

## EPA's Pacific Southwest Strategic Plan for Coral Reefs

Half of all coral in the U.S. is located in EPA's Pacific Southwest region. Hawaii (including the remote Northwest Hawaiian Islands), American Samoa, Guam, the Northern Mariana Islands, and U.S. possessions such as Wake, Johnston, and Palmyra Atolls, are all home to abundant coral. In addition, the U.S.-affiliated former Trust Territories of Palau, Marshall Islands, and Micronesia are renowned for the beautiful coral reefs they depend upon for fisheries, recreation, and coastal protection.

Coral reefs have been significantly degraded over the past 25 years. In recognition of the threat, National Oceanic and Atmospheric Administration (NOAA) released a [proposal](#) in December 2012 to list 66 species of coral under the Endangered Species Act. The Pacific is home to 59 of those species. Land-based pollution (i.e., solid and hazardous waste, sediment, nutrients, pathogens, pesticides), overfishing, coastal construction, and invasive species are the key threats in the Pacific.

Just as EPA has targeted estuarine habitats for protection in most coastal states, coral reefs are the marine ecosystem of concern for Pacific Island states and territories. Coral reefs protect coastlines from ocean storms, support significant fisheries and biodiversity, provide sand for beaches and rock for construction, attract people for tourism and recreation, are sources of new medicines, and are integral to island traditions, economies, and cultures. Adapted for life in warm, clear, low-nutrient waters, coral reefs are sensitive to pollution and other human-caused disturbances.

EPA's Pacific Southwest coral reef strategy directs existing tools and resources to focus on the protection of coral reefs. The plan's key elements are to:

- **Advance the conversation.** Increase the visibility of coral reefs, including threats and opportunities to protect coral reefs, with the public, the state of Hawaii, and the U.S. Pacific Island territories, as well as within EPA.
- **Provide leadership on the link with climate change.** Highlight the risks and impacts to coral reefs in national discussions of climate change and through the implementation of EPA programs.
- **Use the Clean Water Act and other authorities.** Direct existing EPA authorities, grants, and technical assistance to improve protection of coral reefs, especially in controlling sources of land-based pollution that impact coral reefs.
- **Work together.** Coordinate, support, and leverage efforts with state, territory, federal, and other partners to protect coral reefs.

**By 2014, EPA Region 9 will take the following actions to protect, enhance, and restore coral reefs in coastal waters of Hawaii and the Pacific Islands:**

### **Regional actions**

- Increase visibility of coral reef issues within EPA's Pacific Southwest region, and work with other EPA regions where coral reefs are present.
- Coordinate within EPA to ensure regional and national policies and guidance (e.g., climate change plans, nonpoint source guidance) are harmonized with coral reef protection efforts.
- Continue participation in the [U.S. Coral Reef Task Force](#) (CRTF) and ongoing coral programs of the local jurisdictions.
- Participate in the Pacific Regional Planning Body, and integrate coral reef protection into the President's National Ocean Policy.
- Coordinate with the appropriate non-federal environmental organizations in the Pacific region.
- Provide technical assistance in coordination with the State Department to ensure nations supporting U.S. interests and infrastructure in the Pacific avoid impacts to coral reef resources when building projects with U.S. funding.

### **Programmatic actions**

#### **Climate change impacts and adaptive management**

- Incorporate impacts of climate change and elevated carbon dioxide levels on coral ecosystems, including coral bleaching and ocean acidification, in EPA regional and national climate change policies.
- Advance EPA research efforts related to **climate change and coral reefs**, including planning the 2014 Honolulu workshop on climate change adaptation planning for coral reef managers.
- Incorporate coral reef ecosystems in the EPA Pacific Southwest region's climate change adaptation implementation plan.

### **Water programs**

- Apply EPA authorities, grants, and technical assistance to interagency coral protection efforts.
  - Consult annually with local jurisdictions to identify local priority coral reef concerns to better understand where EPA can play a role.
  - Participate in the CRTF meetings and working groups on watersheds and coral mitigation.
  - Participate in the Hawaii Coral Reef Working Group quarterly meetings to direct resources and provide technical assistance to Hawaii's Coral Program.
  - Build capacity within local water quality and coral monitoring programs.
  - Guam, CNMI, and American Samoa have completed water quality and coral condition monitoring for reef flats using a probabilistic design. EPA will provide training for Hawaii and the Pacific Islands to build local capacity for statistical

analyses of probabilistic data sets. The training will assist the islands in preparation of final monitoring reports that summarize the condition of their waters and reefs, and contribute to a synthesis of Pacific reef flats.

- Provide funding (e.g., state/tribal/local government wetlands grant) and technical assistance to Hawaii's Coral Reef Assessment and Monitoring Program at the University of Hawaii.
- Participate in the CRTF and multiagency efforts to improve coral reef assessment and mitigation for dredge and fill projects.
  - Work with U.S. Army Corps of Engineers (USACE) to approve the first coral reef mitigation program (bank or in-lieu fee) to restore coral reefs in Hawaii.
  - Review and provide comments on USACE policies for coral assessments, coral growing on artificial substrates, and dredging impacts to corals.
  - Collaborate with CRTF Mitigation Science workgroups in drafting of a Handbook for Coral Mitigation and Injury Response.
- Improve stormwater management and protection of coastal waters.
  - Reissue Saipan's Municipal Separate Storm Sewer System (MS4) permit and consider new provisions for protection of coastal waters and coral reefs.
  - Review Guam MS4 applications from the U.S. Navy and, if available, Guam Department of Public Works in preparation for issuing proposed MS4 permits.
  - Provide technical assistance to Hawaii Department of Health (DOH) to renew existing NPDES stormwater MS4 and general permits, improve long-term stormwater controls and better protect coastal waters and coral reefs. Assist Hawaii DOH and Honolulu with new Low Impact Development, infrastructure retrofit, and trash reduction requirements.
  - Provide a technical assistance workshop for the County of Maui, which will cover the topic of "Green Streets" and how they can be used as a tool for stormwater management and improvements to water quality.
- Improve aquatic life protections in NPDES discharge permits.
  - Provide technical assistance to Hawaii DOH to improve protections for coral reefs and aquatic life in NPDES permits. Work with Hawaii DOH to implement more stringent water quality based nutrient limits for existing NPDES dischargers and to implement a statistical approach to evaluate whole effluent toxicity data.
- Continue to monitor the closure of large capacity cesspools (LCCs) in Hawaii to protect groundwater, adjacent coastal waters, and coral reefs through targeted enforcement actions and state-wide compliance assistance efforts. EPA anticipates 100 LCCs will be closed by the end of fiscal year 2013. EPA will focus efforts on priority watersheds in Maui, Waimanalo, and Hanalei, and priority sectors such as restaurants and multi-unit residential buildings.
- Support jurisdictional partners and the CRTF in watershed management efforts at priority watersheds, including co-lead responsibilities to direct planning and implementation activities at West Maui, Hawaii and Faga'alu, American Samoa.
  - **West Maui, Hawaii**
    - Participate in monthly interagency watershed working group meetings to direct planning and implementation activities.

- Target CWA §319 funds toward implementation of at least one project identified in the Wahikuli-Honokowai watershed plan.
- Improve human health and aquatic life protection by ensuring full UV disinfection of wastewater from the Maui County's Lahaina Wastewater Reclamation Facility by December 2013.
- Obtain and make available new information from the University of Hawaii and Hawaii DOH on the fate and transport of wastewater from injection wells at Lahaina. Issue final tracer study in summer 2013 and Hawaii DOH data on seep and ambient water quality. Consider all findings in EPA's future permit decisions for Lahaina's injection wells.
- **Faga'alu, American Samoa**
  - Provide technical assistance to American Samoa in their leadership and coordination role in Faga'alu.

### **Marine debris and zero waste programs**

- Marine debris: Implement EPA's marine debris strategy for Hawaii and Pacific Islands to minimize impacts on coral reefs. For more information on EPA's marine debris strategy, see: <http://www.epa.gov/region9/marine-debris/index.html>
- Zero waste: Partner with local jurisdictions to measure and increase recycling rates, reduce illegal dumping, and reduce amounts of plastic that enter the water. Share recent container recycling and single-use bag ban legislation among local jurisdictions.

### **Environmental reviews**

- Identify impacts to coral reef resources when EPA Region 9 reviews NEPA documents, including Environmental Impact Statements and Environmental Assessments. Consider land-based development or projects that may increase sediment or pollution loads in runoff to the marine environment. Consider adequacy of impact avoidance, compensatory mitigation, and restoration efforts.
  - Collaborate with Department of Defense, Government of Guam, and other federal and territory agencies to minimize the environmental impacts of an increased military presence.
  - Review the Military Buildup Supplemental Environmental Impact Statement for Guam and focus on potential impacts from stormwater runoff, recreation, operations, and wastewater infrastructure.
  - Continue work to identify wastewater and stormwater infrastructure improvement needs, and prioritize any external funding that may become available to address those needs.

### **Enforcement programs**

- Include consideration of impacts to coral in prioritizing compliance inspections and enforcement actions in Hawaii, American Samoa, CNMI, and Guam.
  - Work with Hawaii DOH to continue inspection of municipal, industrial, and construction stormwater sites in Hawaii, monitor non-compliance issues, and ensure that pollutant discharges protect coastal water quality.

- Review City/County of Honolulu's Waimanalo Gulch Landfill monitoring reports and detention basin study submitted under the 2011 Administrative Order to ensure the adequacy of landfill stormwater controls.
- Review Hawaii Department of Transportation (HDOT) stormwater consent decree deliverables and environmental management system. Work with Hawaii DOH to issue revised stormwater MS4 permit for Hawaii Department of Transportation.

### **Pesticide programs**

- Explore approaches for including coral reefs in assessments of proposed uses of pesticides that could result in levels harmful to reef environments.
- Work with Hawaii and the Pacific Island Pesticide Programs to learn whether, and to what extent, pesticides known to be highly toxic to marine/estuarine organisms are being used in such a way that they may be transported to coral reefs. Collaborate with grant recipients to develop and conduct educational outreach to communities regarding the risks posed by pesticides to coral reefs.

### **Cross-programmatic**

- Update EPA's website list of EPA grants available to protect coral reefs (e.g., wetlands, nonpoint source, CWA §106, State Revolving Fund, environmental justice).
- Increase coral reef prominence in the media by making the connection between EPA actions and coral reefs, where appropriate.