

Aquatic Invasive Species Response Team (AIST): Highlights

- Over 1,600 worker hours (or 2 1/2 months for a crew of 4) were used on the mechanical invasive algae suction device (“Supersucker”) in Kaneohe Bay, removing smothering invasive algae off coral.
- “Herbivory Enhancement Areas” on Maui will be put into place by late 2008/early 2009 to help protect native marine species that are important grazers of macroalgae, which has overgrown and is smothering some of Maui coral reefs.
- Partnership with UH-Manoa researchers working to restore native sea grass beds in Maunalua Bay and Waikiki.
- Over 650 recreational vessel hulls inspected to help prevent inter-island movement of potential AIS.

HISC support to AIST funds a supervisor, six technicians and two interns based on Oahu and the Big Island. HISC funding provided \$395,000 to AIST and those funds were leveraged to raise an additional \$504,100. In September 2008, the HISC approved \$411,400 to support the AIST’s work in FY08-09. These funds are being used for a wide variety of AIS projects that are outlined in the State of Hawaii Aquatic Invasive Species Management Plan.

Implementation of the priority response and control actions of the Aquatic Invasive Species Plan

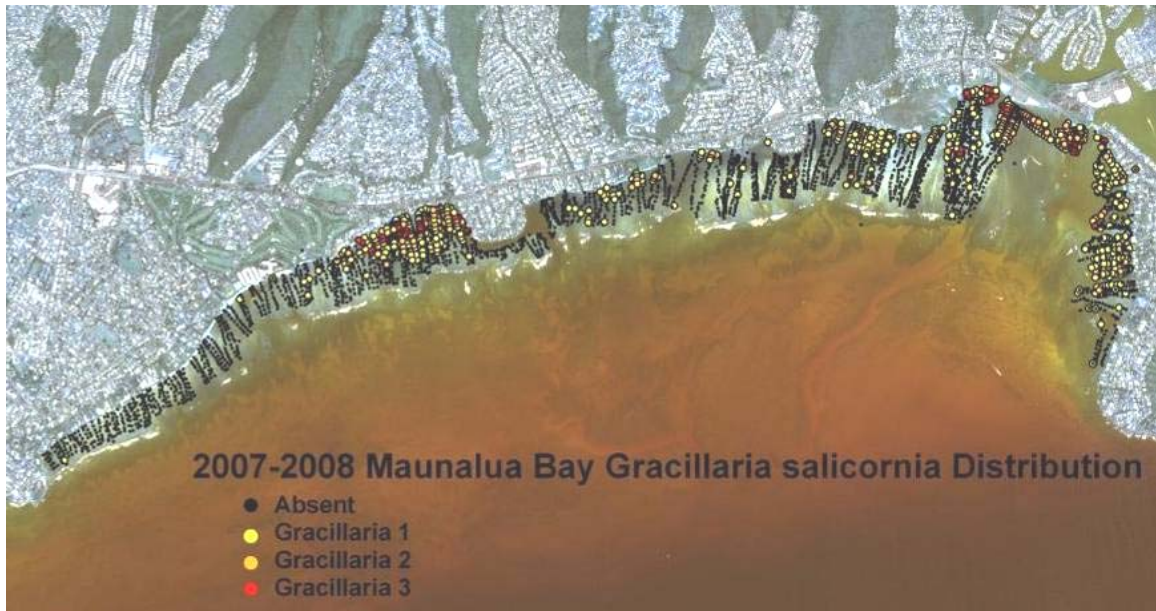
- Integrate knowledge from efforts throughout Hawaii, nationally and internationally, when dealing with specific species, and develop appropriate species-specific plans in relation to both long-term containment and eradication when feasible. In November 2007, a researcher was hired to compile a literature review of chemical, mechanical and biological methods used locally, nationally and internationally and then identify the most promising methods for control of priority AIS in Hawaii. The draft of this document has been completed. The researcher will also work with other organizations including state, federal and nongovernmental organizations (NGOs) to build the necessary working relationships to obtain any necessary permits, necessary training etc. to utilize methods that have the most potential for specific Hawaii AIS.
- Continue to develop and implement a comprehensive approach to remove and control the spread of non-native algae by utilizing mechanical removal, native grazers and the reintroduction of native species.
- In 2008, over 1,600 worker hours (or 2 1/2 months for a crew of 4) were used on mechanical invasive algae suction device (“Supersucker”) in Kaneohe Bay, removing smothering invasive algae off coral. AIST also has a project in partnership with UH-Manoa studying the effect of invasive algae removal with the Supersucker in enhancing the growth of native sea grass beds in Waikiki. These beds are important feeding grounds for endangered green sea turtles. In addition, the AIST continued with extensive surveys to document the current distribution of invasive algae around Oahu. This is critical information when

trying to determine the most comprehensive strategy for controlling the algae.

These surveys covered approximately 4.5 km² in Maunaloa Bay, and 7 km² in Kaneohe Bay. Pearl Harbor was also resurveyed, in conjunction with the Bishop Museum, to compare algae distribution from 10 years ago. Control work continues on the following species: Control work done on *Gracilaria salicornia*, *Kappaphycus/Eucheuma* sp., *Avrainvillea amadelpha*, *Hypnea musciformis*, and *Acanthophora spicifera*.

- Further investigate the use of native grazers, such as urchins, to assist in the control or elimination of invasive algae.
- Position will be hired with HISC funds in late 2008/early 2009 to culture urchins and work with the Supersucker for field trials to study if the combination of mechanical removal and increased native herbivory can control the biomass of invasive algae on some patch reefs in Kaneohe Bay.
- Explore the need and feasibility of protection for species that are being used as controls for invasive species. Herbivory enhancement area on Maui – A DAR study entitled “Fish Habitat Utilization Study” conducted fish and habitat studies at all of Hawaii’s Marine Life Conservation Districts as well as nearby reefs which were open to fishing. The study found a strong correlation between the biomass of fish and the amount of macroalgae. Specifically, reefs which had large numbers of herbivorous fish had very little or no macroalgae, and reefs that were closed to fishing tended to have larger stocks of herbivorous fish. So an “Herbivory Enhancement Area” on Maui has been proposed and is expected to go into effect by late 2008 or early 2009. This area will begin at Kekaa fronting the Sheraton Hotel and extend around Honokowai Point to the southern Edge of Honokowai Beach Park. Data gathered from this project will be used to evaluate the potential of protecting herbivorous species in other areas that have been severely impacted by invasive algae.
- Identify possible vectors and pathways of AIS introductions into and throughout Hawaii and assess the risks and impacts. Under the direction of the DAR Hull Fouling and Ballast Water Coordinator, AIST is performing inspections of hulls of recreational vessels. In 2008, AIST conducted approximately 650 inspections and as well as 50 face-to-face surveys of boat owners to assess hull husbandry practices, and the typical number of trips that the owners make either intra- or inter-island. This data will be used to construct a risk assessment to determine the threat posed by hull-fouling organisms being transported to different locations on recreational vessels.
- Number and names of species, habitats, ecosystems, agricultural, and managed areas protected because of control efforts.
- These control efforts by the AIST are protecting coral habitat (one of the most productive and biologically diverse habitats in the world) in Kaneohe Bay, Maunaloa Bay, and on Maui as well as statewide by working to restrict the movement of potential AIS. In addition, vital grass beds, which serve as nursery grounds for many juvenile fish and invertebrates, as well as feeding grounds for

sea turtles, are being protected.



Map shows distribution and abundance of invasive alga Gracillaria salicornia in Maunalua Bay (red and orange show heaviest infestations).



An Aquatic Invasive Species Team technician determines the level of fouling on a recreational sail boat.