Management Efforts in Faga’alulu Priority Watershed

American Samoa

Jeremy Raynal
Coral Reef Advisory Group
American Samoa
Faga’aluli: A Priority Watershed
Investigation Indicated:

Quarry Identified as Source

Stream Flow to Ocean

Sediment Entered Stream

Sediment Affected Reef
Mitigation With Support from the Village and the Quarry

Directed Surface Runoff

Prevention of Turbid Runoff

Baffled Sediment Basins

Reduced Turbidity
Today’s Report

• Management Plan
• Programmatic Checklist
• Monitoring and Ecosystem indicators
• Implementation Plan
• Sustainability Planning
Faga’alu Management Plan Implementation

• Trash:
  • Cleanups with data collection
  • Inspection team led by Mayor
  • Recycling program

• Stormwater Regulations:
  • Rain garden in place

• Stabilize banks:
  • Shoreline stabilization at school
  • Stream banks, Park?

• MPA:
  • Agreement in place but no action yet
Progress Using the Programmatic Checklist

- We have appropriate federal partners
- No current Watershed Coordinator (since end of last year)
- We have a management plan including input from stakeholders, officiated only by the community
- No official implementation agreement
- Sporadic perceived run off issues from construction sites
- All appropriate construction permits do not appear to be in place
- ASEPA in charge of enforcement and has actively intervened at least once
- NPDES MS-4 stormwater not currently active
- Primary wastewater treatment is in place
- There is limited local agriculture, monitored by ASEPA
## Status of Recommended Implementation Actions

<table>
<thead>
<tr>
<th>WMP Objective/ Project</th>
<th>Not viable</th>
<th>Funded</th>
<th>Project Initiated</th>
<th>% of Goal completed</th>
<th>Additional work needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three clean up committees- collect trash and report back from designated areas and inspection team established</td>
<td>Not viable</td>
<td>Funded</td>
<td>Project Initiated</td>
<td>Occurs monthly</td>
<td>No</td>
</tr>
<tr>
<td>50% of residents aware of trash and other environmental issues</td>
<td>Not viable</td>
<td>Funded</td>
<td>Project Initiated</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Village recycling program established</td>
<td>Not viable</td>
<td>Funded</td>
<td>Project Initiated</td>
<td>No program on island</td>
<td></td>
</tr>
<tr>
<td>All developed areas compliant with storm water regulations</td>
<td>Quarry</td>
<td>Funded</td>
<td>Project Initiated</td>
<td>50%</td>
<td>Engagement with ASEPA</td>
</tr>
<tr>
<td>Tree planting on unstable stream banks and coastal areas</td>
<td>Quarry</td>
<td>Funded</td>
<td>Project Initiated</td>
<td>10% (plans being reviewed)</td>
<td>Implementation</td>
</tr>
<tr>
<td>Process for stabilization of coastlines and stream banks identified</td>
<td>Quarry</td>
<td>Funded</td>
<td>Project Initiated</td>
<td>Planning begun</td>
<td></td>
</tr>
<tr>
<td>Marine Protected Area established with enforcement and management by village collaborating with appropriate agencies</td>
<td>Quarry</td>
<td>Funded</td>
<td>Project Initiated</td>
<td>10% (agreement signed with CFMP)</td>
<td>Boundaries, regulations and deputies established</td>
</tr>
</tbody>
</table>
Status of Monitoring and Priority Ecosystem Indicators

• Data: before and after mitigation

• Programs in place for ongoing data collection

• **Data collection and reporting should consider local capacity.**

• Examples:
  • ASEPA – water quality
  • DMWR/CRAG – biological surveys
Implementation Plan

• 2013 Implementation supplement created to support the Management Plan.

• This should be revisited with a new Watershed Coordinator to specify priorities to be set for this individual, agencies and village.
Sustainability Planning

• Section 3C
  • a) Plan for funding Watershed Coordinator in place.
  • b) Position institutionalized in local government through CRAG
  • c) Monitoring ecosystem indicators:
    • Fish and benthos – DMWR/CRAG monitoring team
    • Water quality - ASEPA
  • d) Codification of government and leadership:
    • Officially - Village agreed to take charge, local government there to support and enforce.
    • In practice – Some agreements are just short of legal establishment.
Challenges and Solutions

• Watershed Coordinator – in progress
• Support in training new Watershed Coordinator.
• Need intensive outreach in village and improved dialogue between village and managers
• MPA needs to be a focus – needs extensive outreach efforts
• Eco-friendly erosion control at park.
Fagaʻalu facts!

Fagaʻalu is located close to the beach park, has a high human population density and is downstream from a quarry that causes sediment runoff to the coral reefs.

- **92%** of villagers think trash is a problem.
- **6%** of households fish on the reef at Fagaʻalu.
- **85%** of villagers are concerned about water quality.
- Coral cover in Fagaʻalu is similar to the rest of the island:
  - 24% in Fagaʻalu
  - 21% in Tutuila
- Fish biomass is lower than the rest of the island:
  - 51% in Fagaʻalu
  - 42% in Tutuila
- Before storm water mitigation, sediment load was 3-4 times higher than natural conditions.

Pamphlet Created to Inform Community of Achievements and Goals:

Collaborative effort between Federal and local offices.

Credit: NOAA CREP: Adel Heenan et al.
Data from Arielle Levine
Ridge to Reef Integrated Management

Marine Biological Monitoring
- Fish
- Benthic
- Algae & Microbial
- Sediment

Water Quality Sampling
- Streams
- Coastal Springs (Groundwater)
- Reef Flat
Project Update: Nutrient dynamics and benthic algae cover in Vatia Bay

Dave Whitall, Bernardo Vargas-Angel, Andrew Mason and Greg Piniak
NOAA

Meagan Curtis
American Samoa Coral Reef Advisory Group (now with ASCC)
A Baseline Chemical Contaminants Study in the Marine Sediments of the Nu’uuli Pala Lagoon SMA

Presented by
Andrew Mason & Dave Whitall
NOAA’s Stressor Detection and Impacts Division
National Centers for Coastal Ocean Science
Silver Spring, MD
Nu’uuli Shipwreck:
Thank You!

Jeremy.raynal@crag.as

Photo Credit: Alex Messina (SDSU), Fatima Sauafea-Leau (NOAA PIRO), Trevor Kaitu'u (CRAG), Mia Comeros (ASEPA) Alice Lawrence (CRAG)