

Peer Review Report
for the
Draft General Status Assessment of Indo-Pacific Reef-building Corals
&
Draft *Pocillopora meandrina* Status Review Report

February 2020

Prepared By:
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Honolulu, HI

Peer Reviewers:

Dr. Scott Heron, James Cook University, Townsville, Australia

Dr. Mark Eakin, NOAA Coral Reef Watch, Silver Spring, MD

Dr. Jean Kenyon, US Fish & Wildlife Service (retired), Honolulu, HI

Introduction

Peer review was conducted in late 2019 by three PhD-level reef coral subject matter experts on the following draft reports developing by NMFS/PIRO for the 12-month finding for *Pocillopora meandrina*: (1) General Status Assessment of Indo-Pacific Reef-building Corals (GSA), and (2) *Pocillopora meandrina* Status Review Report (SRR). The peer reviewers were:

1. Dr. Scott Heron. Dr. Heron is a coral reef scientist specializing in coral bleaching, coral disease, reef resilience, and conservation management, within the context of climate change. He is a professor in physics at James Cook University in Cairns, Australia. He has worked for the NOAA Coral Reef Watch program and the UNESCO World Heritage Centre.
2. Dr. Mark Eakin. Dr. Eakin is a coral reef scientist specializing in the impact of climate change and other disturbances on coral reefs. He is the Coordinator of NOAA's Coral Reef Watch program, an effort focused on the monitoring of coral reef ecosystems through satellite, in situ, and paleoenvironmental observations.
3. Dr. Jean Kenyon. Dr. Kenyon is a coral reef scientist specializing in coral reef monitoring, coral reproduction, and coral reef community structure. She led research programs at the Coral Reef Ecosystems Division of the NMFS Pacific Islands Fisheries Science Center, and the USFWS Pacific Islands National Wildlife Refuge Complex, both in Honolulu.

The peer reviewers were asked to review the two draft reports, and provide peer review by answering the following 6 questions provided in the Terms of Reference:

1. In general, do General Status Assessment and Status Review Report include and cite the best scientific and commercial information available on the species, its biology, stock structure, habitats, threats, and risks of extinction?
2. Are the scientific conclusions factually supported, sound, and logical?
3. Where available, are opposing scientific studies or theories acknowledged and discussed?
4. Are uncertainties assessed and clearly stated?
5. Are the methods used for the Extinction Risk Assessment valid and appropriate?
6. Are the results and conclusions of the Extinction Risk Assessment supported by the information presented?

Specific Comments: The peer reviewers were also given the option of providing specific comments within the text of the reports via track changes or handwritten comments.

The resulting peer reviews are summarized below.

Peer Reviews¹

Reviewer #1:

1. In general, do General Status Assessment and Status Review Report include and cite the best scientific and commercial information available on the species, its biology, stock structure, habitats, threats, and risks of extinction?

Yes, both documents are very thorough and provide copious citations that demonstrate extensive research.

2. Are the scientific conclusions factually supported, sound, and logical?

Yes, in both documents the scientific conclusions derive logically from the presented evidence.

3. Where available, are opposing scientific studies or theories acknowledged and discussed?

*Yes, in both documents. For example, in the *P. meandrina* SSR, studies showing different responses to bleaching from different ecoregions are presented.*

4. Are uncertainties assessed and clearly stated?

*Yes, in both documents. For example, in the *P. meandrina* SSR, uncertainty in both taxonomic classification and field identification is clearly acknowledged many times. Uncertainty in future*

¹ Reviewers are not named or listed in the same order as in the Introduction in order to preserve anonymity.

changes in ocean circulation and tropical storms is acknowledged. These uncertainties are factored into conclusions. The role of uncertainty in assessing extinction risk by the Extinction Risk Assessment Team members is clearly explained.

5. Are the methods used for the Extinction Risk Assessment valid and appropriate?

The methods used are in accordance with “Guidance on Responding to Petitions and Conducting Status Reviews under the Endangered Species Act” (NMFS 2017a). In this regard they are valid, and in my judgment they are also appropriate. Terms that were somewhat ambiguous to ERA Team members were clarified.

6. Are the results and conclusions of the Extinction Risk Assessment supported by the information presented?

Yes, the evidence and logic that support the results and conclusions are clearly presented in detail.

Specific Comments:

GSA: Reviewer #1 added about a dozen suggested revisions and comments in track changes to the GSA. All suggested revisions were incorporated. Nearly all the comments were addressed by revising the text.

SRR: Reviewer #1 added about two dozen suggested revisions and a handful of comments in track changes to the SRR. All suggested revisions were incorporated. Nearly all the comments were addressed by revising the text.

Reviewer #2:

1. In general, do General Status Assessment and Status Review Report include and cite the best scientific and commercial information available on the species, its biology, stock structure, habitats, threats, and risks of extinction?

Yes. Where potentially of use, some additional references have been provided for consideration by the author.

2. Are the scientific conclusions factually supported, sound, and logical?

Yes.

3. Where available, are opposing scientific studies or theories acknowledged and discussed?

The documents (GSA and SRR) provide a balanced and objective review of literature and conditions of Indo-Pacific reefs.

4. Are uncertainties assessed and clearly stated?

Yes.

5. Are the methods used for the Extinction Risk Assessment valid and appropriate?

Yes. The design of the assessment is effective to discern the required outcome.

6. Are the results and conclusions of the Extinction Risk Assessment supported by the information presented?

Yes. Results and conclusions presented are supported by the information presented and are a balanced representation of the views expressed by the team of experts engaged.

Specific Comments:

GSA: Reviewer #2 provided >100 handwritten suggested revisions and comments on the GSA. All suggested revisions were incorporated. Nearly all the comments were addressed by revising the text.

SRR: Reviewer #2 had no major comments on the SRR, and felt this document was very complete. Reviewer #2 added about a dozen suggested minor revisions and a handful of comments in track changes to the SRR. All suggested revisions were incorporated, and all comments were addressed by revising the text.

Reviewer #3:

1. In general, do General Status Assessment and Status Review Report include and cite the best scientific and commercial information available on the species, its biology, stock structure, habitats, threats, and risks of extinction?

The General Status Assessment and SRR are both very complete documents. Some minor errors, and several omissions were identified that have been provided as comments to the text.

2. Are the scientific conclusions factually supported, sound, and logical?

Yes.

3. Where available, are opposing scientific studies or theories acknowledged and discussed?

Yes.

4. Are uncertainties assessed and clearly stated?

In most cases. This needs to be improved in sections 5's discussion of high risk.

5. Are the methods used for the Extinction Risk Assessment valid and appropriate?

Yes.

6. Are the results and conclusions of the Extinction Risk Assessment supported by the information presented?

Yes. However, this is the biggest weakness. The outcome is dictated by the definitions to a great degree. The definitions do not allow for a high risk if the threat is in the foreseeable future rather than immediate. Was the extinction risk to dinosaurs high or moderate 50 years before the asteroid struck the earth? Does it matter if we know for certain the collision would occur? By definitions used for the Extinction Risk Assessment it was moderate, not changing until the

*foreseeable future became the immediate future, thus predetermining the outcome based entirely on timing.*²

Specific Comments:

Reviewer #3 provided hundreds of suggested revisions and comments on the GSA and SRR. However, these revisions and comments were received on February 3rd and 21st, 2020, respectively, approximately two months after the deadline of 12/20/19 that was set when the drafts were transmitted to the peer reviewer on 11/20/19 (the other 2 peer reviewers submitted their reviews on time). Since the publication date for the 12-month finding was fixed by a Settlement Agreement for 6/30/20, and the draft finding plus GSA and SRR began internal review in January 2020, there was not enough time to address all of this peer reviewer's specific comments. However, all the comments were reviewed, and in cases where the comments pointed out errors (a small proportion of the comments), the GSA and SRR were corrected accordingly.

² In the ESA, the timing of extinction risk is the main distinction between listing a species as Endangered (E) vs. Threatened (T). Thus, the Listing guidance (NMFS 2017) intentionally defines extinction risk based on timing.