



Bibliographic Catalogue of the Marine Benthic Algae in the Papahānaumokuākea Marine National Monument (Northwestern Hawaiian Islands)

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Abstract

The algal bibliographic catalogue of the Papahānaumokuākea Marine National Monument (PMNM) is based on previously published records for the 10 northwestern islands, atolls and shoals in the Hawaiian Archipelago, and includes, aligned from northwest to southeast, Kure Atoll (90 species), Midway Atoll (123 species), Pearl & Hermes Atoll (74 species), Lisianski Island including Neva Shoals (52 species), Laysan Island (131 species), Maro Reef (79 species), Gardner Pinnacles (75 species), French Frigate Shoals including La Pérouse Pinnacle (173 species), Necker Island (118 species) and Nihoa Island (33 species). The first section (I. Classification) provides a listing of classes, orders, and families of the 148 genera reported from the PMNM. The second section (II. Species-Reference Index) provides an alphabetized listing of the 335 algal species under the four Phyla, i.e., Cyanobacteria (18 species), Rhodophyta (198 species), Ochrophyta (45 species) and Chlorophyta (74 species) with the applicable reference citations for each island, atoll or shoal. Brief notes are provided, when appropriate, for selected species. The third section (III. Island-Reference Index) provides a chronological listing of all published algal references for each respective island, atoll or shoal. The Reference section contains the complete citation for each reference.

Introduction

The need for an updated bibliographic catalogue of the marine benthic algae for the Papahānaumokuākea Marine National Monument (PMNM) based on current species names associated with each of the 10 northwestern islands, atolls or shoals in the Hawaiian Archipelago seemed warranted with the increase in algal collections over the past decade. The recent algal collections were obtained during the annual Reef Assessment and Monitoring Program (RAMP) cruises to the PMNM by the U.S. National Oceanic and Atmospheric Administration (NOAA) PMNM and by NOAA Pacific Island Fisheries Science Center's Coral Reef Ecosystem Division (PIFSC-CRED) in alternating years. Many algal collections from the PMNM were made which resulted in publications (see Reference section) after the release of the comprehensive Hawaiian algal floras by Abbott (1999) and Abbott & Huisman (2004).

The PMNM algal bibliographic catalogue is patterned after the recently published Central Polynesia algal bibliographic checklist (Tsuda & Walsh 2013) which excluded the Hawaiian Islands and the French Polynesian Islands. The 10 islands, atoll and shoals which are aligned northwest to southeast in the Hawaiian Archipelago encompass an area of 360,000 km² and include Kure Atoll, Midway Atoll, Pearl & Hermes Atoll, Lisianski Island including Neva Shoals, Laysan Island, Maro Reef, Gardner Pinnacles, French Frigate Shoals including La Pérouse Pinnacle, Necker Island and Nihoa Island (Figure 1).

The objectives of this bibliographic catalogue were (1) to provide a listing of marine benthic algae based on past references, thus far, reported from the PMNM utilizing their currently accepted species names, (2) to incorporate all applicable references which reported marine algae from the PMNM in one source, and (3) to identify the specific islands, atolls or shoals where the algae were found. The bibliographic catalogue mainly serves as a convenient tool to access information on what is presently known of marine benthic algae documented from an array of islands, atolls and shoals in the isolated Hawaiian Archipelago in the northern Pacific Ocean. It was not the intent to locate, re-examine and personally verify the identity of the originally cited specimens. Some re-examinations of specimens were conducted in Abbott (1999), Abbott & Huisman (2004) and by the present author when specimens were available in *Herbarium Pacificum* (BISH). A few species names, unless relegated as synonyms or corrected in subsequent publication(s) or here as misapplied names, remain listed as originally cited by the author(s).

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