic designers was employed to design the logo, incorporating the campaign’s flagship species – the unicornfish (or Tataga in Chamorro). Following that, as a result of dissatisfaction with the fish design created, a fish design contest was launched with the Tanapag Elementary School 6<sup>th</sup> Grade class. A winning design was chosen and rendered for logo purposes. The campaign slogan (Managaha Sanctuary: Respect, Protehi, Afalli) utilizes the CNMI’s three official languages for full effect. Not only is ask to respect the sanctuary, but to protehi (“protect” in Chamorro) and afalli (“watch over” in Refaluwasch) – respect, protect and watch over the sanctuary.



There has already been much buzz about the campaign, through communications with the school principal. The flagship species is also Tanapag village’s mascot, as well as the elementary school mascot.

A soft launch for the Managaha Pride Campaign took place Saturday, September 28 at two separate locations. Flyers in the shape of the Tataga listing the rules and regulations of the MPA,

as well as campaign partners, will be handed out at the 2<sup>nd</sup> Annual Let's Move Marianas event, with an expected attendance of over 1,000 school-aged children (K-12). On the same day, additional flyers will be handed out at the annual Chief Aghurubw Commemoration event, with an attendance of around 150 people. In mid-October, a booth will be set up at the annual Tanapag Fiesta, with the plan for it to be manned by students.

Other planned prompts include T-shirts, collapsible water bottles, drawstring backpacks, and chill skinz. Additionally, a "Friends of Managaha" advisory group is being formed with community members. The first member is Lino Olopai, Carolinian elder and environmentalist/co-founder of MINA. The "Friends" advisory group will assist in gathering additional community members to assist with MPA surveillance and monitoring. A team with existing MINA Tasi Watch Rangers has been assembled, with planned surveillance to take place beginning October 2013. A thermal imager will be procured to assist in this effort.

Currently, MINA is developing the final draft of a Memorandum of Understanding with the CNMI Division of Fish & Wildlife that will assist with community monitoring efforts, as well as lay out the agreed-upon plan of buoy refurbishing and installation using campaign funds.

The overall goal of the 1<sup>st</sup> phase of campaign is to remind the public of the rules and regulations of the MPA, and report any violations to the proper agency.

