



Hawai'i Marine Debris Action Plan

An Overview of the HI-MDAP's Creation



Hawai'i Marine Debris Action Plan: An Overview of the HI-MDAP's Creation July 2016

National Oceanic and Atmospheric Administration
National Ocean Service

For more information, please contact:

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Office of Response and Restoration
National Ocean Service
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Silver Spring, MD 20910
301-713-2989

www.MarineDebris.noaa.gov

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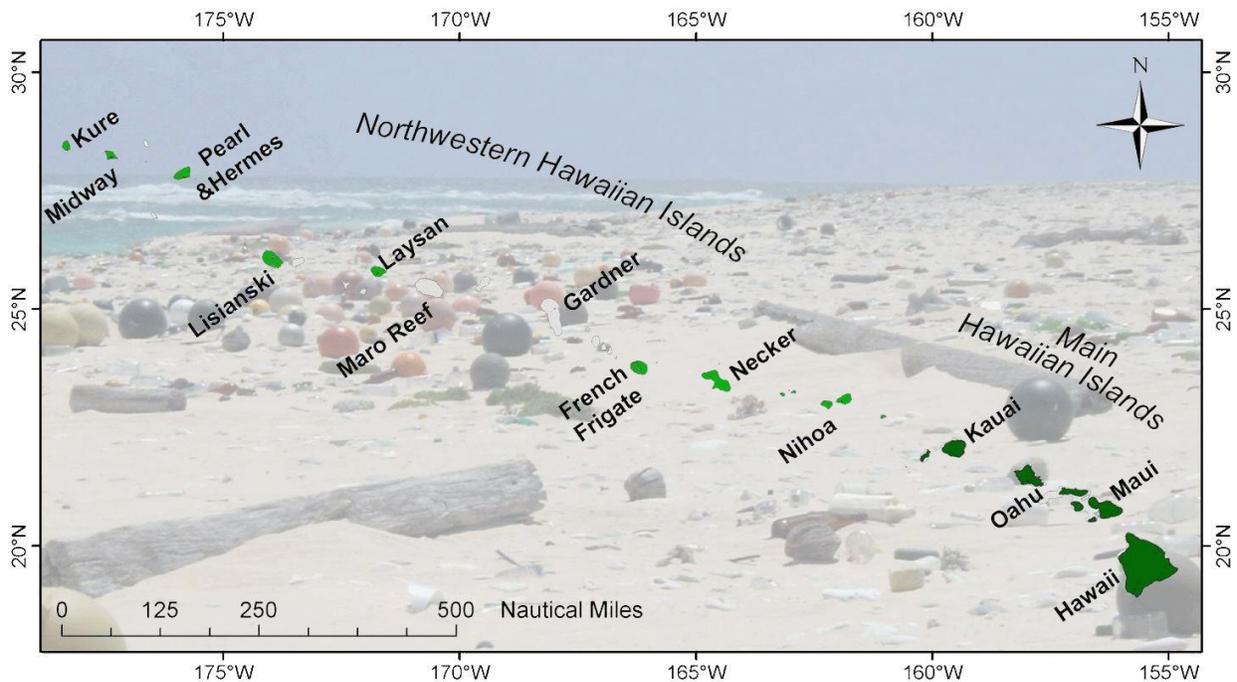
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Hawai'i Marine Debris Action Plan (HI-MDAP)

Background

The Hawaiian Archipelago, extending 1,500 miles, is one of the longest and most remote island chains in the world. The Hawai'ian Islands are prone to accumulating marine debris due to their proximity to the North Pacific Subtropical Convergence Zone, an area where ocean currents accumulate marine debris. Each year, thousands of pounds of marine debris from domestic and foreign sources wash ashore and snag on reefs across the island chain. In Hawai'i, as well as other parts of the world, marine debris threatens marine ecosystems, safe navigation, and wildlife.



The National Oceanic and Atmospheric Administration (NOAA) Marine Debris Program (MDP) has been a partner in efforts to combat marine debris in Hawai'i since 2005. The MDP works in cooperation with partners across the US and internationally to address marine debris. Around the Hawaiian Archipelago, a number of efforts are taking place to address the impacts of marine debris.

In order to prioritize Hawai'i marine debris issues, coordinate between projects, and create a strategic plan of action, the MDP supported a statewide planning workshop that kicked off in Honolulu in January 2008. This workshop brought together over 30 representatives from government, academia, nongovernmental organizations, and private businesses working to address the issue of marine debris in Hawai'i. At this workshop, information on marine debris activities and priorities, in both the main and Northwestern Hawaiian Islands, was discussed. From this workshop, partnerships were created and a commitment made to begin the development of a Hawai'i Marine Debris Action Plan (HI-MDAP), which would include greater coordination among partners, identification of potential avenues for funding, and increased communication.

Honolulu Strategy: A Global Framework for the Prevention and Management of Marine Debris

The structure and goals of the HI-MDAP align to those of the Honolulu Strategy, which makes activity planning and progress tracking a simpler process. This global marine debris strategy, as with the HI-MDAP, may be used by Hawai'i's local marine debris community to strategically plan for future activities and track progress at multiple levels (i.e., regionally and globally).

Workshops & Meetings

HI-MDAP Workshop - April 26-27, 2012

9:00 a.m. – 4:00 p.m.

Hawai'i Imin International Conference Center – Koi Room
1777 East-West Road, Honolulu, Hawai'i 96848

The NOAA MDP sponsored a two-day workshop devoted to updating the HI-MDAP. The primary purpose of the meeting was to capture in the plan all that has taken place across the State since the roll-out in January 2010. The Honolulu Strategy is one of the key outcomes of the Fifth International Marine Debris Conference held in Honolulu in March 2011. See the HI-MDAP 2012-2013 proceedings document for the outcome of this workshop.

Getting Involved

In order for organizations or agencies to participate in implementing the HI-MDAP, four steps must be accomplished:

1. Adopt and agree to the appropriate results chain, finding a fit under a strategy;
2. Develop a site-specific chain for your particular project (listing the resources that you bring to the table);
3. Adopt the metrics and agree to base metrics/indicators on what is in the results chain; and
4. Share your results using the results chain format

HI-MDAP Roll Out and Declaration Signing - January 12, 2010

8:00am-12:00pm

Waikiki Beach Marriott Resort and Spa (2552 Kalakaua Avenue, Honolulu)

The NOAA MDP hosted the Roll Out and Declaration Signing of the first HI-MDAP! The event was a huge success with over 70 elected officials and partners represented in the room - several flying in from the neighbor islands just for this event.

Elected officials who participated:

Honorable James R. “Duke” Aiona Jr. – Lieutenant Governor, State of Hawai‘i

Honorable Mufi Hannemann – Mayor, City and County of Honolulu

Honorable Fred Hemmings – Senator, State of Hawai‘i, District 25, Kailua, Lanikai, Waimanalo, Hawai‘i Kai

Honorable Tom Brower – Representative, State of Hawai‘i, District 23, Waikiki, Ala Moana, Kakaako

Kareen Forissier – Legislative Asst. for the Honorable Pete Hoffman, Hawai‘i County Council, District 9, North and South Kohala

Event Program

**- PARTNERS -
(CONT.)**

- Sierra Club Hawai‘i Chapter
- State of Hawai‘i, Department of Business, Economic Development, and Tourism, Coastal Zone Management Program
- State of Hawai‘i, Department of Business, Economic Development, and Tourism
- State of Hawai‘i, Department of Health, Clean Water Branch, Polluted Runoff Control Program
- State of Hawai‘i, Department of Land and Natural Resources, Division of Aquatic Resources
- State of Hawai‘i, Department of Land and Natural Resources, Division of Boating and Ocean Recreation
- State of Hawai‘i, Department of Land and Natural Resources, Division of Conservation and Resources Enforcement
- State of Hawai‘i, Department of Land and Natural Resources, Division of Forestry and Wildlife
- State of Hawai‘i, Department of Transportation, Harbors Division
- State of Hawai‘i, Kahoolawe Island Reserve Commission
- Surfrider Foundation
- TetraTech EM, Inc.
- The Nature Conservancy
- TSphere Energy
- United Fishing Agency
- University of Hawai‘i Sea Grant College Program
- University of Hawai‘i Marine Option Program
- University of Hawai‘i, Center for Microbial Oceanography: Research and Education
- U.S. Coast Guard
- U.S. Environmental Protection Agency, Region 9, PICO Office
- U.S. Fish and Wildlife Service
- U.S. Navy Region Hawai‘i
- USDA Natural Resources Conservation Service Pacific Islands
- Western Pacific Regional Fisheries Management Council

...and the numerous individuals who take the time to help tackle marine debris.

This event was coordinated by the NOAA Marine Debris Program.
www.MarineDebris.noaa.gov

This event was sponsored in part by the National Marine Sanctuary Foundation.
www.nmsfocean.org

**ROLL-OUT AND
DECLARATION SIGNING**

**HAWAI‘I MARINE DEBRIS
ACTION PLAN**

JANUARY 12, 2010
8:00AM-12:00PM

WAIKIKI BEACH MARRIOTT RESORT & SPA
HONOLULU, HI

- AGENDA -

7:30-8:00am Check-in and continental breakfast

8:00-8:15am Welcome & introduction – Holly Bamford, PhD, director, NOAA Marine Debris Program

8:15-8:45am Hawai'i Marine Debris Action Plan – Kris McElwee, Pacific Islands regional coordinator, NOAA Marine Debris Program

8:45-9:15am Presentation on "Reducing marine debris in the Papahānaumokuākea Marine National Monument" – Scott Godwin, Papahānaumokuākea Marine National Monument

9:15-9:45am Presentation on "Addressing abandoned and derelict vessels in Hawai'i" – Clifford Inn, State of Hawai'i DLNR, Division of Boating and Ocean Recreation

9:45-10:15am Presentation on "Addressing sedimentation and land-based debris effects on coral reefs in He'eia, O'ahu through the Māhūahua 'Ai o Hoi Project" – J. Kanekoa Kukua Shultz, The Nature Conservancy

10:15-10:30am Break

10:30-11:15am Remarks by dignitaries

11:15-11:45am Signing of Declaration of Support

11:45-12:00pm Closing remarks – Holly Bamford, PhD, director, NOAA Marine Debris Program

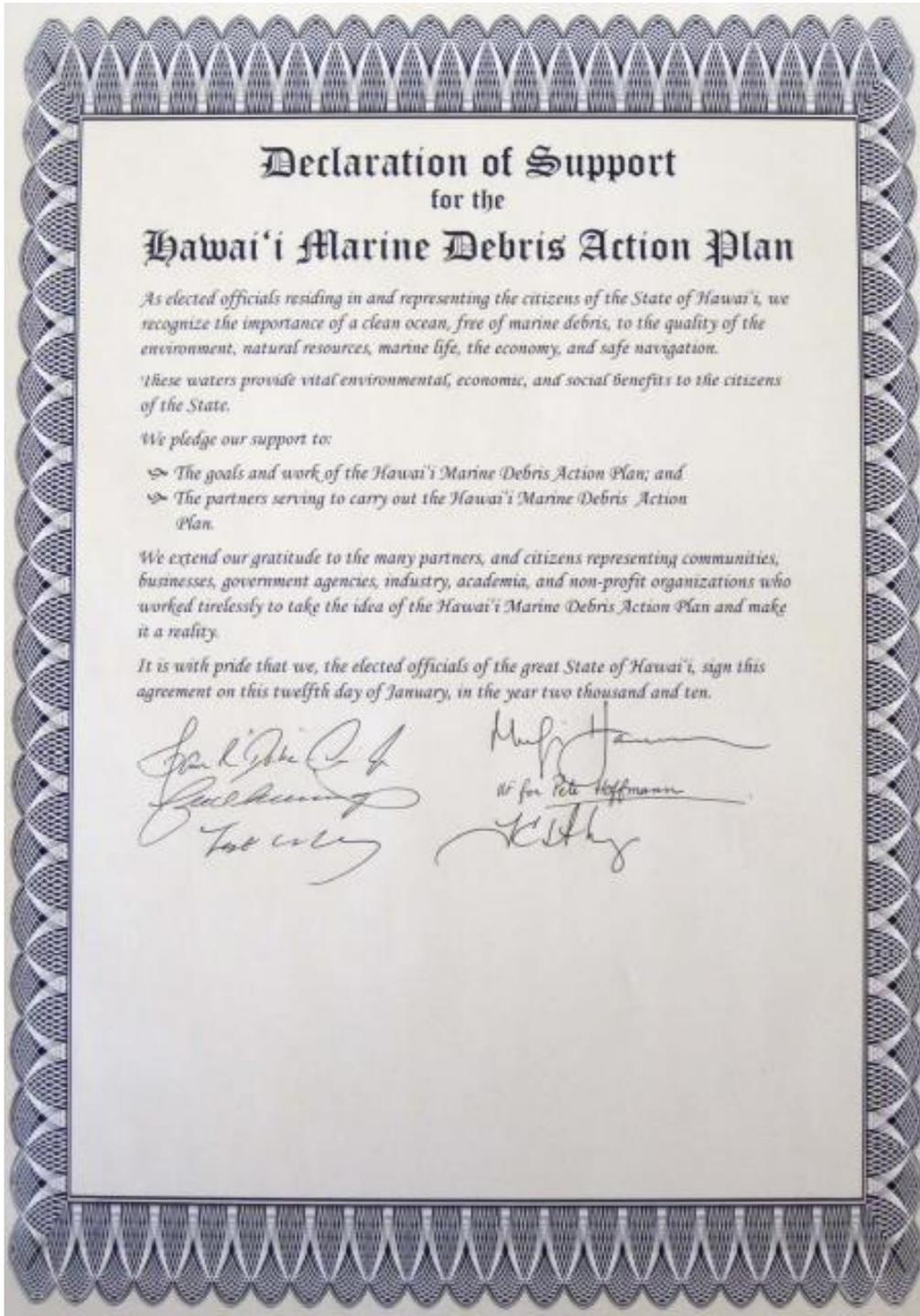
12:00-12:30pm *Media availability*

- PARTNERS -

- Archinoetics
- Beach Environmental Awareness Campaign Hawai'i
- Chris Woolaway and Associates, LLC
- City and County of Honolulu, Department of Parks and Recreation
- City and County of Honolulu, Department of Environmental Services
- Community Work Day Program
- County of Hawai'i, Parks and Recreation, Aquatics
- Covanta Energy
- Enchanted Lake Residents Association
- Environmental Science International, Inc.
- Hanalei Bay Watershed Hui
- Hawai'i and Pacific Islands Ocean Observing System
- Hawai'i Institute of Marine Biology
- Hawai'i Longline Association
- Hawai'i Pacific University
- Hawai'i Wildlife Fund
- Island Divers
- Kaua'i Westside Watershed Council
- Koko'o 'O'iwi
- Kini Beach
- Kupu
- Mālama Maunalua
- Mālama Na 'Apapa
- Matson Navigation
- Maui Reef Fund
- NOAA Fisheries Service, Recreational Fisheries
- NOAA Hawaiian Islands Humpback Whale National Marine Sanctuary
- NOAA Marine Debris Program
- NOAA Office of Law Enforcement
- NOAA Office of National Marine Sanctuaries, Pacific Islands Region
- NOAA Pacific Islands Fisheries Science Center
- NOAA Pacific Islands Regional Office
- NOAA Pacific Services Center
- NOAA PIRO Observer Program
- NOAA Restoration Center
- Oceanic Institute
- Oceanit
- Oikonos - Ecosystem Knowledge
- Pacific Ocean Producers Fishing and Marine
- Papahānaumokuākea Marine National Monument
- PlanSea
- Reef Watch Waikiki
- Sea Turtles International
- Schnitzer Steel Hawai'i Corporation
- Sheavly Consultants

Official Documents of Support

Signed Declaration of Support for the HI-MDAP



This Declaration was signed by (as of 1/12/10):

Honorable James R. “Duke” Aiona Jr., Lieutenant Governor, State of Hawai’i

Honorable Mufi Hannemann, Mayor, City and County of Honolulu

Honorable Fred Hemmings, Senator, State of Hawai’i, District 25, Kailua, Lanikai, Waimanalo, Hawai’i Kai

Honorable Pete Hoffman, Hawai’i County Council, District 9, North and South Kohala (representative signed for)

Mr. Lester Chang, Director of the Department of Parks and Recreation, City and County of Honolulu

Mr. Tim Steinberger, Director of the Department of Environmental Services, City and County of Honolulu

Letter of Support from Mayor Billy Kenoi, County of Hawai'i

William P. Kenoi
Mayor



William T. Takaba
Managing Director

Walter K.M. Lau
Deputy Managing Director

County of Hawai'i
Office of the Mayor

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(808) 327-3602 • Fax (808) 326-5663

MAYOR'S MESSAGE
January, 2010

On behalf of the people of the County of Hawai'i, I am proud to pledge my support to the roll out of the Hawai'i Marine Debris Action Plan, the first of its kind in the nation and the result of tireless work among Hawai'i's partners from across the state.

Marine debris continues to be a challenge in the State of Hawai'i, impacting the state's communities and the livelihood of many citizens who depend on a clean ocean environment for their health and well-being.

The partners who came together to bring this action plan to fruition should be proud of their efforts and I commend them for their past efforts as well as their dedication to the work ahead on this very important issue to the state Hawai'i and the nation.

Aloha,

A handwritten signature in black ink that reads 'Billy Kenoi'.

Billy Kenoi
MAYOR

County of Hawai'i is an Equal Opportunity Provider and Employer.

Media Hits



Hawai'i Marine Debris Action Plan

MEDIA HITS

Hawaii Marine Debris Action Plan Roll-Out Event

January 12, 2010

<p>NOAA Starts Hawaii Marine Debris Plan MSNBC, January 13, 2010 http://www.msnbc.msn.com/id/34833339/ns/local_news-honolulu_hi/</p>
<p>Ocean debris action plan debuts Honolulu Advertiser, January 13, 2010 http://www.honoluluadvertiser.com/article/20100113/NEWS11/1130345/Ocean+debris+action+plan+debuts</p>
<p>NOAA Starts Hawaii Marine Debris Plan KITV.com, January 12, 2010 http://www.kitv.com/news/22221693/detail.html</p>
<p>Lassoing Hawaii's Marine Trash NY Times, DotEarth.com, January 12, 2010 http://dotearth.blogs.nytimes.com/2010/01/12/lassoing-hawaiis-marine-trash/?pagemode=print</p>
<p>For years ocean debris has been collecting in Hawaiian waters... KGMB, HAWAII NEWS NOW AT 6, January 12, 2010</p>
<p>A omprehensive plan aimed at protecting our ocean... KHON, HAWAII AT 6, January 12, 2010</p>
<p>The nation's first marine debris action plan... KITV, ISLAND TV NEWS AT 10, January 12, 2010</p>
<p>The nation's first marine debris action plan... KITV, ISLAND TV NEWS AT 6, January 12, 2010</p>
<p>The National Oceanic and Atmospheric Administration this morning is unveiling... KSSK-FM radio, January 12, 2010</p>
<p>Hawaii implements nation's first marine debris action plan Los Angeles Times (blog), January 13, 2010 http://latimesblogs.latimes.com/outposts/2010/01/hawaii-marine-debris-action-plan.html</p>
<p>Ocean cleanup a critical task Honolulu Star-Bulletin, January 13, 2010 http://www.starbulletin.com/editorials/20100118_ocean_cleanup_a_critical_task.html</p>
<p>Nation's First Marine Debris Action Plan Implemented in Hawaii NOAA NOS Weekly News, January 2010 http://oceanservice.noaa.gov/news/weeklynews/jan10/himdplan.html</p>
<p>NOAA launches plan to combat ocean debris Hawaii News Now - Jan 12, 2010 http://www.hawaiinewsnow.com/Global/story.asp?S=11812178</p>



Hawai'i Marine Debris Action Plan

<p>NOAA Starts Hawaii Marine Debris Plan USA Today, January 12, 2010 http://content.usatoday.com/topics/article/Places,+Geography/States,+Territories,+Provinces,+Islands/U.S.+States/Hawaii/08nTgNTekU5eE/1</p>
<p>Feds develop plan to fight marine debris in Hawaii Honolulu Advertiser/AP Honolulu - Jan 12, 2010 http://www.honoluluadvertiser.com/article/20100112/BREAKING01/100112052/Feds+develop+plan+to+fight+marine+debris+in+Hawaii</p>
<p>A plan aimed at protecting our oceans has been released... WAKE UP 2DAY 7AM, January 13, 2010</p>
<p>A comprehensive plan to protect the ocean and the creatures... WAKE UP 2DAY 6AM, January 13, 2010</p>
<p>A comprehensive plan to protect the ocean and the creatures... WAKE UP 2DAY 5AM, January 13, 2010</p>
<p>It has a new plan to reduce marine debris... Hawaii Public Radio, KHRR-FM, January 13, 2010</p>
<p>NOAA Launches Plan to Combat Ocean Debris Hawaii News Now, January 12, 2010 http://www.hawaiinewsnow.com/Global/story.asp?S=11812178</p>
<p>Feds develop plan to fight marine debris in Hawaii Honolulu Advertiser, January 12, 2010 http://www.honoluluadvertiser.com/article/20100112/BREAKING01/100112052/Feds+develop+plan+to+fight+marine+debris+in+Hawaii</p>
<p>Nation's first marine debris action plan implemented in Hawaii Hawaii 24/7, January 19, 2010 http://www.hawaii247.org/2010/01/19/nation%E2%80%99s-first-marine-debris-action-plan-implemented-in-hawaii/</p>
<p>Marine debris is crippling seas Big Island Weekly, January 20, 2010 http://www.bigislandweekly.com/articles/2010/01/20/read/lifestyle/lifestyle01.txt</p>
<p>Federal government steps in to reduce marine debris Maui Weekly, January 21, 2010 http://www.mauiweekly.com/page/content.detail/id/500929/Federal-government-steps-in-to-reduce-marine-debris.html?nav=17</p>

Press Release Issued by NOAA

January 12, 2010

Nation's First Marine Debris Action Plan Implemented in Hawai'i

Today, NOAA and several partners in Hawai'i announced a comprehensive long-term plan to actively assess and remove plastics, derelict fishing gear, and other human sources of marine debris from coastal waters and coral reefs along the island chain. The plan, a first of its kind for the nation, will be instrumental in protecting the state's coastal communities and marine life from the thousands of pounds of marine debris that wash ashore each year.

"For too long marine debris has marred the natural beauty of our ocean and threatened our marine ecosystem," said Sen. Daniel K. Inouye of Hawai'i. "I have long championed a coordinated effort to mitigate the many tons of debris that suffocate our coral, kill our fish and aquatic mammals and blanket our coastlines. This is a critical issue for our state and I am proud that Hawai'i is taking the lead in finding a solution to this global problem."

For the last two years, numerous governmental, non-governmental, academic, industry, and private business partners from across the state worked alongside NOAA's Marine Debris Program to develop the Hawai'i Marine Debris Action Plan. Building on significant ongoing and past marine debris community efforts, the plan establishes a comprehensive and cooperative framework for marine debris activities and projects across the state to reduce:

- the current backlog of marine debris;
- the number of abandoned and derelict vessels;
- land-based debris in waterways; and
- fishing gear and solid waste disposal at sea

Numerous strategies and activities fall under each of these goal areas, many of them already underway by Hawai'i's marine debris partners. These include debris removal efforts, emergency response, prevention and outreach campaigns as well as increasing research and technology development. Progress will be tracked and measured for each of these areas.

"We've all been working to address marine debris in Hawai'i in our own way for years. It's great to have a plan that we can all contribute to and work together on to tackle marine debris in Hawai'i," said Marvin Heskett, member of the Surfrider Foundation's Oahu Chapter.

"This roll-out demonstrates NOAA's continued commitment to working with partners from across the state of Hawai'i on the issue of marine debris," said David M. Kennedy, acting assistant administrator for NOAA's National Ocean Service. "We are proud to take part in the development of the nation's first marine debris action plan in Hawai'i."

HI-MDAP Final Workshop - October 16, 2009

8:30am - 5:00pm

NOAA Sanctuary Conference Room | 6600 Kalaniana'ole Highway, 3rd Floor, Honolulu, HI 96825

Nearly 30 partners joined in for the last workshop to finalize the HI-MDAP. Everyone's input and assistance in honing and improving the results chains helps to truly create a plan that is not only comprehensive and inclusive, but also dynamic (meaning its strategic actions will be put in motion and the plan itself will not sit on a shelf and collect dust). Mahalo nui loa to those who participated!

Agenda

Objectives:

- Introduce results chains as a framework the action plan
- Review the two-year activity plan
- Invite participants to partner in implementation

8:30 - 8:45	Welcome + Introductions
8:45 - 9:00	Overview of HI-MDAP development
9:00 - 10:00	Introduction to results chains as a planning and evaluation tool
10:00 - 10:15	<i>Break</i>
10:15 - 12:00	Review of conceptual model and results chains for marine debris
12:00 - 1:30	<i>Lunch</i>
1:30 - 2:30	Results Chain Discussion
2:30 - 2:45	<i>Break</i>
2:45 - 4:30	2-Year Activity Plan
4:30 - 5:00	Next steps + Plan implementation and monitoring

HI-MDAP Focus Area Workshops - October 22, November 5 & 14, 2008

Three focus area workshops were held between October and November 2008. Each workshop focused on one or two of the five identified focus areas for the HI-MDAP. Representatives from all sectors participated in these workshops and crafted objectives for each focus area. Information on past and ongoing activities was gathered so that a record of what was done could be compiled and built upon. New actions were then brainstormed and discussed in detail. Feasible priority actions that could

be completed within the next three years were identified. During these meetings, a commitment was made by the group to continue to meet twice a year, implement priority activities, and update the action plan as needed.

10/22/08 - Outreach

11/5/08 - Land-Based Debris Prevention + Beach Cleanup

11/14/08 - Research & Assessment + Reef/In-water Cleanup and Prevention

Hawai'i Marine Debris Workshop - January 16-17, 2008

This workshop brought together 30 representatives from government, academia, nongovernmental organizations, and private businesses working to address the issue of marine debris in Hawai'i. At this workshop, information on marine debris activities and priorities, in both the Main and Northwestern Hawaiian Islands, was discussed. Participants identified marine debris actions in five separate areas:

1. Research & Assessment
2. Outreach
3. Land-based Debris Prevention
4. Beach Cleanup
5. Reef (In-water) Debris Removal & Prevention

From this workshop, partnerships were created and a commitment made to begin the development of a HI-MDAP. The issue of marine debris has been tackled by organizations in a coordinated way around specific activities (e.g., cleanup of derelict fishing gear in coral reef habitats in the Northwestern Hawaiian Islands); however, a coordinated effort and statewide action plan is needed to coordinate priorities and activities across marine debris constituents in Hawai'i.

Photos from HI-MDAP Roll Out Event



Opening by Kitty Courtney, TetraTech EM, Inc.



Welcome by Dr. Holly Bamford, Director, NOAA Marine Debris Program.



History and overview of the Hawai'i Marine Debris Action Plan by Kris McElwee, NOAA Marine Debris Program.



Presentation by Scott Godwin, Papahānaumokuākea Marine National Monument.



Presentation by Clifford Inn, Division of Boating and Ocean Recreation, Department of Land and Natural Resources.



Presentation by J. Kanekoa Kukea-Shultz, The Nature Conservancy.



Signing of the Declaration of Support for the HI-MDAP.

Presentations from HI-MDAP Roll Out Event

(not included below: presentation on *Fostering an Active Boating Community in Hawai'i* by Clifford Inn, State of Hawai'i Department of Land and Natural Resources, Division of Boating and Ocean Recreation)

A Review of Marine Debris Removal Activities in the Papahānaumokuākea Marine National Monument

By: Scott Godwin, Papahānaumokuākea Marine National Monument



Hawai'i Marine Debris Action Plan

A Review of Marine Debris Removal Activities in the Papahānaumokuākea Marine National Monument

Scott Godwin



Hawai'i Marine Debris Action Plan

Project(s) overview

- Historic Efforts (prior to 1996)
 - USFWS and NOAA-NMFS
- Recent Efforts (1996-present)
 - NOAA-NMFS-CRED and USFWS
 - State of Hawaii DLNR-DAR
 - USCG
 - Partners



Hawai'i Marine Debris Action Plan

Project(s) description

- Historic Efforts (pre-1996)
 - Removal and cataloguing by USFWS and NMFS marine mammal research program





Hawai'i Marine Debris Action Plan

Project(s) description

- Recent Efforts (1996-present)
 - NOAA-PIFSC-CRED
 - 1996-2000 – USCG + partners
 - Removal, Map Entanglement Areas, DFG Ident., Alien Transport
 - 2001-2005 – Contract vessels + USCG
 - Removal, Removal, Removal!!
 - 2006-present – Maintenance mode + USCG
 - Reduce Annual Accumulations, Alien Transport



Hawai'i Marine Debris Action Plan

Project(s) description

- NOAA-PIFSC-CRED + USFWS + USCG
 - NOAA + USFWS 1996 – 2009
 - **Cumulative Removal of 585.70 MT**
 - USCG 2005-2009
 - **Cumulative Removal of 53.75 MT**





Hawai'i Marine Debris Action Plan

Midway Marine Debris Team

Scientific Project Team

Chris Ribic – lead
Seba Sheavly
Barry Christensen, Matt Brown,
& John Klavitter
Dave Rugg
Kelly Polich

Field & Volunteer Training Team

Lindsay Yates – lead
Seba Sheavly
Chris Woolaway
Chris Ribic
Dave Rugg
Barry Christensen, Matt Brown,
& John Klavitter

Debris Removal/Disposal Project Team

Chris Woolaway – lead
Barry Christenson, Matt Brown,
& John Klavitter
Lindsay Yates
Howard Wiig, DBET

Education Project Team

Seba Sheavly – lead
Chris Woolaway
Kelly Polich
Andy Collins
Kris McElwee



Hawai'i Marine Debris Action Plan

HI-MDAP

- Activities Relate to HI-MDAP Strategy 1.3
 - Backlog of Marine Debris Reduced by 2020



Hawai'i Marine Debris Action Plan

Acknowledgements



NOAA National Marine Sanctuaries
NOAA research vessels *Oscar Elton Sette* and *Hi'ialakai*
NOAA Marine Debris Program



NOAA Coral Reef Conservation Program
NOAA Coral Reef Ecosystem Division
NOAA Office of Response and Restoration



State of Hawaii Department of Land and Natural Resources,
Division of Aquatic Resources and Division of Forestry and Wildlife



Pacific Remote Islands National Wildlife Refuges
Midway Atoll Special Management Area



United States Coast Guard

Addressing sedimentation and land-based debris effects on coral reefs in He'eia, O'ahu through the Māhuahua 'Ai o Hoi Project

By: J. Kanekoa Kukea Shultz, The Nature Conservancy



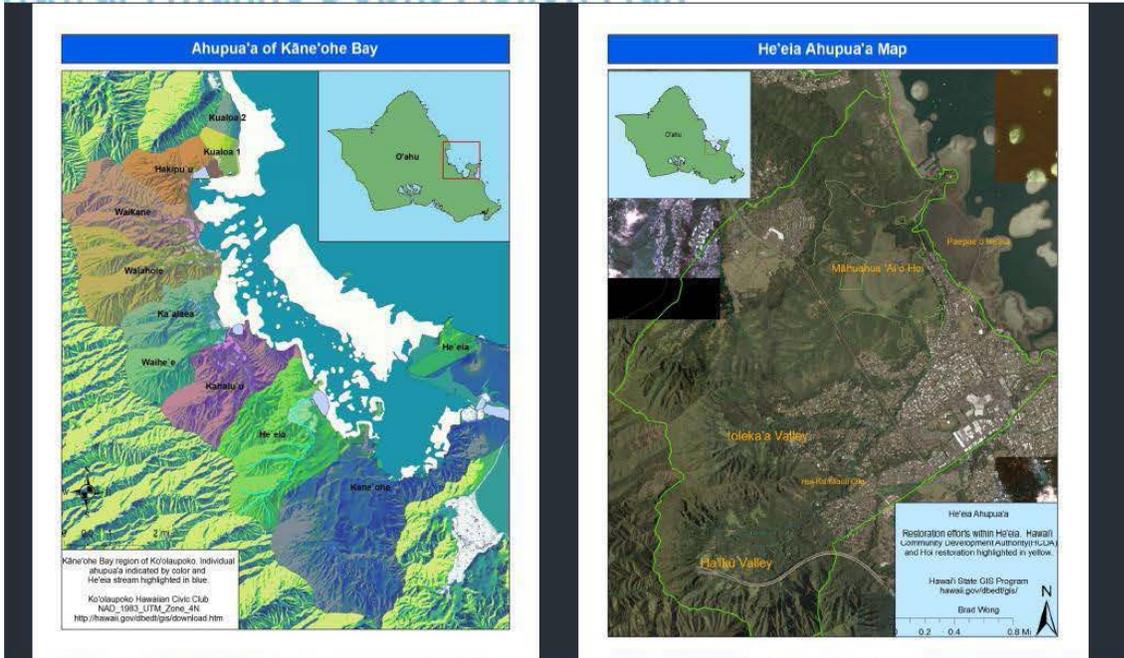
Hawai'i Marine Debris Action Plan

Mahuahua Ai o Hoi

Heeia Wetlands Restoration
A Hawaiian Ahupuaa



Hawai'i Marine Debris Action Plan



Hawai'i Marine Debris Action Plan

Project(s) overview

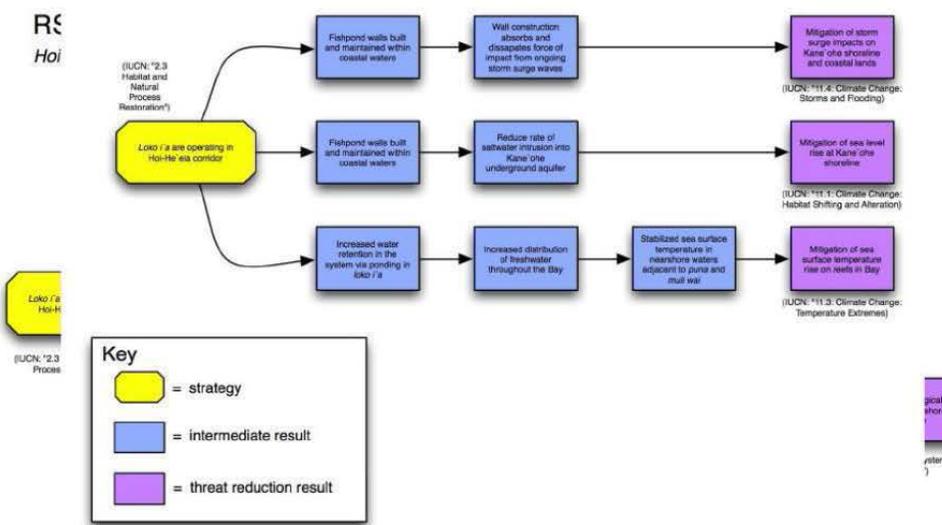
- Cleaning stream water from the mauka sections through the use of Loko ia Fishponds and Taro Patches.
- Removal of LBP, invasive species.
- Community education.
- Community awareness.
- Creation of jobs to alter unsustainable uses.
- Perpetuation of Culture

Image U.S. Geological Survey
 Image © 2009 TerraMetrics
 Image © 2009 Tele Atlas

Imagery Date: Aug 2004 4 Q 623225.24 m E 2370699.95 m N elev 5 m Eye alt 1.84 km



RST - CLI results chain
Hoi-He'eia Corridor, Kaneohe Bay
 1st draft: 01-15-09





Hawai'i Marine Debris Action Plan



in Hawai'i
the environment *is* the economy

- Without the removal of debris (purification) in our streams and reefs we will be unable to grow our crops, our kupuna will not come back, we will lose our ability to interact with them, and our keiki will not grow.
- We will mitigate marine debris effects, grow food and enhance our near-shore waters using flood pulse mitigation via fishpond strategies



Hawai'i Marine Debris Action Plan

- Kanekoa Kukea Shultz
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- Brad Wong
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- Mahalo
Koolaupoko Hawaiian Civic Club
HCDA, NOAA, HCF, UH
Koolau Foundation, Paepae o Heeia
Heeia and Kaneohe Ohana





Penny Pritzker
United States Secretary of Commerce

Dr. Kathryn D. Sullivan
Under Secretary of Commerce for Oceans and Atmosphere

Dr. Russell Callender
Acting Administrator, National Ocean Service