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DMWR Fisheries Division Fourth Quarter Report FY23

1. Shore-based creel program:

The Shore-based Creel Survey data collection program completed a total of 128 survey runs, accomplished 44 field sampled days within 65 Weekdays and 14 Weekend/Holiday for this final quarter. The field monitoring team recorded 38 Participation counts and 32 Interview catch data not including opportunistic that will calculate an estimate catch and effort data from July to September. Information collected accumulates expansion totals that express the estimated catch landings by gear type of the near shore fishery.

Below are results generated from Shorebased Creel Survey data collection efforts in the main island of Tutuila only. Due to staff personal leaves and unexpected resignations from technicians in Manu'a the data collection considerably decreased in this fourth quarter report. Total expanded catch with pooling is estimated at 7,817lbs; the total expansion for Gear/Hr totals to 4,373lbs; and the expansion total for Catch/ Gear-Hr is 1.79lbs.

The expanded catch/ effort summary by gear methods:

2023	Rod and Reel	GillNet Active	SpearFishing	Gleaning	HandLine	ThNet
July to September	4,330lbs	2,667lbs	1,033lbs	133lbs	32lbs	22lbs

The catch summary also provides a list of species composition in total landings with pooling. The five dominant species for this quarter are listed below.

1. Bigeye scad/ *S. crumenophthalmus*/ Atule
2. Fringelip mullet/ *C. crenilabis*/ Anae
3. Octopus/ *Octopuses cynea*/ Fe'e
4. Redlip parrotfish/ *S. rubrovilaceus*/ Fuga
5. Spiny lobster/ *P. penicillatus*/ Ula sami

2. Key Reef Species Program:

1. Tutuila Reef Flat and Reef Slope survey

Staff conducted and completed 3 reef slope survey sites for a total of 7 completed survey sites. Reef flat sea trials were done to refresh and train new staff.

Reef slope:

- | | |
|--------------|----------------------------------|
| 1. Alea | Photo Quad run |
| 2. Amanave | Trans 1 & 2 |
| 3. Matu'u | Complete |
| 4. Poloa | SPC Fish calibration ad Quad run |
| 5. Nu'uuli | Complete |
| 6. Aua | Complete |
| 7. Afono bay | Complete |
| 8. Alofau | Complete |
| 9. Aoa | Complete |
| 10. Sailele | Complete |

Reef flat:

- | | |
|------------|----------|
| 1. Sailele | Complete |
| 2. Aoa | Complete |
| 3. Alofau | Complete |
| 4. Auto | Complete |
| 5. Amanave | Complete |

Monitoring surveys was really hard to complete as some of the dive staff traveled for training and weather has been really unpredictable. American Samoa has been highly affected by the shift of Tradewinds which brought 25-30 mph winds. South winds and high surf advisory prevented us from doing our monitoring survey. Staff also participated in our Oxygen O2 emergency administering training for incase of an emergency. Project staff has also been doing professional development for Species fish ID training to improve and strengthen species identification.



Figure 1. Fisheries divers deployed at Sailele and Aoa for Coral Reef monitoring survey.

3. Fish sample collection in Tutuila

Project staff collected and processed 223 fish samples for life history. Gonads and otoliths were collected from:

- | | |
|---------------------------------|----|
| 1. <i>Epinephelus merra</i> | 87 |
| 2. <i>Lutjanus fulvus</i> | 62 |
| 3. <i>Scarus oviceps</i> | 94 |
| 4. <i>Monotaxis grandoculis</i> | 28 |
| 5. <i>Lethrinus amboinensis</i> | 47 |

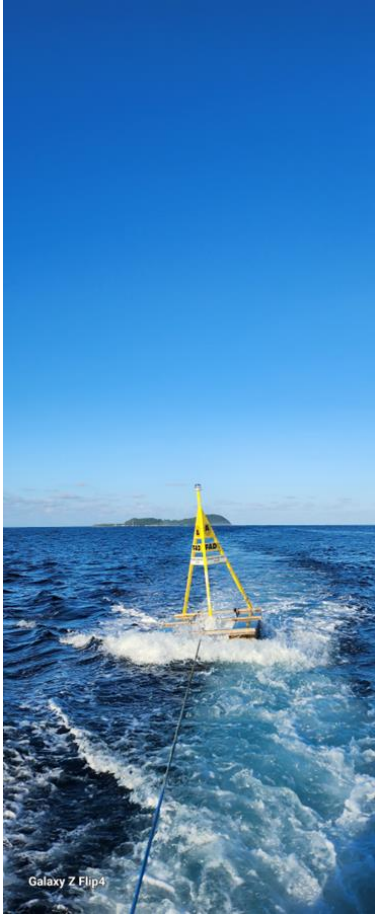


Figure 2. Fisheries staff together with POSEIDON representative John Wiley from Hawaii extracting otoliths and gonads for research. Otoliths are collected to determine the age of the fish species and gonads are to determine sex at maturity.

Project staff collected and extracted otoliths for the project. We were fortunate to have John Wiley from Poseidon who came to help with the collection and extraction of otoliths. We are planning to have a fish otolith grinding (aging) and staging of gonads in November. Fish sample collection and processing is still ongoing.

4. Boston Whaler is still in water and has been brought up for regular pressure wash and barnacle removal. Boat maintenance contract with IG is still active. Regular service and cycling of engines to charge batteries and fuel water separation maintenance is conducted by staff.
3. **Sportfish Life History Program**: New microsatellite population genetic markers specific for American Samoa have been developed for the bottomfish *Lutjanus kasmira*, *Lethrinus rubrioperculatus*, and for the reef fish *Acanthurus lineatus*. Staff is coordinating with the partner molecular laboratory, the Australian Genome Research Facility, which is generating microsatellite population data from the samples collected from Savaii, Upolu and Tutuila. Staff is organizing microsatellite data collected from the samples of *Myripristis berndti* and *Acanthurus lineatus* collected from Manua and Rose Atoll.

4. **Fish Aggregation Device Program:**



FAD staff responded to a fisherman's report about FAD A buoy drifting. Satellite buoy data also indicated that buoy drifted. Staff is planning redeploying FAD A. Other plans include identifying a FAD site in Vatia to use the catamaran buoy.

FAD continued to collect data from sportfishermen. Staff also conducted visual inspections of the other FADs. The remaining FADs are FADs B, C, D and E.

Staff supporting the Manua Fishing Tournament and the Coastweek 2023. Five boats participated during the Coastweek Fishing Tournament last Sept. 28, 2023. The following were the species landed:





5. Boat-Based Creel Survey Program:

There were 9 active alias that contributed to the landings from longline, bottomfishing, trolling, mix bottomfishing/trolling and spearfishing activities from July 2023 to September 2023. Throughout this quarter, these vessels have landed a total of 2,522 expanded pounds of fish. Surveys were conducted randomly throughout the month for at least 3 weekdays a week and 2 weekends per month. Throughout this quarter, there were 64 fishing trips with fishing effort recorded from 20 interviews. Species landed by the local alias are reflected in the port sampling through Boat-based Creel Surveys.

The market sales of pelagic, bottomfish and nearshore species are found in the Commercial Invoice System. Registered vendors in the Commercial Invoice System are local businesses that purchase fresh and/or frozen local fish. In accordance to A.S.A.C 24.0905, Dealers Records need to reflect all this pertinent information on the invoices provided by the department. Purchase transactions such as Resold (purchase from another business) and Imports are also reflected in these commercial invoices. In accordance to A.S.C.A 24.0305, vendors need to submit their invoices on or before the 16th of every month. The department sends a team on a courtesy visit to all vendors to assure data quality and control. Invoices collect do not always reflect purchases made during the collection. Some invoices are collected or submitted to the department at a later date which will alter present numbers reflected in

this report. There are currently 74 vendors in the Commercial Invoice System which have all been visited every month this quarter.

The objectives of the project and corresponding activities for this reporting period are:

- 1. Monitor catches of highly migratory, species harvested within American Samoa's EEZ by means of port sampling of commercial vessels and continue documentation of market sales.**

Three active fishing vessels caught 735 expanded pounds of pelagic fish species this quarter. The most dominant fish caught was the Yellowfin tuna (*Thunnus albacares*). Table 1. Lists the pelagic species caught from alia boats this quarter.

Table 1. Pelagic catches from alia boats throughout April 2023 to June 2023:

Species	TRL	Total (lbs.)
Sailfish	262	262
Wahoo	111	111
Yellowfin tuna	228	330
Dogtooth tuna	20	20
Kawakawa	3	3
Skipjack tuna	9	9
Total (lbs.)		735

Market sales of \$81,054.69 for pelagic species are recorded in the Commercial Invoice System and the following table reflects the purchase made this quarter:

Table 2. Market sales of pelagic species recorded in invoices for this quarter:

Species	Troll	Resold	Total (lbs)
Marlin	87.34	5637.95	5,725.29
Wahoo	7,065.73	6693.05	13,758.78
Swordfish	-	1282.04	1,282.04
Dogtooth tuna	57	-	57.00
Total (lbs)	7210.07	13613.04	20,823.11

- 2. Monitor catches of Bottomfish species harvested within American Samoa's EEZ by means of documenting market sales and port sampling.**

There were five alias that contributed to the total landings of 1,145 expanded pounds of bottomfish species this quarter. Humpback snapper (*Lutjanus gibbus*) was the dominant species caught this reporting period with an estimated 387 lbs. which accounts for 34% of the bottomfish species caught. The following table lists the dominant species caught this quarter.

Table 3. Total bottomfish landings by species from July 2023 to September 2023

Species	Bottomfishing	BTM/TRL Mix	Total (lbs)
Humpback snapper	289	98	387
Red snapper	208	-	208
Rainbow runner	-	135	135
Gray jobfish	82	29	111
Silverjaw jobfish	-	74	74
White-edge lyretail	27	31	58
Redgill emperor	39	18	57
Bluefin trevally	-	27	27
Timor snapper	-	20	20
Other	36	32	68
Total	681	464	1,145

There are no records of bottomfish purchases this quarter in the Commercial Invoice System.

3. Monitor catches of Spearfishing activities within American Samoa's EEZ by means of documenting market sales and port sampling.

There were three alias actively spearfishing this quarter with a recorded catch of 1,548 expanded pounds of nearshore marine species. Spearfishing activities are conducted at least 4 days a week and 8 interviews collected this quarter and reported the following statistics. The most dominant species caught is the Redtail parrotfish (*Chlorurus japanensis*) which accounts for 18% of total landing of nearshore fisheries caught. The following table lists the most common species caught this quarter.

Table 4. Total of nearshore fish species landed by boat-based spearfishing activities.

Species	Scientific Name	Total (lbs)
Redtail parrotfish	<i>Chlorurus japanensis</i>	103
Bluespine unicornfish	<i>Naso unicornis</i>	83
Dark-capped parrotfish	<i>Scarus oviceps</i>	55
Steephead parrotfish	<i>Chlorurus microrhinos</i>	53
Stareye parrotfish	<i>Calotomus carolinus</i>	48
Spiny lobster	<i>Panulirus penicillatus</i>	46
Blue-banded surgeonfish	<i>Acanthurus lineatus</i>	35
Lowfin drummerfish	<i>Kyphosus vaigiensis</i>	22
Bridled parrotfish	<i>Scarus niger</i>	22
	Other	119
Total (lbs)		586

Market sales of nearshore species this quarter are valued at \$29,202.25. Commercial invoices show 2,886 lbs. of the Bluebanded surgeonfish (*Alogo/Acanthurus lineatus*) as species the most popular purchase this quarter.

Table 5. Nearshore species reported in the commercial invoice system from July 2023 to September 2023

Species	Spearfishing	Resold	Total (lbs)
Blue-banded surgeonfish	2,835.84	50.00	2,885.84
Parrotfishes	1,389.75	204.68	1,594.43
Reef fishes	175.00	29.14	204.14
Spiny lobster	14.51	40.83	55.34
Striped bristletooth	385.28	30.00	415.28
Emperors	458.78	-	458.78
Groupers	602.78	-	602.78
Squirrelfish	311.30	-	311.30
Unicornfish	1,308.77	-	1,308.77
Total (lbs.)	7,482.01	354.65	7,836.66

4. Disseminate information of American Samoa's Fisheries and Data Collection efforts

- a. All workshops scheduled for this fiscal year were scheduled for October 2023 and were disapproved due to late reports.

5. Fund Enforcement activities related to interjurisdictional fish species.

- a. The department issued 14 commercial fishing licenses for local fishermen this quarter. Majority were renewals and one newly issued fishing license.
- b. Commercial Invoice Collection is scheduled on/or before the 16th of every month. Every month, every vendor is visited and invoice submissions are made by majority of the vendors.
- c. When applying for a Commercial Fishing License, applicants will need to sign an Acknowledgement Form that verifies their participation in a Regulations Briefing by the Enforcement Division. This form also informs applicant(s) of their responsibility to participate in all data collection efforts by the department. Copies of the forms are given to the (1) applicant; (2) Enforcement Division and (3) Boat-based Creel Survey Program for records and as supporting documents in future citations.

6. **Giant Clam Population Restoration Project:**



DMWR staff is in close communication with Samoa-MAF for the date for giant clam transport

- 1) Developed protocols for the giant clam quarantine (14 days before clam transport) in Apia;
- 2) Identified potential sites for the clam deployment
- 3) Coordinating with Fagaalu mayor, the immediate clam deployment site. Other sites will be Nuuuli and possibly Manua.
- 4) DMWR staff preparing for the clam field-maintenance training. During the training there will also be site visits for 'limu' survey and in coral reef restoration pilot sites
- 5) Both sides working on necessary permits and documentation.

7. Community-Based Fisheries Management Program:

SUMMARY OF ACTIVITIES: HIGHLIGHTS FOR THE QUARTER

CFMP team, together with CRAG and Key Reef staff attended the *Divers Alert Network (DAN) Emergency Oxygen for Scuba Diving Injuries* course on the **6th July 2023** at DMWR training room. The training was conducted by DAN certified dive safety instructors Erik Brown and Max Sudnovsky and included an online portion and hands on practical for administering lifesaving oxygen first aid to divers who may be suffering from decompression illness. The training helped the scuba divers identify the component parts of the DAN oxygen unit; disassemble and reassemble with minimal assistance and to identify signs and symptoms of decompression illness and respond to them accordingly. All DMWR and CRAG staff that attended passed the course and are now certified to administer lifesaving first aid oxygen to injured dive buddies when needed.



CFMP staff and CRAG supporting staff attended the US Jurisdiction Indo-Pacific Coral Restoration Network workshop in Guam from **July 31st-August 6th 2023**. The main objectives for the workshop were

- to gain hands on experience in coral restoration intervention methods for nurseries, outplant methods and monitoring
- expand current Pacific coral restoration practitioner networks
- share jurisdictional action plans for coral restoration efforts





Participants from other territories, government agencies and non-government organizations also attended the workshop. As a take away for American Samoa, there is a need to update and finalize the draft *American Samoa Coral Restoration Action Plan 2021*, finalize site plans and scientific profiles for villages where coral restorations are needed, gather information and data on biological parameters and conditions in the restoration sites, identify land-based sources of pollution to maintain a healthy ridge-to reef ecosystem and working through logistics

for procuring materials and implementing structures on the reefs. The CFMP team and CRAG staff learned more about restoration methods including C-frame and A-frame outplant, direct transplantation, cement and epoxy fragment attachment, rope nursery, coral tree nursery, bouldering coral stabilization and micro fragmenting. The team from American Samoa to this



workshop also included the National Marine Sanctuary which is also assisting in drafting the *American Samoa Coral Restoration Action Plan* together with other CRAG agencies through the *Coral Reef Technical Committee (CTC)* that meets monthly.



CFMP team had a meeting with Fagasa representatives on the **18th August 2023**. This meeting was to establish interest from the village on the setting up of the village Marine Protected Area in Fagasa. The village is currently a no-take zone under the National Park of American Samoa program and CFMP is working in establishing the village MPA in the new fiscal year with program objectives. As at current date of this report, Fagasa is scheduled to meet with CFMP team on **October 27th 2023**.

The Jurisdictional Coral Reef Fisheries Management Plan (JCR-FMP) planning team met on the **18th August 2023** to structure the timeline for this work moving forward to the new fiscal year. Discussions were made on the need for fishing community discussions regarding management measures, to be led



by CFMP team based on their direct engagement with the villages under the program. There is also need to analyze and compare creel program data, biological sampling data, biological fisheries monitoring data

and coral monitoring data to feed management measures selected for the Management Strategy Evaluation (MSE) analyses by the NOAA Science Center as technical support for this work. More work will be developed on this plan in the near future.

CFMP staff Warren Seva'aetasi and Ailua Tauala attended a village outreach meeting on the **23rd August 2023** with the Maga family in Masefau. CFMP team displayed some information sheets about the program and assisted other DMWR staff programs in their outreach activities.

A meeting with Sailele village was conducted at the village fale on the **25th August 2023**. The purpose of the meeting was to confirm and name some representatives for the village Advisory council committee and the village Enforcement committee, most importantly to gather important details and village by-laws to draft and update the village Fisheries Management Plan. Due to internal and unforeseen circumstances from the village council, the mayor and one other family member were the only people present at the meeting. The meeting was then called again by DMWR CFMP staff at the office the following week on Wednesday the **30th August 2023** to ensure maximum participation from the village council. Present at the meeting were also the DMWR Education staff for awareness purposes. At the end of the meeting, the following were confirmed.

- Village Advisory committee members (Decision-making body of the village on anything proposed for the village MPA)
 - Governor Lemanu Peleti Mauga
 - Togiola Tulafono
 - Mayor Tuiagafotu Topeto Galu
 - Maligi Vaitui
 - Alilimaso Fiu
 - Sauiluma Viliamu Kilifi
 - Anil Talauega
- Village Enforcement committee (enforce management measures and village by-laws within the village MPA)
 - To be confirmed again from Mayor in the near future

CFMP team will continue to work directly with the Sa'ilele village to update and develop the village Fisheries management plan.

Efforts were also made for the follow up confirmation of the village MPA sign for Sa'ilele on this meeting date. While 2 other village MPA signs were installed earlier last fiscal year as

reported, delays were observed with Sailele due to issues with communal land and the availability of *High Chief Togiola (Sa'o of the aiga)* to approve the use of family land for sign installation. The sign is printed and prepared by All Star signs in Tafuna ready to be installed upon approval from the family. CFMP team attended the *Nature-based solutions for Coastal Hazards* workshop by the Department of Commerce on the **20th-21st September 2023** in Tafuna. The workshop objectives included describing green and natural infrastructure that reduce impacts of hazards and building resilience, analyzing factors for consideration when planning natural infrastructure projects and identifying local green or natural



infrastructure and local experts to provide additional information and guidelines. CFMP sees the importance of this workshop to upskill staff on additional community structural projects to reduce impacts on the reef in the village MPAs during coastal hazards, developing risk reduction strategies and effective community engagement methods in socio-economic surveys etc.