



10/22/2013	Acropora Recon S5	19.50883	-155.93528
10/22/2013	Acropora Recon S6	19.50325	-155.95305
10/26/2013	Ke'ei Retro Study	19.46320	-155.92545
10/31/2013	Acropora Recon S7	19.49797	-155.95116
10/31/2013	Acropora Recon S8	19.49421	-155.95035
11/6/2013	Manukā	19.07672	-155.90394
11/6/2013	Miloli'i/Honomalino	19.16729	-155.91323
11/6/2013	Okoe	19.13666	-155.91818
11/7/2013	Ho'okena (Auau)	19.29789	-155.88986
11/7/2013	Ho'okena (Kalahiki)	19.36916	-155.89738
11/13/2013	Kamilo Gulch	20.08102	-155.86804
11/13/2013	Lapakahi	20.16001	-155.90017
11/13/2013	Waiaka'ilio	20.07392	-155.86449
11/14/2013	Old Kona Airport	19.64212	-156.01210
11/14/2013	Papawai	19.64725	-156.02296
11/14/2013	S. Oneo Bay	19.63153	-155.99299
11/19/2013	'Anaeho'omalua Bay	19.95275	-155.86617
11/19/2013	Keawaiki	19.89112	-155.91004
11/19/2013	Puakō	19.96988	-155.84877
11/20/2013	Kealakekua Bay	19.47930	-155.93276
11/20/2013	Ke'ei	19.46282	-155.92677
11/20/2013	Keopuka	19.48314	-155.94582
11/21/2013	Ho'ona / Unualoha	19.74251	-156.05575
11/21/2013	Ka'ūpūlehu	19.84395	-155.98093
11/21/2013	Makalawena	19.79650	-156.02786
11/22/2013	Ke'ei Retro Study	19.46320	-155.92545
11/22/2013	<i>Acropora</i> site work	19.35350	-155.95709
11/26/2013	Wawaloli Beach	19.70887	-156.04951
11/26/2013	Wawaloli FMA	19.70000	-156.04992
11/26/2013	Kaloko-Honokōhau	19.67098	-156.03032
11/27/2013	Keauhou	19.56838	-155.96932
11/27/2013	Kualanui Pt.	19.54841	-155.96236
11/27/2013	Red Hill	19.50455	-155.95306
12/27/2013	Ke'ei Retro Study	19.46320	-155.92545
1/14/2014	Manukā	19.07672	-155.90394
1/15/2014	Ho'okena (Auau)	19.29789	-155.88986
1/15/2014	Ho'okena (Kalahiki)	19.36916	-155.89738
1/15/2014	<i>Acropora</i> site work	19.35350	-155.95709
2/11/2014	Manukā	19.07672	-155.90394

2/11/2014	Miloli'i/Honomalino	19.16729	-155.91323
2/12/2014	Kealakekua Bay	19.47930	-155.93276
2/12/2014	Ke'ei	19.46282	-155.92677
2/12/2014	Keopuka	19.48314	-155.94582
2/19/2014	Old Kona Airport	19.64212	-156.01210
2/19/2014	Papawai	19.64725	-156.02296
2/19/2014	S. Oneo Bay	19.63153	-155.99299
3/11/2014	Kamilo Gulch	20.08102	-155.86804
3/11/2014	Lapakahi	20.16001	-155.90017
3/11/2014	Waiaka'ilio	20.07392	-155.86449
3/12/2014	'Anaeho'omalua Bay	19.95275	-155.86617
3/12/2014	Keawaiki	19.89112	-155.91004
3/12/2014	Puakō	19.96988	-155.84877
3/13/2014	Ho'ona / Unualoha	19.74251	-156.05575
3/13/2014	Ka'ūpūlehu	19.84395	-155.98093
3/14/2014	Makalawena	19.79650	-156.02786
3/18/2014	Manukā	19.07672	-155.90394
3/18/2014	Miloli'i/Honomalino	19.16729	-155.91323
3/19/2014	Ho'okena (Kalahiki)	19.36916	-155.89738
3/19/2014	Ke'ei	19.46282	-155.92677
3/19/2014	<i>Acropora</i> site work	19.35350	-155.95709
3/25/2014	Keauhou	19.56838	-155.96932
3/25/2014	Kaloko-Honokōhau	19.67098	-156.03032
3/26/2014	Ka'ūpūlehu	19.84395	-155.98093
3/26/2014	Puakō	19.96988	-155.84877
3/26/2014	Waiaka'ilio	20.07392	-155.86449
3/27/2014	Ke'ei Retro Study	19.46320	-155.92545
3/27/2014	Ke'ei	19.46282	-155.92677

- **Summary of monitoring efforts and applications to management:**

Fish Surveys and Monitoring

Completed fish and selected invertebrate surveys for 1 complete round at 25 sites (100 transects). Ten minute 'Free Swim' surveys also conducted at each of the above sites (25 surveys). Resource fish surveys were conducted at 14 monitoring sites (14 surveys). A total of 8 surveys along the Kona Coastline in search of other areas of *Acropora* coral were completed. Benthic survey work including rugosity and benthic photos for coral coverage were completed for 20 of the 26 sites including the *Acropora* site (80 transects). Coral settlement tiles were retrieved from all 10 sites (80 tiles). Conducted monthly fish surveys at Ke'ei (South Kona) retrospective (i.e. long-term) study site (15 transects). However, no Ke'ei surveys were conducted in Dec 2013 or Jan 2014 due to harsh ocean conditions and diver availability.

In October 2013, we published a journal article about the *Acropora gemmifera* discovery in South Kona from April. The article citation is as follows and a PDF copy has been provided as a supplementary attachment with this progress report: Walsh, W.J., S. Cotton, L. Jackson, M. Lamson, R. Martin, K. Osada-D'Avella, and L. Preskitt. 2013. First record of *Acropora gemmifera* in the main Hawaiian Islands. Coral Reefs [DOI 10.1007/s00338-013-1092-3]. It is also available to the public here: <http://link.springer.com/article/10.1007/s00338-013-1092-3/fulltext.html>

During this reporting period all of the data collected during the 4 complete 2013 rounds (#68 - #71) of fish/invert surveys conducted at each of the 25 survey sites (400 surveys) were entered into our Microsoft Access® fish database. Data entry was also completed for all “Free Swim” surveys (100 surveys) and “Resource fish surveys” (52 surveys) conducted in 2013. Moreover, data-checking (a.k.a. quality control) was conducted by the fish and habitat monitoring technicians for the last 3 rounds of the 2012 (round #65 - #67) fish/invert surveys (300 surveys), “Free swim” surveys (75 surveys), and “Resource fish surveys” (39 surveys).

Management application of our coral reef monitoring efforts came to fruition on December 15, 2013 when Governor Neil Abercrombie signed a new Hawai'i Administrative Rule (Chapter 13-60.4) for the West Hawai'i Regional Fishery Management Area, Hawai'i (WHRFMA). This rule was the culmination of over 10 years of work by DAR and the West Hawai'i Community with particular support by the West Hawai'i Fisheries Council. Rule development and subsequent assessment of rule effectiveness is clearly dependent upon the data gathered by our coral reef monitoring activities. The following provisions are contained within the WHRFMA rule which became effective December 26, 2013:

- Prohibition of SCUBA/Rebreather spearfishing and/or possession of such gear and a spear or speared aquatic life.
- Establishment of a 1,500 foot section of Ka'ohē Bay (Pebble Beach), South Kona, as a Fish Replenishment Area (FRA) where aquarium collecting or recreational fish feeding will not be allowed.
- Establishment of a list of 40 fish species permitted for aquarium take. Only fish found on this “White List” can be collected live for aquarium use. Size and bag limits would be established for three of the species on the White List.
- Prohibition of take or possession of nine species of inshore sharks and rays and two invertebrate crown-of-thorns predators.
- **Products/deliverables:**

This progress report constitutes the deliverable for this six month grant reporting period. A Final Report of the Long-Term Monitoring of Coral Reefs of the Main Hawaiian Islands was completed in February 2013. The report presents analysis of monitoring data from 1999-2012.

During our last dive in 2013 (round #71), we celebrated our 15<sup>th</sup> annual consecutive fish and invert survey dive for these same 25 monitoring sites!

- **Obstacles or Delays:**

Obstacles, primarily relating to staffing, continued during this 6 month period. A West Hawaii DAR fishery technician was unavailable for work during this entire period, the previous fishery technician was terminated on 30 August, 2013 but the position has not been refilled. One other staff member could not dive at all during the grant period due to administrative limitations. In addition, there was only one part-time fish and monitoring technician hired from Dec 2012 – May 2013. This prevented any data checking

from occurring during this time (as it requires two people). Nevertheless with creative scheduling and strong support from our interim hourly divers and volunteers we were able to complete our scheduled monitoring work.

- **Status of Special Award Conditions:** None

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Signature of Point of Contact: \_\_\_\_\_