

Following are summaries of scientific information on invasive marine species in Hawai‘i.

Distribution and reproductive characteristics of nonindigenous and invasive marine algae in the Hawaiian islands

Jennifer E. Smith, Cynthia L. Hunter, Celia M. Smith

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Quantitative and qualitative surveys were conducted on five of the main Hawaiian Islands to determine the range of non-native algae and its impact on Hawaii’s nearshore ocean. The study mentions how increased discharge of land-based pollutants coupled with overfishing of plant-eating fish can lead to an overgrowth of algae that kills coral and negatively impacts fishes that depend on reefs for food, habitat and shelter. It says the introduction of non-native algae in Hawaii is a “devastating issue” for nearshore ecosystems. The authors state that O‘ahu appears to be most heavily impacted by alien algae, with West Maui following closely behind. They explain that of most concern are the south and southwestern shores of all islands excluding Hawai‘i, which is the least impacted by alien algae of the main islands. In general, “sites with low topographic complexity, low herbivore abundance, and high terrestrial nutrient input seem to be most at risk.” The study describes the five most common alien algae species in Hawaii, including information on how they were introduced, where they are found today, their ability to reproduce and spread, and how they are affecting the marine ecosystem. The species’ distributions were mapped for the first time to provide a guide for future monitoring programs, and information on reproductive characteristics provides insights for management and eradication programs. Contact: Jennifer E. Smith, jsmith@nceas.ucsb.edu

A Guidebook of Introduced Marine Species in Hawaii

Edited by L. G. Eldredge and C. M. Smith

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This guidebook on non-native marine species that have been introduced to Hawaiian waters describes key species, their habitat, their distribution areas, and their impact on the environment. It describes the threat they pose to native species, including competition for food, introduction of new diseases, and an overall disruption in the natural functioning of the ecosystem. The introduction to the guidebook provides useful statistics from the Hawaii Biological Survey at the Bishop Museum (from year 1999 tallies), such as, “The total number of marine and brackish water alien species in the Hawaiian Islands is 343, including 287 invertebrates, 24 algae, 20 fish, and 12 flowering plants.” It goes on to describe how these alien species arrive to the isolated archipelago: “The greatest number of introduced marine invertebrates have arrived to Hawaii through hull fouling, but many have also arrived with solid ballast and in ballast water. The nonindigenous invertebrate species in the Hawaiian Islands are primarily of Indo-Pacific/ Philippines Islands region origin. A surprising number of species from the tropical western Atlantic/Caribbean region have invaded Hawaii as well.” Contact: Celia Smith, celia@hawaii.edu