

**DRAFT ENVIRONMENTAL ASSESSMENT FOR
A PROPOSED ENDANGERED SPECIES ACT SECTION 4(D) REGULATION FOR
TRIDACNA CROCEA, *T. MAXIMA*, *T. NOAE*, AND *T. SQUAMOSA***

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EXECUTIVE SUMMARY

This draft Environmental Assessment (EA) evaluates the potential environmental effects that may result from promulgating a protective regulation under section 4(d) of the Endangered Species Act (ESA) for four species of giant clams (Cardiidae: Tridacninae), *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, which are proposed to be listed as threatened under section 4(e) of the ESA. The proposal to list the four species as threatened is due to the similarity in appearance of their derivative parts and products (e.g., meat, worked shell products, and pearls) to parts and products derived from six other species of giant clams, *Hippopus hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*, which are proposed to be listed as endangered and threatened due to their extinction risk. The proposal for listing the 10 species under the ESA is not part of the Proposed Action being analyzed here and would occur concurrently.

The proposed section 4(d) regulation would apply to *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* the ESA section 9(a)(1)(A) prohibition of import into and export from the United States and its territories, but would limit the prohibition to derivative parts and products for which the species of origin cannot be visually determined. Promulgation of the proposed 4(d) regulation is prompted by the need to provide additional protection to the six species, *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*, by mitigating a challenge that law enforcement personnel face in determining the species of origin for derivative parts and products of giant clams in imports and exports into and from the United States and its territories. The proposed 4(d) regulation is expected to result in a reduction in unauthorized trade of the six species compared to the alternative in which the proposed 4(d) regulation is not promulgated. NMFS considered and evaluated three alternatives for this action:

Alternative 1, No-action Alternative: The No-action Alternative represents the environmental baseline against which the other alternatives are compared to determine their environmental effects. Under the No-action Alternative, no protective regulations under section 4(d) of the ESA would be promulgated for *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*.

Alternative 2, Proposed Action: Under Alternative 2, an ESA section 4(d) regulation would be promulgated, in conjunction with the proposed listing of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* as threatened under section 4(e), that would apply the section 9(a)(1)(A) prohibition of import into and export from the United States and territories to these four species, but would limit the prohibition to derivative parts and products. For the purpose of this regulation, “derivative parts and products” are defined as: (a) any tissue part that has been removed from the shell, including mantle tissue, adductor muscle, portions thereof, or the whole flesh of the animal comprising both the mantle and adductor muscle; (b) any worked shell product, including handicrafts, sculptures, jewelry, tableware, decorative ornaments, and other carvings, but not raw, unworked shells; and (c) pearls or any product derived from a pearl. All of the activities outlined in section

9(a)(1) of the ESA would continue to be lawful for live or intact specimens and raw, unworked shells of these species.

Alternative 3: Under Alternative 3, ESA section 4(d) regulations would be promulgated, in conjunction with the proposed listing of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* as threatened under section 4(e), that would apply all of the prohibitions under section 9(a)(1) of the ESA to all parts, products, and specimens of these four species.

The alternatives would apply to people and areas that fall under U.S. jurisdiction, including but not limited to:

- Private citizens or residents of the United States;
- Any person within the United States or its territories; and
- Any corporation, partnership, association, or other organization organized under the laws of the United States or of any State, territory, possession, or district of the United States.

Under all three alternatives, the separate proposed listing all 10 species as endangered or threatened under the ESA may still occur. However, NMFS has determined that ESA listing decisions are not subject to NEPA, per section 4(b)(1)(A) of the ESA, and therefore the proposed listings are not analyzed in this EA.

The No-action Alternative would not provide any additional protection for the six giant clam species that are proposed to be listed as endangered or threatened on the basis of their extinction risk (*i.e.*, *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*). The two action alternatives would facilitate protection for these species by alleviating an enforcement challenge that has the potential to contribute to unauthorized commerce of these six species in the United States. Alternative 2 would prohibit the import and export of derivative parts and products of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* into and from the United States and its territories, where Alternative 3 would apply all prohibitions under ESA section 9(a)(1) to all parts, products, and specimens of these four species. Alternative 2 is preferred over Alternative 3 for two reasons. It is expected to reduce the potential for unauthorized import and export of *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* into and from the United States and its territories, by eliminating the possibility that someone may misrepresent, either accidentally or purposefully, that parts or products of these six species are derived from one of the other four species, *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*. Additionally, Alternative 2 would avoid excessive regulation of species that are proposed for listing based on similarity of appearance rather than their extinction risk, by allowing for the continued harvest and mariculture of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, domestic and foreign commerce of all parts, products, and specimens of these species, and continued import and export of live and intact specimens and raw, unworked shells of these species into and from the United States and its territories. Thus, Alternative 2 is currently preferred because it would facilitate additional protection for *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T.*

mbalavuana, and *T. squamosina*, while avoiding adverse effects on persons and communities, particularly in the U.S. Pacific Island territories, who rely on the utilization of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* as an important source of food and income.

The proposed action/preferred alternative (Alternative 2) would be expected to result in the following effects:

- Reduce unauthorized import and export of *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* into and from the United States and its territories;
- Improve the abundance of *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* in the wild; and
- Reduce unnecessary adverse impacts on relevant stakeholders by allowing for continued harvest and mariculture of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, as well as continued trade of live and intact specimens and raw, unworked shells of these four species.

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ACRONYMS AND GLOSSARY

CEQ - Council on Environmental Quality

CFR - Code of Federal Regulations

CITES - Convention on International Trade in Endangered Species of Wild Fauna and Flora

CNMI - Commonwealth of the Northern Mariana Islands

EA - Environmental Assessment

EIS – Environmental Impact Statement

ESA - Endangered Species Act

FONSI – Finding of No Significant Impact

FRN - *Federal Register* notice

IRFA - Initial Regulatory Flexibility Act Analysis

LEMIS - Law Enforcement Management Information System

NEPA - National Environmental Policy Act

NMFS - National Marine Fisheries Service

NOAA - National Oceanic and Atmospheric Administration

PRIMNM - Pacific Remote Islands Marine National Monument

RFA – Regulatory Flexibility Act

RIR - Regulatory Impact Review

RPA - Reasonable and Prudent Alternative

RPM - Reasonable and Prudent Measures and Terms and Conditions

U.S.C. - U.S. Code

Conservation (conserve, conserving) - to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the ESA are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking (16 U.S.C. § 1532 (3)).

Cumulative effects - the effects on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR § 1508.1(g)(3)).

Effects or impacts - changes to the human environment from the Proposed Action or alternatives that are reasonably foreseeable and include direct effects, indirect effects, cumulative effects, and ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health and include beneficial effects. (40 CFR § 1508.1(g)).

Endangered species - any species which is in danger of extinction throughout all or a significant portion of its range (16 U.S.C. § 1532 (3)).

Harass – create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (NMFS Procedure 02-110-19).

Harm – an act which actually kills or injures fish or wildlife, such as significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR § 222.102).

Human environment – means comprehensively the natural and physical environment and the relationship of present and future generations of Americans with that environment (40 CFR § 1508.1(m)).

Jeopardize the continued existence of – to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of the listed species in the wild by reducing the reproduction, numbers, or distribution

of that species (50 CFR § 402.02).

Listed species - any species of fish, wildlife, or plant which has been determined to be endangered or threatened under section 4 of the ESA (50 CFR § 402.02).

Species – includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature (16 U.S.C. § 1532 (16)).

Take – to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (16 U.S.C. § 1532 (19)).

Threatened species - any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range (16 U.S.C. § 1532 (20)).

1.0 INTRODUCTION

In this environmental assessment (EA), the National Marine Fisheries Service (NMFS) evaluated the potential environmental effects of promulgating regulations under section 4(d) of the Endangered Species Act (ESA; 16 U.S.C. §§ 1531-1544) for *Tridacna crocea*, *T. maxima*, *T. noae*, and *T. squamosa*. NMFS analyzed the potential environmental effects of the proposed protective regulation and two other alternatives including the No-action Alternative. This EA was prepared according to the Council on Environmental Quality's (CEQ) regulations (40 CFR Parts 1500 to 1508¹), and NOAA policy and procedures² for implementing the National Environmental Policy Act (NEPA; 42 U.S.C. § 4321 et seq.).

1.1 Background

On August 7, 2016, NMFS received a petition to list 10 species of giant clams (Cardiidae: Tridacninae) as threatened or endangered under the ESA throughout their respective ranges. On June 26, 2017, NMFS published a 90-day finding (82 FR 28946) announcing that the petition presented substantial scientific or commercial information indicating that the petitioned action may be warranted for 7 of the 10 species listed in the petition (*H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, *T. squamosa*, and *T. squamosina*), but that the petition did not present substantial scientific or commercial information indicating that the petitioned action may be warranted for the other 3 species (*T. crocea*, *T. maxima*, or *T. noae*). NMFS announced the initiation of a status review for the seven aforementioned giant clam species, as required by section 4(b)(3)(A) of the ESA, and requested information to inform the agency's decision on whether these species warrant listing as endangered or threatened under the ESA (82 FR 28946).

NMFS independently reviewed the best available scientific and commercial data regarding the seven species, including information in the petition, public comments submitted in response to the 90-day finding, the comprehensive Status Review Report (Rippe et al., 2024), and published and unpublished information cited therein. Having considered this information in its entirety, and taking into account efforts to protect the species by states, foreign nations, or political subdivisions thereof, NMFS determined that *H. porcellanus*, *T. mbalavuana*, and *T. squamosina* are presently in danger of extinction throughout the entirety of their respective ranges; *T. derasa* and *T. gigas* are in danger of extinction in a significant portion of their respective ranges; and *H. hippopus* is likely to become an endangered species within the foreseeable future in a significant portion of its range. Therefore, NMFS is proposing to list *H. porcellanus*, *T. derasa*,

¹ This EA applies CEQ's NEPA regulations as of May 20, 2022, because review of this proposed action began on November 22, 2023, which preceded the effective date of CEQ's Phase 2 NEPA regulations (July 1, 2024). See 50 C.F.R. § 1506.13.

² NOAA Administrative Order (NAO) 216-6A "Compliance with the National Environmental Policy Act, Executive Orders 12114, Environmental Effects Abroad of Major Federal Actions; 11988 and 13690, Floodplain Management and 11990, Protection of Wetlands" issued April 22, 2016 and the Companion Manual for NAO 216-6A "Policy and Procedures for Implementing the National Environmental Policy Act and Related Authorities" issued January 13, 2017.

T. gigas, *T. mbalavuana*, and *T. squamosina* as endangered species and *H. hippopus* as a threatened species under the ESA. NMFS also determined that the fluted clam (*T. squamosa*) is not currently in danger of extinction throughout all or a significant portion of its range and is not likely to become so within the foreseeable future. Thus, NMFS found that *T. squamosa* does not meet the definition of a threatened or an endangered species under section 4(a)(1) of the ESA.

If the five species, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*, are listed as endangered, all the prohibitions under section 9(a)(1) would automatically apply to these species (see Section 1.2). When a species is listed as threatened, the prohibitions under section 9(a)(1) of the ESA are not automatically applied; however, section 4(d) of the ESA authorizes NMFS to issue regulations deemed necessary and advisable to provide for the conservation of a threatened species. It also permits NMFS to extend any or all of the prohibitions identified in section 9(a)(1) for endangered species to threatened species. Therefore, if *H. hippopus* is listed as threatened, NMFS is proposing to exercise this latter authority under section 4(d) of the ESA to apply all of the section 9(a)(1) prohibitions to *H. hippopus*.

As part of its review, NMFS identified overutilization for commercial, recreational, scientific, or educational purposes as a principal threat to the six species proposed for listing. One component of this threat is related to the international trade of giant clams and their derivative parts and products (*e.g.*, meat, shells, and shell carvings), which includes imports of such products into the United States and its territories. Beginning in 2009, U.S. customs officials began encountering regular shipments of giant clam meat from Pacific island nations, chiefly from the Marshall Islands and FSM, but also from Fiji, Tonga, Palau, Samoa, Kiribati, and French Polynesia. The meat is typically frozen in plastic bags or bottles and is often shipped in coolers mixed with various other seafood products. The shipments are very rarely accompanied by valid CITES permits. Between 2016 and 2020, an average of 127 shipments of giant clam meat originating from the Marshall Islands and FSM were encountered at U.S. ports of entry per year, equating to approximately 233 kg and 4,504 specimens per year. An additional 250 cases of giant clam meat violations and seizures have been documented between December 2021 and October 2023. Trade data also reveal an average of 9 shipments of shell carvings, jewelry, and other worked shell products into the United States per year from 2016 to 2020, comprising 152 specimens per year on average. In most cases, these have not included a record of the location or species of origin.

Critically, for derivative giant clam parts and products, such as meat that has been removed from the shell and worked shell items (*i.e.*, carvings and jewelry), it is not possible for U.S. law enforcement personnel to visually determine the species from which the product is derived. Due to this enforcement challenge, in conjunction with the inadequacy of existing regulatory mechanisms in most Pacific island nations, it is feasible that persons engaging in the import or export of derivative products from one of the six species proposed to be listed into or from the United States and its territories, could misrepresent, either accidentally or purposefully, that such products are derived from a species that has not been proposed for listing. This enforcement challenge presents an additional threat to the six species proposed to be listed.

Section 4(e) of the ESA authorizes the treatment of a species, subspecies, or population segment as endangered or threatened if: “(a) such species so closely resembles in appearance, at the point

in question, a species which has been listed pursuant to such section that enforcement personnel would have substantial difficulty in attempting to differentiate between the listed and unlisted species; (b) the effect of this substantial difficulty is an additional threat to an endangered or threatened species; and (c) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of this Act.” Under this authority, NMFS is proposing to list the four species, *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, as threatened due to the similarity in appearance of products derived from these species (*e.g.*, meat, worked shell products, and pearls) to those derived from the six other giant clam species proposed to be listed as endangered or threatened on the basis of their extinction risk.

Concurrent with the proposal to list the four species as threatened under the ESA, NMFS is proposing to promulgate a section 4(d) regulation that would mitigate the aforementioned enforcement challenge and provide additional protection to the six species at risk of extinction, *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*.

More detailed information about the biology, life history, extinction risk assessments, and listing determinations for *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, *T. squamosa*, and *T. squamosina* can be found in the Status Review Report (Rippe et al., 2024) and the proposed rule (89 FR 60498). Additional details on the rationale supporting the proposed listing of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* as threatened under the authority of section 4(e) of the ESA is provided in the proposed rule (89 FR 60498).

1.2 Environmental Review Process

NEPA, the CEQ regulations, and NOAA policy and procedures for implementing NEPA, require NMFS to consider the potential environmental impacts of a proposed action before making a decision. NMFS’ promulgation of regulations under section 4(d) of the ESA for species proposed for listing pursuant to section 4(e) of the ESA is a major federal action subject to NEPA and therefore requires analysis of the associated environmental effects. An EA is a concise public document that provides an assessment of the potential effects a major federal action may have on the human environment. Major federal actions include activities that federal agencies fully or partially fund, regulate, conduct, or approve.

This EA will enable NMFS to determine and compare the potential impacts from the Proposed Action (preferred Alternative 2) to the other two alternatives, considering both the negative and positive impacts of these three alternatives. This EA will also be used by NMFS as the basis for either a finding of no significant impact or for the preparation of an environmental impact statement. Significance is evaluated in terms of both the affected environment and degree of effect. The interests of user groups that either benefit from the existence of and protections for the species or are impacted by such protections are considered.

In addition, NMFS, to the fullest extent possible, integrates the requirements of NEPA with other regulatory processes required by law or by agency practice so that all procedures run concurrently, rather than consecutively. This includes coordination within NOAA, as

appropriate, during NEPA reviews prior to implementation of a proposed action to ensure that all applicable requirements are met.

Compliance with Other Laws

Endangered Species Act (16 U.S.C. §§ 1531-1544)

Section 4(e) of the ESA authorizes the treatment of a species, subspecies, or population segment as endangered or threatened if: “(a) such species so closely resembles in appearance, at the point in question, a species which has been listed pursuant to such section that enforcement personnel would have substantial difficulty in attempting to differentiate between the listed and unlisted species; (b) the effect of this substantial difficulty is an additional threat to an endangered or threatened species; and (c) such treatment of an unlisted species will substantially facilitate the enforcement and further the policy of this Act.”

The ESA provides several means for the conservation of threatened and endangered species. Section 7 of the ESA requires Federal agencies to consult with NMFS to ensure that any activity they authorize, fund, or carry out does not jeopardize the continued existence of an endangered or threatened species, or destroy or adversely modify its critical habitat. The protections under section 7 of the ESA automatically apply when a species is listed as endangered or threatened. Under the ESA section 7 consultation process, if a federal agency determines its action is likely to adversely affect a species or destroy or adversely modify critical habitat, the agency engages in formal consultation with NMFS. At the conclusion of formal consultation, NMFS issues a Biological Opinion that analyzes the effects of the action. If NMFS concludes the action will jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat, NMFS specifies Reasonable and Prudent Alternatives (RPAs) to the proposed action. If NMFS concludes the action will not jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat, but take of the species will occur, NMFS specifies Reasonable and Prudent Measures and Terms and Conditions (RPMs) to mitigate the effects of the action and authorizes any allowable “incidental take” of the species.

Section 9(a)(1) of the ESA prohibits any person subject to the jurisdiction of the United States from the following activities with respect to endangered species:

- A. Import any such species into or export any such species from the United States;
- B. Take³ any such species within the United States or the U.S. territorial sea;
- C. Take any such species upon the high seas;
- D. Possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such species taken in violation of (B) and (C) above;
- E. Deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of commercial activity, any such species;
- F. Sell or offer for sale in interstate or foreign commerce any such species; or

³ The term “take” is defined in section 3(19) of the ESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”

- G. Violate any regulation pertaining to such species or to any threatened species of fish or wildlife listed pursuant to section 4 of the ESA and promulgated by the Secretary pursuant to authority provided by the ESA.

All of the above prohibitions automatically apply when a species is listed as endangered but not when a species is listed as threatened. For threatened species, section 4(d) of the ESA authorizes the Secretary to issue protective regulations the Secretary deems are necessary and advisable for the conservation of the threatened species. It also permits the Secretary to prohibit by regulation any act prohibited under section 9(a)(1). NMFS determines what regulations to propose to adopt pursuant to either of the authorities provided in section 4(d) based on the biological status, conservation needs, and potential threats to the threatened species.

The ESA allows for exceptions to the section 9 prohibitions through interagency consultations as prescribed by ESA section 7 (described above) or through a permit issued pursuant to section 10. NMFS can issue two types of permits exempting take that could be applied to the subject species under the Proposed Action. Section 10(a)(1)(A) of the ESA allows NMFS to permit any action otherwise prohibited by section 9 for scientific purposes or to enhance the propagation or survival of the affected species. NMFS issues scientific research and enhancement permits to Federal and non-Federal entities conducting research or conservation activities that involve take of a listed species, in exception to any section 9 prohibitions. Section 10(a)(1)(B) allows NMFS to issue incidental take permits to non-Federal entities performing activities that may incidentally take a listed species in the course of an otherwise lawful activity. Section 10(a)(1) permits can provide an exception to any of the acts otherwise prohibited under section 9, while section 10(a)(1)(B) permits can provide an exception to the section 9(a)(1)(B) prohibition on take within the United States or territorial sea of the United States.

Section 11 of the ESA provides for civil and criminal penalties for any violations of section 9(a)(1) or of regulations issued under section 4(d) the ESA.

Regulatory Flexibility Act (RFA) (5 U.S.C. §§ 601-612)

First enacted in 1980, the RFA was designed to ensure that the government considers the potential for its regulations to unduly inhibit the ability of small entities to compete. The goals of the RFA include increasing the government's awareness of the impact of regulations on small entities and encouraging agencies to exercise flexibility to provide regulatory relief to small entities. Subject to certain exceptions, when a proposed regulation is published for public comment in the *Federal Register*, the RFA requires the agency to prepare and make available for public comment an analysis that describes the effect of the rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). For this proposed rulemaking, this analysis takes the form of an initial regulatory flexibility analysis (IRFA). As described in 5 U.S.C. § 603(b), each IRFA is required to contain:

1. "a description of the reasons why action by the agency is being considered;
2. a succinct statement of the objectives of, and legal basis for, the proposed rule;

3. a description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
4. a description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record; and
5. an identification, to the extent practicable, of all relevant Federal rules which may duplicate, overlap or conflict with the proposed rule.”

1.3 Public Involvement

Although agency procedures do not require publication of the draft EA prior to finalizing an EA, NMFS is utilizing the public process associated with the regulation proposed to be adopted pursuant to section 4(d) of the ESA to involve the public in NMFS’ development and evaluation of information relevant to this analysis. For this action, the *Federal Register* notice (FRN) of the proposed rulemaking includes a description of the Proposed Action. The FRN of the proposed rulemaking, the draft EA, and the corresponding public comment period are instrumental in providing the public with information on relevant environmental issues and offering the public a meaningful opportunity to provide comments for our consideration in both the ESA and NEPA processes.

NMFS will accept public comment during the 90-day period advertised in the FRN. NMFS will also be conducting public informational meetings and public hearings in the U.S. Pacific Islands (see also 5.4). A detailed summary of the comments, and NMFS’ responses to those comments, will be included in the FRN for the final rule.

1.4 Document Scope

The analysis in this EA addresses potential direct, indirect, and cumulative impacts to affected physical, biological, and socioeconomic resources, resulting from NMFS’ Proposed Action and alternatives. This EA provides focused information on impacts of environmental concern related to the proposed promulgation of an ESA 4(d) regulation. An IRFA, incorporated by reference in accordance with 40 C.F.R. 1501.12, was completed in which impacts to small entities (*i.e.*, small businesses, organizations, and governmental jurisdictions) were found to not be expected as a result of implementing the Proposed Action or alternatives. Additionally, NMFS has determined that impacts are limited to the 10 giant clam species proposed for listing under the ESA, their habitat, and related stakeholders. Therefore, most resources are not carried forward for further analysis.

Under all three alternatives, the separate action of proposing to list all 10 species of giant clams as protected under the ESA, may still occur independently. However, NMFS has determined that ESA listing actions are not subject to the environmental assessment requirements of NEPA, based on the requirements in section 4(b)(1)(A) of the ESA and the opinion in *Pacific Legal*

Foundation v. Andrus, 657 F. 2d 829 (6th Cir. 1981), and are therefore not analyzed in this EA. See Section 5.6 Cumulative Impacts for discussion of any related potential impacts.

2.0 PURPOSE OF AND NEED FOR ACTION

2.1 The Proposed Action

NMFS proposes to promulgate an ESA section 4(d) regulation that would prohibit the import and export of derivative parts and products of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* into and from the United States and its territories. No other prohibitions under section 9(a)(1) of the ESA are proposed for these four species. “Derivative parts and products” are defined as: (a) any tissue part that has been removed from the shell, including mantle tissue, adductor muscle, portions thereof, or the whole flesh of the animal comprising both the mantle and adductor muscle; (b) any worked shell product, including handicrafts, sculptures, jewelry, tableware, decorative ornaments, and other carvings, but not raw, unworked shells; and (c) pearls or any product derived from a pearl.

Take of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* in the waters of the United States and its territories and on the high seas would be lawful. A person would continue to be able to possess, deliver, carry, transport, ship, sell, or offer to sell these four species and their parts and products, domestically and in interstate and foreign commerce. Additionally, all of the activities outlined in section 9(a)(1) of the ESA would continue to be lawful for live and intact specimens and raw, unworked shells of these species.

2.2 Purpose and Need

The purpose of this action is to facilitate the protection of six species of giant clams (*H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, *T. squamosina*) by minimizing the potential for their prohibited import into or export from the United States and its territories. NMFS aims to achieve this purpose without imposing undue burden on persons or communities engaging in activities that are unlikely to hinder the protection of these six species.

Additional protection to these six species is needed due to the substantial difficulty that U.S. law enforcement personnel face in differentiating the species from which certain parts and products of giant clams are derived in imports and exports into and from the United States and its territories. In order for the ESA’s import and export restrictions to be effective, enforcement personnel must be able to quickly determine whether derivative parts or products are from a listed species at U.S. ports of entry and take appropriate enforcement action to suppress illegal trade. The high risk of misrepresentation, coupled with the visual similarity of certain derivative part or products of giant clams species, creates a loophole that would undermine the effectiveness of import and export restrictions imposed under section 9(a)(1)(A) of the ESA. The effect of this loophole—the weakened deterrent value of the Act in protecting the species proposed to be listed due to the substantial difficulty in visually distinguishing derivative parts or

products among different species of giant clams—is an additional threat to the six species that NMFS is proposing to list based on their extinction risk (*H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, *T. squamosina*).

3.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

3.1 Alternatives Considered

NMFS' Proposed Action is to issue a section 4(d) regulation under the ESA to prohibit the import and export of derivative parts and products of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* into and from the United States and its territories, to facilitate the protection of *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*. In accordance with the NEPA and the CEQ Regulations, NMFS is required to consider a reasonable range of alternatives to a Proposed Action as well as a No-action Alternative. “Reasonable alternatives means a reasonable range of alternatives that are technically and economically feasible, and meet the purpose and need for the proposed action” (40 CFR 1508.1(z)).

The evaluation of alternatives under NEPA assists NMFS with ensuring that unnecessary impacts are avoided through an assessment of alternative ways to achieve the purpose and need for its Proposed Action that may result in less environmental harm. To warrant detailed evaluation under NEPA, an alternative must be reasonable, along with meeting the stated purpose and need for the Proposed Action. Accordingly, to be considered “reasonable,” an alternative must:

- 1) Comply with the mandates of the ESA;
- 2) Mitigate the challenge of enforcing the ESA section 9(a)(1)(A) prohibition for *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* resulting from the similarity of appearance of derivative parts and products of these species to those of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*;
- 3) Prevent or minimize the unauthorized import and export of *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*, including derivative parts and products thereof, into and from the United States and its territories; and
- 4) Comply with all other federal laws and regulations.

Three alternatives were considered. The main features of each alternative are summarized below and in Table 3.1-1:

- *Alternative 1, No-action Alternative:* No regulations under section 4(d) of the ESA would be promulgated for *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*.
- *Alternative 2, Proposed Action:* A regulation would be promulgated under section 4(d) of the ESA that would apply the section 9(a)(1)(A) prohibition, the import and export into and from the United States and its territories, to derivative parts and products of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*.

- *Alternative 3*: A regulation would be promulgated under section 4(d) of the ESA that would apply all prohibitions of section 9(a)(1) of the ESA to *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*.

Table 3.1-1. Summary of the alternatives considered by NMFS. The primary features, similarities, and differences between the alternatives are highlighted.

Alternative Description	Application of ESA section 9(a)(1) prohibitions	Application of take prohibitions	Exceptions / Exemptions
Alternative 1, No-action Alternative; No change from current management	No ESA section 9(a)(1) prohibitions would be applied to <i>T. crocea</i> , <i>T. maxima</i> , <i>T. noae</i> , and <i>T. squamosa</i> .	Take of <i>T. crocea</i> , <i>T. maxima</i> , <i>T. noae</i> , and <i>T. squamosa</i> <u>would not</u> be prohibited.	N/A
Alternative 2, Proposed Action; Limited protections applied	ESA section 9(a)(1)(A) prohibiting import and export into and from the United States and its territories would be applied to <i>T. crocea</i> , <i>T. maxima</i> , <i>T. noae</i> , and <i>T. squamosa</i> , but would be limited to derivative parts and products of these species.	Take of <i>T. crocea</i> , <i>T. maxima</i> , <i>T. noae</i> , and <i>T. squamosa</i> <u>would not</u> be prohibited.	The import/export prohibition would not apply to live or intact specimens nor to raw, unworked shells of <i>T. crocea</i> , <i>T. maxima</i> , <i>T. noae</i> , and <i>T. squamosa</i> .
Alternative 3; Same as the protections applied to endangered species	All ESA section 9(a)(1) prohibitions would be applied to <i>T. crocea</i> , <i>T. maxima</i> , <i>T. noae</i> , and <i>T. squamosa</i> .	Take of <i>T. crocea</i> , <i>T. maxima</i> , <i>T. noae</i> , and <i>T. squamosa</i> <u>would</u> be prohibited.	None

3.2 Alternative 1, No-action Alternative

The No-action Alternative is the physical and biological status quo, and presents the environmental and social baselines against which to measure the effects of taking any action,

including implementation of other alternatives. Under the No-action Alternative, no 4(d) regulations would be promulgated for species proposed to be listed pursuant to section 4(e), and consequently, none of the prohibitions under section 9(a)(1) of the ESA would be applied to *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*.

Currently, all giant clam species, including *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, are listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and are therefore subject to certain regulations on international trade. This designation does not necessarily limit trade of the species. However, for trade to be permitted, it requires that specimens be acquired legally and a finding from the exporting Party's Scientific Authority that such trade is not detrimental to the survival of the species. Under this alternative, trade of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* would continue to be regulated solely by the aforementioned CITES provisions.

Effective enforcement of the ESA section 9(a)(1)(A) import/export prohibition for *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* relies on law enforcement officers having the ability to visually differentiate the species in trade. This would continue to be a significant challenge under the No-action Alternative. U.S. law enforcement personnel would continue to be unable to confidently identify the species from which derivative parts and products of giant clams, such as meat, worked shell products, and pearls, originate. Thus, under the No-action Alternative, this enforcement challenge would hinder the effectiveness of the section 9(a)(1)(A) prohibition for *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*, and no additional protections would be afforded to these six species.

3.3 Alternative 2, Proposed Action

Under Alternative 2, NMFS would promulgate a 4(d) regulation that would apply the section 9(a)(1)(A) prohibition of import into and export from the United States and territories to *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, but would limit the prohibition to derivative parts and products for which the species of origin cannot be visually determined. Such "derivative parts and products" are defined in the proposed rule (89 FR 60498) as: (a) any tissue part that has been removed from the shell, including mantle tissue, adductor muscle, portions thereof, or the whole flesh of the animal comprising both the mantle and adductor muscle; (b) any worked shell product, including handicrafts, sculptures, jewelry, tableware, decorative ornaments, and other carvings, but not raw, unworked shells; and (c) pearls or any product derived from a pearl. The prohibition would apply to commercial and non-commercial shipments of any such products of these four species and would make it unlawful for any person subject to the jurisdiction of the United States to import such products into or export such products from the United States or its territories.

Alternative 2 would avoid excessive regulation of species that are proposed for listing based on similarity of appearance rather than their extinction risk, by allowing for the continued harvest and mariculture of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, as well as domestic and foreign commerce of all parts, products, and specimens of these four species. Foreign commerce,

as defined in section 3(9) of the ESA, is separate from import and export, in that it includes any transaction between persons in one or more foreign countries, between a person within the United States and a person in a foreign country, or between persons within the United States, where the wildlife products in question are moving in any country or countries outside the United States. Alternative 2 would also allow the continued import and export of live and intact specimens and raw, unworked shells of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* into and from the United States and its territories.

3.4 Alternative 3

Under Alternative 3, NMFS would promulgate section 4(d) regulation that would apply all the prohibitions under section 9(a)(1) of the ESA to *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, essentially providing these species the same protections as endangered species. Under this alternative, it would be unlawful for any person subject to the jurisdiction of the United States to:

- A. Import any of the four species into, or export any of the species from the United States, including all specimens, parts, and products of the species;
- B. Take any of the species within the United States or the territorial sea of the United States;
- C. Take any of the species upon the high seas;
- D. Possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any of the species taken in violation of subparagraphs (B) and (C);
- E. Deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any of the species;
- F. Sell or offer for sale in interstate or foreign commerce any of the species; or
- G. Violate any regulation pertaining to the species promulgated by the Secretary pursuant to authority provided by this ESA.

Section 11 of the ESA provides for civil and criminal penalties for violation of section 9(a)(1) or of regulations issued under the ESA. If Alternative 3 were implemented, proposed or ongoing activities would need to be modified to avoid violating the above regulations, including take of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*. Entities could apply for an ESA section 10 permit if their activities met the issuance criteria described in section 10 of the ESA.

4.0 AFFECTED ENVIRONMENT

4.1 Introduction

This section describes the environmental baseline, or the current conditions, of the environment that could potentially be affected if the Proposed Action or an alternative were implemented. There are three broad categories that NMFS uses to evaluate the environmental impacts of proposed actions: physical, biological, and socioeconomic. The physical environment includes geographic, oceanographic, and climatic factors. The biological environment includes the status and distribution of marine species, life history information, and information on threats and

stressors. The analysis of the socioeconomic environment includes impacts on affected economic sectors of the community from regulatory actions and any interrelated or additional social impacts. In each section, the relevance of the issue to the Proposed Action and alternatives is reviewed, followed by a description of the relevant resources.

4.2 Physical Environment

T. maxima is the most broadly distributed of the four subject species. Within the United States, it has been observed in the waters of Guam, the Commonwealth of the Northern Mariana Islands (CNMI), American Samoa, and the Pacific Remote Islands Marine National Monument (PRIMNM) (Maragos et al., 2008; Neo et al., 2017). *T. squamosa* is also known to occur in Guam, American Samoa, and the PRIMNM, and it once occurred in CNMI but is now believed to be extirpated (Wells, 1997; Neo et al., 2017). The known range of *T. crocea* encompasses Guam and CNMI, and that of *T. noae* includes Guam, CNMI, and the PRIMNM (Neo et al., 2017).

Giant clams inhabit coral reefs and a wide range of associated shallow-water habitats, including seagrass beds, intertidal reef flats, atoll lagoons, live coral, dead coral rubble, and sandy substrata (Munro, 1993; Neo et al., 2017). The depth range varies considerably among species. *T. crocea*, *T. maxima*, and *T. noae* typically inhabit shallow depths of 1-15 meter (m), while *T. squamosa* is more of a depth-generalist and can be found at depths up to 40 m (Jantzen et al., 2008; Neo et al., 2017).

All four of these species are typically found firmly attached to hard-bottom substrates by a network of byssal (*i.e.*, filamentous) threads that extend from an orifice along the hinge of the shell (Neo et al., 2017). *T. crocea*, in particular, bores into the substrate and fully embeds its body below the surface, leaving only its mantle exposed. In some cases, the other three species can be found partially embedded as well. Giant clams are commonly harvested throughout the U.S. Pacific Islands (see Section 4.3), and in the course of such harvesting, people will often use crowbars or other tools to forcefully pry the clams from the substrate, in some cases causing physical damage to hard-bottom habitats.

The affected physical environment would also include land areas adjacent to the coast, because activities occurring on land may affect coastal water quality where these species occur and thus may pose a risk of incidental take. For the purposes of this assessment, given the small size of these island territories, NMFS assumes that the affected physical environment encompasses the entire land area of Guam, CNMI, American Samoa, and the PRIMNM, as well as the surrounding waters and benthic habitats up to a depth of 40 m.

4.3 Biological Environment

The affected biological environment for the three alternatives would include not only *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, but also the six other giant clam species that would benefit from the proposed 4(d) regulation: *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*.

All species of giant clams are protandrous hermaphrodites, meaning they mature first as males and later develop ovaries to function as both male and female simultaneously (Wada, 1952; Rosewater, 1965). Size and age at maturity vary by species and geographic location, but generally giant clams reach male phase maturity at around 2-3 years of age (Heslinga et al., 1984; Shelley, 1989) and female phase maturity as early as 3-5 years (Heslinga et al., 1984; Isamu, 2008). Giant clams reproduce via broadcast spawning, in which sperm and eggs are released into the water column where external fertilization takes place, and are exceptionally fecund, with individuals producing by many estimates tens to hundreds of millions of eggs during a single spawning event (Lucas, 1988). However, reports suggest that less than 1 percent of all fertilized eggs on average survive larval development and progress to the juvenile phase (Jameson, 1976; Fitt et al., 1984; Crawford et al., 1986).

The maximum lifespan of giant clams is not known, but the oldest reliably aged individual was a large *T. gigas* determined to be 63 years old (Lucas, 1994). Similar aging studies based on the analysis of growth rings in the shell estimated a 43 centimeter (cm) long *T. squamosa* to be around 22 years old (Basker, 1991) and a ~20 cm long *T. maxima* to be around 28 years old (Romanek et al., 1987).

Giant clams are harvested widely throughout their collective ranges. Together with the widespread inadequacy of existing regulatory mechanisms to address their overutilization, this constitutes the most significant threat to the survival of giant clams. All species are exploited for their meat as food, fish bait, or animal feed; for their shells, which may be used for tools and houseware or sold to the curio trade; and as live specimens to be sold in the ornamental aquarium trade (Sant, 1995; Kinch & Teitelbaum, 2010; Neo et al., 2017). In addition to their easy collection, their late sexual maturity and the density-dependence of their broadcast spawning reproductive strategy combine to increase the vulnerability of giant clams to stock depletion. The best available scientific and commercial information consistently indicates that *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* have suffered major population declines over the last 50 years due in large part to these threats (Rippe et al., 2024).

4.4 Socioeconomic Environment

The following describes the socioeconomic resources potentially affected by the three alternatives. Discussion of commercial entities is taken from the IRFA (Appendix A), incorporated by reference in this EA.

Import and export of derivative parts and products of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* into and from the United States and its territories has occurred at very low levels in recent years. Law Enforcement Management Information System (LEMIS) trade data indicates that there were two imports into and two exports from the 50 states and the District of Columbia of “similarity of appearance” giant clam products that were cleared by U.S. Customs and Border Protection officials and whose purpose of import or export was either commercial or for exhibition. Of the two imports, one was for commercial purposes and was valued at approximately \$1,500 (2023 dollars). The second import was of a carving that was imported for a traveling exhibition and was valued at approximately \$44,000 (2023 dollars). An additional 10

imports of giant clam meat from the Marshall Islands had a total value of \$357 (2023 dollars) but were refused clearance by U.S. Customs officers and, therefore, generated no revenue for U.S. entities. Of the two exports, one, a jewelry item, was for commercial purposes and valued at approximately \$17,000 (2023 dollars). The second export was likely the same carving reported in the LEMIS data as having been imported, as the purpose (traveling exhibition), year (2018), and value (approximately \$44,000) reported in the respective import and export records were identical. Meanwhile, the CITES trade database reveals 22 records of imports of giant clam meat from Palau to Guam and CNMI over the years 2016-2021, all for the purpose of movement of personal property, but no imports into or exports from U.S. Pacific Island territories of “similarity of appearance” parts or products for commercial purposes.

U.S. entities engaged in the import or export of “similarity of appearance” products for commercial purposes are classified under the North American Industry Classification System (NAICS) as Jewelry, Watch, Precious Stone, and Precious Metal Merchant Wholesalers (NAICS industry code 423940). Entities engaged in the import and export of these products for display in a traveling exhibition or museum are classified under the NAICS code for Museums (NAICS industry code 712110). According to data gathered from the Dun and Bradstreet Hoovers database, there are approximately 25,000 U.S. small entities classified as Jewelry, Watch, Precious Stone, and Precious Metal Merchant Wholesalers and approximately 47,000 museums in the United States that qualify as small entities.

In addition to the aforementioned commercial entities, the affected socioeconomic environment would also include U.S. Pacific Island communities who engage in the harvest and mariculture of *T. crocea*, *T. maxima*, *T. noae*, or *T. squamosa*. These four species are highly valued and commonly harvested as a subsistence food source throughout the U.S. Pacific Island territories. The consumption of giant clam meat can be traced back to the earliest records of human existence in this region, and it remains a delicacy today (Hill, 1978; Linnekin et al., 2006; Aakre, 2014; Dixon et al., 2019). However, the relative contribution of giant clams to the total subsistence harvest of marine fisheries in this region is quite low, in part because of their declining abundance (Craig et al., 1993; Myers, 1993; Craig et al., 2008). Giant clams, predominantly *T. maxima*, are mostly harvested opportunistically whenever they are encountered, but are typically not the primary target of fishing outings (Craig et al., 2008). Giant clams are also valued for the traditional use of their shells in early tools, houseware, and ornamentation. Adzes carved from giant clam shells are commonly recovered from archaeological sites in American Samoa and the Mariana Archipelago, as well as many other islands throughout the Indo-Pacific (Moir, 1985; Addison et al., 2019; Dixon et al., 2019; Pajuelo, 2021). According to Villagomez (2023), these tools were especially important to the early CHamoru people of the Mariana Islands, as they were used to construct the canoes that would be used for fishing and to travel among neighboring islands. Archaeological evidence suggests that giant clam shells were also used by traditional Samoan fishermen to make the shanks for trolling/lure-style fish hooks (Hiroa, 1930, cited in Armstrong et al., 2011). Additionally, in CHamoru culture, jewelry carved from giant clam shells were once worn as symbols of power and high status (Amesbury et al., 2020; Molina, 2021). Today, certain pieces of traditional jewelry, such as the *sinahi* crescent moon pendant, are still worn widely by

CHamoru men to honor and pay tribute to this cultural heritage (Guam Visitors Bureau, 2023; Villagomez, 2023).

To address the dwindling stocks of giant clams, the governments of American Samoa, Guam, and CNMI have all explored giant clam mariculture as a way of establishing a sustainable source of food and income for local communities. *T. maxima* has been the most common focus of these initiatives, but other species have also been considered to varying degrees. For the most part, these programs continue to operate on a small or pilot scale, as challenges with poaching, inconsistent financial and political support, and technical shortcomings have limited their success to date.

5.0 Environmental Consequences

This section describes the anticipated environmental consequences of the Proposed Action and alternatives on the resources described in Section 4.0. The potential impacts are described in terms of their characteristics as defined below and are summarized in Table 5.1-1.

Type of Potential Impacts: Direct, indirect, and cumulative impacts are defined at 40 CFR 1508.1 and these definitions are presented below. Cumulative impacts are discussed in Section 5.6 of this document.

- *Direct impact:* Caused by the action and occur at the same time and place.
- *Indirect impact:* Caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.
- *Cumulative impact:* Effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Magnitude of Potential Impacts: The degree to which the alternatives would impact a particular resource was qualitatively assessed and characterized using the relative terms minor, moderate and major. The duration of the impact (short-term, long-term, and permanent); whether the outcome is beneficial, adverse, or neutral; and geographic range of impact were considered.

- *Minor impacts* are generally those that might be perceptible but, in their context, are not amenable to measurement because of their relatively minor character.
- *Moderate impacts* are those that are more perceptible and, typically, more amenable to quantification or measurement.
- *Major impacts* are those that, in their context and due to their severity, have the potential to be significant and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the requirements of NEPA.

Table 5.0-1. Summary of the potential environmental consequences of each of the alternatives.

Physical Environment	
Alternative 1 <i>(No-Action)</i>	None. No change to the physical environment is expected.
Alternative 2 <i>(Proposed Action)</i>	None. No change to the physical environment is expected.
Alternative 3	No significant change to the physical environment is expected. Minor indirect beneficial impacts to shallow water habitats, such as coral reefs, may result from a reduction of harvesting activities due to a prohibition on the take of <i>T. crocea</i> , <i>T. maxima</i> , <i>T. noae</i> , and <i>T. squamosa</i> .
Biological Environment	
Alternative 1 <i>(No-Action)</i>	None. Continued trade of <i>T. crocea</i> , <i>T. maxima</i> , <i>T. noae</i> , and <i>T. squamosa</i> would hinder the enforcement of the ESA section 9(a)(1)(A) import/export prohibition for the six species, <i>H. hippopus</i> , <i>H. porcellanus</i> , <i>T. derasa</i> , <i>T. gigas</i> , <i>T. mbalavuana</i> , and <i>T. squamosina</i> . Therefore, no beneficial impacts on their conservation or recovery is anticipated and their risk of extinction would remain unchanged.
Alternative 2 <i>(Proposed Action)</i>	<p>Minor indirect beneficial impacts to <i>T. crocea</i>, <i>T. maxima</i>, <i>T. noae</i>, and <i>T. squamosa</i> are expected, because harvest of these species in association with imports or exports of their derivative parts and products into or from the United States, would be reduced. A reduction in the extent to which <i>T. crocea</i>, <i>T. maxima</i>, <i>T. noae</i>, and <i>T. squamosa</i> are harvested would likely lead to minor indirect beneficial impacts to the population over time due to increased conservation.</p> <p>This action would also facilitate more effective enforcement of the ESA section 9(a)(1)(A) import/export prohibition for <i>H. hippopus</i>, <i>H. porcellanus</i>, <i>T. derasa</i>, <i>T. gigas</i>, <i>T. mbalavuana</i>, and <i>T. squamosina</i>, which would provide greater protection and a moderate indirect beneficial impact to these six species due to increased conservation of these species and related population increases.</p>

<p>Alternative 3</p>	<p>Moderate indirect beneficial impacts to <i>T. crocea</i>, <i>T. maxima</i>, <i>T. noae</i>, and <i>T. squamosa</i> are expected for populations of these species within U.S. waters as a result of prohibiting take and restricting commerce involving these species in the United States and its territories. This action may also reduce the extent to which these species are harvested in countries that export their derivative parts and products to the United States. This would likely result in minor indirect beneficial impacts to these four species outside the United States via population increases throughout their respective ranges.</p> <p>This action would also facilitate more effective enforcement of the ESA section 9(a)(1)(A) import/export prohibition for <i>H. hippopus</i>, <i>H. porcellanus</i>, <i>T. derasa</i>, <i>T. gigas</i>, <i>T. mbalavuana</i>, and <i>T. squamosina</i>, which would provide greater protection and a moderate indirect beneficial impact to these six species due to increased conservation of these species and related population increases.</p>
<p>Socioeconomic Environment</p>	
<p>Alternative 1 <i>(No-Action)</i></p>	<p>None. No change to the socioeconomic environment is expected.</p>
<p>Alternative 2 <i>(Proposed Action)</i></p>	<p>Indirect adverse impacts on small entities would be minor and largely limited to revenue losses borne by wholesalers or museums, or other exhibitors of giant clam products that, absent the Proposed Action, would engage in the import and/or export of “similarity of appearance” parts and products derived from <i>T. crocea</i>, <i>T. maxima</i>, <i>T. noae</i>, and <i>T. squamosa</i>. This action would also indirectly impact entities or individuals in the U.S. Pacific Island territories that, absent the Proposed Action, would engage in the export of “similarity of appearance” parts and products derived from <i>T. crocea</i>, <i>T. maxima</i>, <i>T. noae</i>, and <i>T. squamosa</i>. However, available data indicates that recent levels of such trade is very low, and we are not aware of any information indicating that this type of international trade would increase over the foreseeable future. Thus, any such adverse impacts are expected to be minor.</p>

<p>Alternative 3</p>	<p>Imports and exports of live specimens of <i>T. crocea</i>, <i>T. maxima</i>, <i>T. noae</i>, and <i>T. squamosa</i> would be permitted under the Proposed Action but prohibited under Alternative 3, which, relative to the Proposed Action and No-action Alternative, would incrementally indirectly adversely impact small entities to the extent that they would otherwise generate revenue from sale of these species or their derivative products. Small businesses in the Pet and Supplies Retailers and Other Miscellaneous Nondurable Goods Merchant Wholesalers industries would bear the majority of these impacts, which likely would be concentrated among a small number of companies. It is anticipated that adverse impacts would range from minor to moderate, depending on the percentage of a particular impacted firm’s average annual revenues lost as a result of implementation of this alternative. The prohibitions on take and interstate commerce, in particular, would constrain the development of commercial giant clam mariculture projects in the United States, most notably in the U.S. Pacific Island territories.</p> <p>The prohibition on take of <i>T. crocea</i>, <i>T. maxima</i>, <i>T. noae</i>, and <i>T. squamosa</i> would also have a moderate indirect adverse impact on U.S. Pacific Island communities who regularly engage in the harvest and/or non-commercial mariculture of these species for subsistence use.</p>
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5.1 Physical Environment

5.1.1 Alternative 1, No-action Alternative

The No-action Alternative would not change the nature of any use of the environment, so its implementation would not cause any additional degradation of the physical environment. No impacts to the physical environment are anticipated as a result of implementing the No-action Alternative.

5.1.2 Alternative 2, Proposed Action

The Proposed Action is not expected to cause any changes to the physical environment, as it would only prohibit the import and export of derivative parts and products of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* into and from the United States. It would not prohibit the take of these species, nor would it change in any other respect how the physical environment is managed. No impacts to the physical environment are anticipated as a result of implementing the Proposed Action.

5.1.3 Alternative 3

Alternative 3 would apply all prohibitions under section 9(a)(1) of the ESA to *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, including a prohibition on take within the United States and

its territories and on the high seas. Harvesting of these giant clams occurs where they reside in nearshore and coral reef habitats and often requires prying them from the substrate using sticks or crowbars, which can damage the coral reef framework and other hard-bottom substrates. Therefore, it is possible that a prohibition on the harvest of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* would reduce such damage to their respective habitats, resulting in minor indirect beneficial impacts to associated substrates in the physical environment.

5.2 Biological Environment

5.2.1 Alternative 1, No-action Alternative

Under the No-action Alternative, harvest and trade of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* would continue to be allowed. It would not change the current conditions but would continue to have a moderate indirect adverse impact on the population status of these species wherever they are harvested.

Additionally, as discussed in Section 2.2, the continued trade of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* into and from the United States would substantially hinder the enforcement of the ESA section 9(a)(1)(A) import/export prohibition for *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* due to the similarity in appearance of parts and products derived from giant clams. U.S. law enforcement is unable to distinguish parts and products of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* from those of *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*. This difficulty would prevent law enforcement personnel at U.S. ports of entry from quickly determining whether derivative parts and products are from any of the latter six species and would prevent them from taking appropriate actions to suppress illegal trade of these species. For this reason, the No-action Alternative allowing the continued harvest and trade of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* is expected to result in a moderate indirect adverse impact on *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*. Overall, Alternative 1 is expected to result in a moderate indirect adverse impact to the biological environment.

5.2.2 Alternative 2, Proposed Action

The Proposed Action would prohibit the import and export of derivative parts and products of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* into and from the United States and its territories. These species are widely harvested throughout their respective ranges, primarily for the purpose of subsistence use, but also commonly for commercial sale and international trade. A minor portion of the trade of these species involves the import and export of their derivative parts and products into and from the United States and its territories (see Section 4.4). Thus, the Proposed Action may reduce the extent to which *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* are harvested when the purpose of the harvest would otherwise be to import or export their derivative parts and products into or from the United States. This would likely result in minor indirect beneficial impacts to these four species via population increases throughout their respective ranges.

As discussed in Section 2.2, the Proposed Action would facilitate effective enforcement of the import and export restrictions associated with the proposed listing of *H. hippopus* as threatened and *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* as endangered under the ESA. It would allow U.S. law enforcement personnel to easily identify and take enforcement action when they identify derivative parts or products from giant clams at U.S. ports of entry. Doing so would alleviate the risk of such parts or products from *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, or *T. squamosina* being misrepresented, either accidentally or purposefully, as *T. crocea*, *T. maxima*, *T. noae*, or *T. squamosa*, in imports or exports into or from the United States. This risk of mislabeling, in conjunction with the similarity of appearance of parts and products of giant clams, would otherwise undermine the enforcement of the import and export prohibition under section 9(a)(1)(A) of the ESA for the protection of *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*. By minimizing this risk, the Proposed Action would provide additional protection to these species under the ESA, thereby improving their conservation and recovery. In this way, the Proposed Action would provide a moderate indirect beneficial impact to these species.

Lastly, given that the impact of the Proposed Action to all ten species of giant clams is expected to be beneficial, by implication, we do not anticipate any adverse impacts to biodiversity or ecosystem functioning as a result of the Proposed Action.

Overall, Alternative 2 is expected to result in a moderate indirect beneficial impact to the biological environment.

5.2.3 Alternative 3

In addition to the biological effects discussed above with respect to the Proposed Action (Section 5.2.2), Alternative 3 would yield added conservation benefits to *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, by prohibiting all take of these species and restricting commerce involving these species in the United States and by persons under the jurisdiction of the United States. As discussed in Section 4.2, these four species are distributed to varying degrees throughout the U.S. Pacific Island territories and are commonly harvested as a source of subsistence food (Neo et al., 2017). Prohibiting take of these species would eliminate this harvesting pressure, which would likely have a moderate indirect beneficial impact on their survival and population status in U.S. territorial waters.

By prohibiting all import and export, and all commerce involving these species in the United States and by persons under the jurisdiction of the United States, Alternative 3 would likely also yield minor indirect beneficial impacts to these species in areas of their respective ranges outside the United States. These four species comprise a significant component of the international ornamental aquarium industry and are commonly imported into the United States for this purpose (Kinch & Teitelbaum, 2010). Thus, removing the United States from this market by prohibiting all trade and commerce involving these species may reduce the extent to which they are harvested commercially in areas outside the United States. This would likely provide a minor indirect benefit to the survival and population status of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* throughout their ranges.

However, Alternative 3 would likely provide little if any additional conservation benefit to *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* beyond what is discussed above with respect to the Proposed Action (Alternative 2). As described in Section 2.2, the Purpose and Need of the action is to reinforce the protection of these six species by mitigating the risk that their derivative parts and products may be misrepresented in trade. The prohibition on the import and export of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* under Alternative 3 would address this need based on the same rationale as is outlined above for the Proposed Action (Section 5.2.2), but otherwise is not likely to have any additional impact on the survival or recovery of *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*. Therefore, Alternative 3 would provide a moderate indirect beneficial impact to these species.

Lastly, as with the Proposed Action, given that the impact of Alternative 3 to all ten species of giant clams is expected to be beneficial, by implication, we do not anticipate any adverse impacts to biodiversity or ecosystem functioning as a result of this alternative.

Overall, Alternative 3 is expected to result in a moderate indirect beneficial impact to the biological environment.

5.3 Socioeconomic Environment

The following is a brief discussion of the socioeconomic resources expected to be affected by the preferred alternative and other alternatives. A full discussion of the expected socioeconomic consequences from each alternative on small commercial entities is provided in the IRFA (see Appendix A).

5.3.1 Alternative 1, No-action Alternative

The No-action Alternative would result in no additional regulatory burdens or costs for entities involved in the import or export of derivative parts and products of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* into or from the United States. This alternative represents the regulatory baseline. No impacts to the socioeconomic environment are anticipated as a result of implementing the No-action Alternative.

5.3.2 Alternative 2, Proposed Action

The Proposed Action would extend section 9(a)(1)(A) of the ESA to derivative parts and products of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*, prohibiting their import into and export from the United States. Indirect adverse impacts of this alternative on small commercial entities would be minor and limited to revenue losses borne by small entity wholesalers or museums or other exhibitors of giant clam products that, absent the Proposed Action, would engage in the import and/or export of “similarity of appearance” parts and products derived from these four species. Based on a combined value of \$19,000 of U.S. imports and exports of giant clam-derived “similarity of appearance” products from 2016 to 2020, the IRFA estimates that the proposed rule would result in annualized impacts on wholesalers of \$3,700 (2023 dollars). Retailers that purchase the products from the importing entities would bear minor indirect

adverse impacts to the extent that they would otherwise generate revenue from the resale of these products. Museums or similar entities that would otherwise import and exhibit “similarity of appearance” products could bear indirect impacts through the loss of revenue if attendance declines as a result of those products not being exhibited. However, available data do not allow for quantification of such potential revenue losses to museums. While it is possible that the Proposed Action could result in a small entity wholesaler or museum with low annual revenue bearing impacts that constitute a large percentage of their annual revenue, this outcome is highly uncertain and, based on the low volume of annual U.S. imports and exports of giant clam-derived “similarity of appearance” products, would be limited to a very small number of small entities.

In addition to the commercial entities discussed above, entities or individuals in the United States that, absent the Proposed Action, would engage in the legal import and/or export of “similarity of appearance” parts and products derived from *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* for personal purposes, would be indirectly adversely impacted to the extent that they would otherwise engage in such trade. However, the recent level of such imports and exports is very low. LEMIS trade data indicate that, of the 631 shipments of giant clam meat imported into the United States for personal purposes between 2016 and 2020 (see Section 1.1), all but one were seized or refused entry at the port of entry, because they were not accompanied by valid CITES permits. An additional 250 cases of giant clam meat violations and seizures have been documented between December 2021 and October 2023. The LEMIS trade data also reveal 20 shipments of shell carvings, jewelry, and other worked shell products imported into the United States from 2016 to 2020 for personal purposes, all of which were refused or seized at the port of entry. No exports of derivative parts or products of giant clams for personal purposes were reported during this period.

The foregoing information indicates that legal imports and exports of derivative parts and products of giant clams into and from the United States in recent years have been minimal. Moreover, no information is available suggesting this type of trade would increase over the foreseeable future in the absence of the Proposed Action. Thus, any adverse impacts as a result of Alternative 2 are expected to be minor. Overall, Alternative 2 is expected to result in a minor indirect adverse impact to the socioeconomic environment.

5.3.3 Alternative 3

Alternative 3 would apply all prohibitions under section 9(a)(1) of the ESA to *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*. Prohibitions under this alternative would include, but not be limited to, the import, export, possession, sale, delivery, carrying, transport, or shipping of these species – including live or intact specimens and shells – in interstate commerce or for commercial activity. Imports and exports of live specimens would be permitted under the Proposed Action but prohibited under the Alternative 3, which, relative to the Proposed Action and No-action Alternative, would result in a moderate indirect adverse impact to small entities to the extent that they would otherwise generate revenue from sale of these four species of giant clams or their derivative products. LEMIS data indicate that there were 1,534 commercial imports into the United States and 124 exports from the United States of live specimens of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* from 2016 to 2020. The total value of the imports

was approximately \$3.12 million (2023 dollars), while the exports had a total value of approximately \$113,000. LEMIS trade data for the years 2000-2014 indicate that small businesses in the Pet and Supplies Retailers and Other Miscellaneous Nondurable Goods Merchant Wholesalers industries (NAICS codes 424990 and 459910) would bear the majority of these impacts and that these impacts would be concentrated among a small number of companies. Without knowing exactly which entities would bear these impacts, it is anticipated that impacts would range from minor to moderate, depending on the percentage of a particular impacted firm's average annual revenues lost as a result of implementation of Alternative 3. Incremental adverse impacts of Alternative 3 on small entities could also be substantially greater than those that would occur under the preferred alternative (Alternative 2) in part because of the prohibitions on take and interstate commerce, which would constrain the development of giant clam mariculture projects in the United States, most notably in the U.S. Pacific Island territories. None of the potential economic benefits that would be generated by these projects from the export or interstate trade of the maricultured clams or their derivative products would be realized under Alternative 3. Thus, this alternative could cause moderate indirect adverse impacts for potentially affected entities.

Under Alternative 3, all take of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* would also be prohibited. This would likely have a moderate indirect adverse impact on residents of the U.S. Pacific Island territories who regularly engage in the harvest and/or non-commercial mariculture of these species. Giant clam meat is consumed as a delicacy throughout American Samoa, Guam, and CNMI. Although the abundance of giant clams is lower than in the past, whenever they are encountered, locals will still harvest giant clams opportunistically and may bring the clams to shore to consume the meat at home or offer it for sale in a local market. Additionally, as is discussed in Section 4.4, the governments of American Samoa, Guam, and CNMI have pursued various attempts at establishing giant clam mariculture as a sustainable source of food and income for local communities. A relatively small portion of giant clam harvest in Guam and CNMI may also be for the use of their shells in traditional jewelry, such as the *sinahi* pendant, which is still worn widely by the CHamoru people as a symbol of their cultural heritage. These are often carved by local craftsmen who sell their products in small shops or markets. Under Alternative 3, the take prohibition under section 9(a)(1)(B) of the ESA would prohibit these activities and, in effect, alter the livelihoods of U.S. Pacific Island communities. Overall, Alternative 3 is expected to result in a moderate indirect adverse impact to the socioeconomic environment.

5.4 Environmental Justice

Federal agencies are required to address environmental justice issues in NEPA documents. Environmental justice is defined as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (*see* Executive Order 12898, Feb. 11, 1994; 59 FR 7629 (Feb. 16, 1994)). NMFS must ensure that the decision-making process for the development of the section 4(d) regulation is fair and that the impacts are evenly distributed. No single group of people, based on racial, ethnic,

socioeconomic, or another status, should bear an unequal share of any negative environmental consequences that result from the implementation of a section 4(d) regulation for *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* (see Executive Order 14008, Jan. 27, 2021; 86 FR 7619 (Feb. 1, 2021)).

The Proposed Action and alternatives would apply regardless of racial, ethnic, socioeconomic, or any other status of groups of people. Because the U.S. distribution of these four species is limited to U.S. Pacific Island territories, the anticipated adverse socioeconomic impacts under Alternative 3 (see Section 5.3.3) would likely be borne predominantly by the U.S. Pacific Islander population. Although this is not the preferred alternative, NMFS recognizes this potential under Alternative 3 and will be conducting public informational meetings in the U.S. Pacific Islands to facilitate the involvement of the affected communities by offering them an in-person opportunity to provide written or verbal input in the decision-making process. NMFS will partner with cultural liaisons to coordinate sharing the details for how to participate in these meetings among local networks and help us to make all relevant information sufficiently accessible to community members. Neither of the two action alternatives are expected to result in any negative impacts to the physical or biological environment.

5.5 Irreversible and Irrecoverable Commitments of Resources

No irreversible and irretrievable commitments of resources would be expected to result from implementation of the Proposed Action or any of the alternatives. The Proposed Action and alternatives are regulatory actions that do not implement specific actions that would involve the commitment of resources prior to evaluation of their effects.

5.6 Cumulative Effects

CEQ's NEPA regulations define cumulative effects as "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR §1508.1(g)(3)). The purpose of the cumulative impacts analysis is to ensure that federal decisions consider the full range of an action's consequences, incorporating this information into the planning process.

As discussed in Section 1.4, the separate action of listing *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* as endangered species and *H. hippopus*, *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* as threatened species is being proposed concurrently and may still occur independently of the Proposed Action considered in this EA. When considered in conjunction with these separate listing actions, Alternatives 2 and 3 are expected to contribute incrementally to the protection and conservation of *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*, by facilitating more effective enforcement of the ESA section 9(a)(1)(A) prohibition for these species. Thus, Alternatives 2 and 3 are expected to result

in an incremental cumulative benefit to these six species when considered alongside their proposed listing under the ESA.

NMFS does not expect any significant cumulative impacts from any of the three alternatives when considered alongside other federal, state, territorial, and international regulations pertaining to *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa*. Nor does NMFS expect any other actions or regulations in the foreseeable future that might cause cumulative environmental impacts as a result of the alternatives presented here.

5.7 Conclusions and Comparison of Alternatives

This section provides a summary of the impacts of implementing each alternative. None of the impacts that have been identified in this EA are considered to be significant. NMFS prefers Alternative 2, because it mitigates the risk of potential prohibited commerce of *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* in the United States, thereby contributing to the conservation and recovery of these six species, while causing only minor adverse effects on the socioeconomic environment. By limiting the regulations on *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* to a prohibition on the import and export of only their derivative parts and products, the Proposed Action (Alternative 2) facilitates the added protection for *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* without imposing undue burden on activities that are unlikely to hinder the conservation of these species, such as the harvest of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* in the U.S. Pacific Island territories or the trade of live specimens of these four species, which can be easily identified to the species level.

In contrast, the application of all ESA section 9(a)(1) prohibitions under Alternative 3 would achieve the same biological benefit with respect to *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina* and would similarly address the stated need for action, but would incrementally impact the livelihoods of U.S. Pacific Island communities who value *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* as a traditional food source and who regularly engage in the harvest and consumption of these species. Alternative 3 would also significantly constrain the live specimen trade and the development of mariculture activities for *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* in the U.S. Pacific Island territories, likely without any added conservation benefit to *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*, as compared to the Proposed Action (Alternative 2).

Lastly, NMFS does not prefer the No-action Alternative, as it does not satisfy the purpose and need. Under the No-action Alternative, the continued trade of *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* into and from the United States would substantially hinder the enforcement of the ESA section 9(a)(1)(A) import/export prohibition for *H. hippopus*, *H. porcellanus*, *T. derasa*, *T. gigas*, *T. mbalavuana*, and *T. squamosina*, and as such, would continue to pose a threat to these six species. The No-action Alternative would essentially negate the purpose for listing *T. crocea*, *T. maxima*, *T. noae*, and *T. squamosa* as threatened under section 4(e) of the ESA.

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LIST OF AGENCIES AND PERSONS CONSULTED

NOAA – NATIONAL MARINE FISHERIES SERVICE

John Rippe – Biologist, Office of Protected Resources, Endangered Species Conservation Division

David Weiss – Contractor, Ocean Associates, Inc. *in support of* Office of Protected Resources, Endangered Species Conservation Division