



BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 223

[Docket No. 160614518-8790-03]

RIN 0648-XE685

Endangered and Threatened Wildlife and Plants; Final Rule to List the Chambered Nautilus as Threatened Under the Endangered Species Act

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: We, NMFS, announce a final rule to list the chambered nautilus (*Nautilus pompilius*) as threatened under the Endangered Species Act (ESA). We have reviewed the status of the chambered nautilus, including efforts being made to protect this species, and considered public comments, including new information, submitted on the proposed rule. We have made our final determination based on the best scientific and commercial data available. At this time, we conclude that critical habitat is not determinable because data sufficient to perform the required analyses are lacking; however, we solicit information on habitat features and areas in U.S. waters that may meet the definition of critical habitat for the chambered nautilus.

DATES: This final rule is effective [*insert date 30 days after date of publication in the FEDERAL REGISTER*].

ADDRESSES: Endangered Species Division, NMFS Office of Protected Resources (F/PR3), 1315 East West Highway, Silver Spring, MD 20910. Copies of the petition, status review report, and **Federal Register** notices are available on our website at <https://www.fisheries.noaa.gov/species/chambered-nautilus>.

FOR FURTHER INFORMATION CONTACT: Maggie Miller, NMFS, Office of Protected Resources, (301) 427-8403.

SUPPLEMENTARY INFORMATION:

Background

On May 31, 2016, we received a petition from the Center for Biological Diversity to list the chambered nautilus (*N. pompilius*) as a threatened species or an endangered species under the ESA. We found that the petitioned action may be warranted for the species and announced the initiation of a status review (81 FR 58895, August 26, 2016). On October 23, 2017, we announced a positive 12-month finding on the petition and published a proposed rule to list the chambered nautilus as a threatened species under the ESA (82 FR 48948). We solicited information on the proposed listing determination, the potential development of proposed protective regulations, and potential designation of critical habitat for the chambered nautilus. The comment period was open through December 22, 2017, and no hearing requests were received. This final rule provides an overview of the ESA listing and status review process for this species; a discussion of the comments and information we received during the public comment period, as well as our responses to those comments; a summary of the statutory listing factors and other considerations supporting the listing determination; and our final ESA listing

determination for the chambered nautilus. This rule should be read in conjunction with the proposed rule.

Listing Species Under the Endangered Species Act

We are responsible for determining whether species are threatened or endangered under the ESA (16 U.S.C. 1531 *et seq.*). To make this determination, we first consider whether a group of organisms constitutes a “species” under section 3 of the ESA, then whether the status of the species qualifies it for listing as either threatened or endangered.

Section 3 of the ESA defines “species” to include any subspecies of fish or wildlife or plants and, for any vertebrate species, any distinct population segment (DPS) that interbreeds when mature (16 U.S.C. 1532(16)). Because the chambered nautilus is an invertebrate, the ESA does not permit us to consider listing populations as DPSs.

Section 3 of the ESA defines an “endangered species” as a species which is in danger of extinction throughout all or a significant portion of its range and a “threatened species” as one 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(6); (20). Thus, in the context of the ESA, we interpret an “endangered species” to be one that is presently in danger of extinction. A “threatened species” is not presently in danger of extinction, but is likely to become so in the foreseeable future (that is, at a later time). In other words, the primary statutory difference between a threatened and endangered species is the timing of when a species is or is likely to become in danger of extinction, either presently (endangered) or in the foreseeable future (threatened).

As we explained in the proposed rule and summarize here, when we consider

whether a species might qualify as threatened under the ESA, we must consider the meaning of the term “foreseeable future.” It is appropriate to interpret “foreseeable future” as the horizon over which predictions about the conservation status of the species can be reasonably relied upon. The appropriate timescales for analyzing various threats will vary with the data available about each threat. The foreseeable future considers the life history of the species, habitat characteristics, availability of data, particular threats, ability to predict threats, and the ability to reliably forecast the effects of these threats and future events on the status of the species under consideration. Because a species may be susceptible to a variety of threats for which different data are available, or which operate across different time scales, the foreseeable future is not necessarily reducible to a particular number of years.

The statute also requires us to determine whether any species is endangered or threatened throughout all or a significant portion of its range as a result of any one or a combination of the following factors: the present or threatened destruction, modification, or curtailment of its habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms to address identified threats; or other natural or manmade factors affecting its continued existence (ESA section 4(a)(1)(A)-(E); 16 U.S.C. 1533(a)(1)(A)-(E). *See also* 50 C.F.R. 424.11(c)).

To make a listing determination, we first determine whether a petitioned species meets the ESA definition of a “species.” Next, using the best available information gathered during the status review for the species, we assess the extinction risk of the

species. In assessing the extinction risk of a species, in conjunction with the section 4(a)(1) factors, we consider demographic risk factors, such as those developed by McElhany *et al.* (2000), to organize and evaluate the forms of risks. The demographic risk analysis is an assessment of the manifestation of past threats that have contributed to the species' current status and also informs the consideration of the biological response of the species to present and future threats. The approach of considering demographic risk factors to help frame the consideration of extinction risk has been used in many of our previous status reviews (see https://www.fisheries.noaa.gov/resources/documents?title=&field_category_document_value%5Besa_status_review%5D=esa_status_review&species=&field_species_vocab_target_id=&sort_by=created for links to these reviews). In this approach, the collective condition of individual populations is considered at the species level according to four demographic viability factors: abundance and trends, population growth rate or productivity, spatial structure and connectivity, and genetic diversity. These viability factors reflect concepts that are well-founded in conservation biology and that individually and collectively provide strong indicators of extinction risk.

Where a species is found not to warrant listing throughout its range, we must go on to evaluate whether the species may be endangered or threatened in a “significant portion of its range.” Conversely, where a species is found to warrant listing as an endangered species or a threatened species based on a review of its status throughout its range, it is not necessary to proceed to an evaluation of potentially significant portions of the range. As explained more fully in the proposed rule, we interpret the Act to require

that, where the best available information allows us to determine a status for the species rangewide, that status determination should be given conclusive weight. Our interpretation is also consistent with the 2014 Final Policy on Interpretation of the Phrase “Significant Portion of its Range” (79 FR 37578, July 1, 2014).¹

Section 4(b)(1)(A) of the ESA requires us to make listing determinations based solely on the best scientific and commercial data available after conducting a review of the status of the species and after taking into account any efforts being made by any State or foreign nation or political subdivision thereof to protect the species. 16 U.S.C. 1533(b)(1)(A). Therefore, prior to making a listing determination, we also assess such protective efforts to determine if they ameliorate the existing threats to a degree that would affect the listing status of the species under the Act. Any relevant foreign efforts are directly evaluated under standards deducible from section 4(b)(1)(A) and the statute’s structure.

Status Review

A summary of basic biological and life history information of the chambered nautilus can be found in the proposed rule and the status review report. In reaching our proposed listing determination, we used the best available scientific and commercial data on the chambered nautilus, which are summarized in the status review report and incorporated herein.

¹ Although two district courts have held in litigation involving the United States Fish and Wildlife Service (USFWS) that the Final Policy’s specific definition of “significant” is too narrow (*Center for Biological Diversity, et al. v. Jewell*, CV–14–02506 (D. Ariz.); *Desert Survivors, et al. v. Dep’t of Interior*, 16-cv-01165 (N.D. Cal.)), all other provisions of the Final Policy continue in full effect for both Services, including the provisions establishing the overall process for sequencing determinations. Nevertheless, our approach is reached and applied independently of the Final Policy.

Scientific conclusions about the overall risk of extinction faced by the chambered nautilus under present conditions and in the foreseeable future are based on our evaluation of the species' demographic risks and ESA section 4(a)(1) threat factors. Our assessment of overall extinction risk considered the likelihood and contribution of each particular factor, synergies among contributing factors, and the cumulative impact of all demographic risks and threats on the chambered nautilus. After considering conservation efforts by foreign nations to protect the species, as required under section 4(b)(1)(A), we proposed to list the species as a "threatened species."

For the assessment of extinction risk for the chambered nautilus, the "foreseeable future" was considered to extend out several decades (> 40 years). Given the species' life history traits, with longevity estimated to be at least 20 years, maturity ranges from 10 to 17 years, with very low fecundity (potentially 10–20 eggs per year with a 1-year incubation period), it would likely take more than a few decades (*i.e.*, multiple generations) for any recent management actions to be realized and reflected in population abundance indices. Similarly, the impact of present threats to the species could be realized in the form of noticeable population declines within this time frame, as demonstrated in the available survey and fisheries data. As the main potential operative threat to the species is overutilization, this time frame would allow for reliable predictions regarding the impact of current levels of fishery-related mortality on the biological status of the species. Additionally, this time frame allows for consideration of the previously discussed impacts on chambered nautilus habitat from climate change and the potential effects on the status of this species.

To make our final listing determination, we reviewed all comments and information provided during the public comment period on the proposed rule. In general, this additional information merely supplemented, and did not differ significantly from, the information presented in the proposed rule. Where new information was received, we have reviewed it and present our evaluation of the information in this final rule. The new information received was not so significant that we are relying on it for our final determination.

With this rule, we finalize our listing determination for the chambered nautilus as a “threatened species.”

Summary of Comments

In response to our request for public comments on the proposed rule, we received comments and/or relevant information from 16 parties. The large majority of commenters supported the proposed listing determination but provided no new or substantive data or information relevant to the listing of the chambered nautilus. We also solicited comments from the countries where the chambered nautilus occurs via their ambassadors and received a response from the Philippines Bureau of Fisheries and Aquatic Resources and the Government of India. Summaries of the substantive public comments received and our responses are provided below and organized by topic.

Comments on Available Data, Trends, and Analysis

Comment 1: Two commenters provided their personal observations regarding the decline of the chambered nautilus in the Indo-Pacific. One commenter noted that during their 20 years as a researcher studying the chambered nautilus, 1-2 of their study sites are

now 100 percent depleted and others are rapidly following suit. Another commenter provided information on historical and current nautilus fishing practices in the Philippines. The commenter stated that nautilus fishing was more lucrative in the 1970s and 1980s in the region of Central Visayas (particularly the Tañon Strait municipalities) compared to the end of the 1990s, resulting in reduced fishing effort of the species. In March 2017, interviews conducted with three shell exporters on Mactan Islands (the major export hub for sea shells from Philippine waters) revealed that they had a few hundred nautilus shells in stock (despite the ban on trade in nautilus shells). The commenter also stated that there are known locations in Central Palawan as well as the southern tip of the island where nautilus fisheries were or still exist. However, the commenter noted that it is unclear whether the nautilus is a target species or just landed as bycatch. The commenter stressed the importance of obtaining information on current and historical fishing activities in order to obtain a better understanding of the present status of nautilus populations in the Philippines.

Response: We thank the commenters for the information. We have updated the status review report (Miller 2018) to reflect the new information provided regarding the March 2017 interviews, which further supports our conclusion that existing regulations to protect *N. pompilius* from overutilization throughout the Philippines are inadequate. We agree with the commenter that fisheries information is useful when examining the status of nautilus populations.

Comment 2: One commenter provided new published information on the genetics of the *Nautilus* genus, including an estimated effective population size of *N. pompilius*

across the Indo-Pacific. Specifically, the commenter referenced the study by Combosch *et al.* (2017), which used genome-wide double digest restriction-site associated DNA data to re-analyze nautiloid species taxonomy. The commenter noted that the results from the new study suggest that the geographic distribution of *N. pompilius* may be smaller than previously thought, and would not include nautilids found in the Coral Sea and Southwest Pacific. However, the commenter noted that further research is needed to validate the results before a final decision on the actual geographical range of *N. pompilius* is made. In fact, the commenter stated that given that further research is still necessary, NMFS should rely on the best available science and list *N. pompilius* as one species (one “superspecies”) throughout its range, as stated in the proposed rule.

In terms of effective population size, the commenter noted that the estimates provided in Combosch *et al.* (2017) generally tend to be in agreement with previous genetic studies (*i.e.*, Williams *et al.* (2015)). While the estimates are rather large (for example, ~4.5 million specimens of *N. pompilius* may potentially exist in the entire Indo-Pacific), the commenter cautioned that the data are more than two decades old and represent what the species could potentially support based on its current genetic diversity, not its current living population abundance estimate. The commenter cautioned that the substantial removal of individuals from *N. pompilius* populations in recent decades, and potential losses in genetic diversity, would take some time before being reflected in genetic-based effective population sizes. Ultimately, the commenter requested that the new genetic information, discussed above, be included in the final rule.

Response: We reviewed the paper referenced by the commenter (Combosch *et al.* 2017) and have updated the status review report with this new information. Specifically, Combosch *et al.* (2017) indicate the existence of three main *Nautilus* clades: South Pacific, Coral Sea, and Indo-Pacific. The authors contend that these three clades consist of five distinct genetic clusters of *Nautilus* that most likely correspond to five different species. Three of these species exist in the South Pacific, including *N. macromphalus* in New Caledonia and two undescribed species (one around American Samoa and Fiji and the other around Vanuatu). A fourth species is found from the Great Barrier Reef to eastern Papua New Guinea, which the authors consider to be *N. stenomphalus*. The fifth species, *N. pompilius*, occurs from Western Australia throughout Indonesia and the Philippines and west to Palau. The authors also suggest that *N. belauensis* and *N. repertus* should be synonymized with *N. pompilius* as they are both nested within this Indo-Pacific clade.

While the results from Combosch *et al.* (2017) contrast with our characterization of *N. pompilius* and its range within the status review report and proposed rule, we find that this new information does not change our recognition of *N. pompilius* as a valid species for listing under the ESA, or our description of the species and its range based on the best available information. As noted in the status review report and proposed rule, nautilus taxonomy is controversial and is still not fully resolved. Until there is a new scientific agreement regarding the taxonomy of the *Nautilus* genus, we will continue to follow the latest scientific consensus as acknowledged by the Integrated Taxonomic Information System, with *N. pompilius* identified as one of five recognized species (N.

pompilius, *N. belauensis*, *N. macromphalus*, *N. repertus*, and *N. stenomphalus*). In terms of range, we find that the best available information suggest that *N. pompilius* is found throughout the Indo-Pacific and within the South Pacific, including waters off American Samoa, Australia, Fiji, India, Indonesia, Malaysia, New Caledonia, Papua New Guinea, Philippines, Solomon Islands, and Vanuatu. *Nautilus pompilius* is also possibly native to China, Myanmar, Western Samoa, Thailand, and Vietnam.

With respect to the new effective population size estimates in Combosch *et al.* (2017), we have updated the status review report with this data. The authors estimated median current effective population sizes for each of the genetic clades mentioned above (Indo-Pacific, Coral Sea, South Pacific) and found large population sizes in the panmictic Indo-Pacific population (4.5×10^6 specimens; 3.2×10^6 for the Philippines subpopulation) and in the Coral Sea (7.2×10^6 for the Great Barrier Reef and 5.7×10^6 for Papua New Guinea). The South Pacific clade had much smaller effective population sizes, with New Caledonia at 0.34×10^6 specimens, Vanuatu at 0.67×10^6 specimens, and American Samoa/Fiji population at 0.41×10^6 specimens. As the commenters note, these estimates are similar to those from previous genetic studies as reported Williams *et al.* (2015). Specifically, Williams *et al.* (2015) estimated an effective population size for the Philippines of 3.2×10^6 individuals, and 2.6×10^6 individuals for Western Australia. While this new data further support the suggestion that the species may have high genetic diversity, we agree with the commenters that the current level of genetic diversity across the entire range of the species remains highly uncertain. Due to the low fecundity and long generation time of the species, genetic responses to current exploitation rates (such

as decreases in genetic diversity) may not yet be detectable. We have updated the status review report with this new data but do not find that it changes our conclusions regarding the risk that genetic diversity currently poses to the species.

Comments on Existing Regulatory Mechanisms

Comment 3: The Philippines Bureau of Fisheries and Aquatic Resources (the Bureau) provided information regarding existing regulations. Specifically, the Bureau stated that under Section 102 (b) of the Philippine Fisheries Code of 1998 (RA 8550 as amended by RA 10654), it is unlawful to fish, take, catch, gather, sell, purchase, possess, transport, export, forward or ship out aquatic species listed under Appendix II and III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Based on the listing of the chambered nautilus in Appendix II of CITES during the Conference of the Parties in 2016, the prohibition became effective on January 2, 2017. However, the export of government-inventoried chambered nautilus Pre-Convention specimens used in the shell craft industry of Cebu, Philippines is allowed until 2018.

Response: We thank the Bureau for its comment and have updated the status review report to reflect this regulation. However, at this time, we have no information regarding the effectiveness of this prohibition, including subsequent enforcement efforts, in protecting the chambered nautilus from continued overutilization throughout the Philippines. Available information from the status review report suggests enforcement of current regulations may be lacking, with evidence of nautilus products being sold in shops in Cebu, the Western Visayas region, and Palawan as recently as 2017, despite

local ordinances that prohibit the trade and harvest of *N. pompilius*. Given the significant harvest and trade of the chambered nautilus throughout the Philippines (with the Philippines being the number one supplier of nautilus commodities to the United States) and present uncertainty regarding the enforcement of existing regulatory measures and subsequent adequacy in reducing the threat of overutilization to the species in the foreseeable future, we find that our conclusions regarding threats to the species and its extinction risk remains the same.

Comment 4: The Government of India (the Government) provided information on India's existing regulations related to the protection of the chambered nautilus. Specifically, the Government commented that the chambered nautilus is listed on Schedule I of India's Wild Life (Protection) Act, 1972, which provides the species with the highest degree of protection from hunting and trade. Commercial trade of *N. pompilius* in India is not permitted. Additionally, the Government states that there are no reports of captures of chambered nautiluses in Indian fishery landing centers. However, the Government notes that illegal trade in the species cannot be ruled out.

The Government of India also commented that India, along with Fiji and the United States, proposed the listing of Nautilidae on Appendix II of CITES during the 17th meeting of the Conference of the Parties to CITES. Considering this, the Government states that India has no objections to the listing of the species as threatened under the ESA.

Response: We thank the Government of India for its comment and support of the listing of chambered nautilus under the ESA. In the status review report, we recognized

the listing of *N. pompilius* under Schedule I of the Indian Wild Life (Protection) Act of 1972; however, we found information indicating that *N. pompilius* shells were still being collected in Indian waters and sold in major coastal tourist curio markets as recently as 2007 (John *et al.* 2012). In fact, interviews with retail vendors suggested that a large majority were aware of the Indian Wild Life Protection Act and legal ramifications of selling protected species yet continued to sell large quantities of protected marine mollusks and corals in the curio shops (John *et al.* 2012). Additionally, based on the shell size of the chambered nautilus in the curio shops, we found it likely that the inventory is comprised entirely of shells from immature individuals. While India may prohibit the harvest and trade of chambered nautilus, the best available information suggests that the species is still being exploited, with the high demand for nautilus shells and profits from the illegal curio trade resulting in the overutilization of *N. pompilius* that will continue to threaten populations within Indian waters. With no new information to consider regarding the effectiveness of enforcement of India's existing regulatory mechanisms, we find that our conclusions regarding threats to the species and its extinction risk remains the same.

Comments on Proposed Listing Determination

Comment 5: We received a number of comments that supported the proposed listing of the chambered nautilus as a threatened species under the ESA. A large majority of the comments were general statements of support for listing and were not accompanied by substantive information or references. Some of the comments were accompanied by information that is consistent with, or cited directly from, our proposed rule or status review report.

Response: Given that no new substantive information was provided in these comments that was not already considered in the proposed rule or status review report, our conclusion regarding the status of the chambered nautilus remains the same. We acknowledge these comments and the considerable public interest expressed in support of the conservation of the chambered nautilus.

Comment 6: Several commenters requested that we list the chambered nautilus as an endangered species under the ESA. One commenter stated that listing as endangered is warranted for a host of reasons including: how little is known about the biology and ecology of the chambered nautilus; lack of information on population abundance and trends in vast portions of the species' range; the species' reproductive characteristics (*i.e.*, long-lived, late maturing, slow growing); its patchy distribution, geographic isolation, specialized habitat needs, and genetic distinction between populations; the massive level of international trade in the species (including in to the United States); and the lack of effective regulations protecting the species where it exists. The commenter suggested that the "precautionary principle" would indicate that the species should be listed as an endangered species.

Response: The commenters did not provide any new information regarding threats to the species or its current status that was not already considered in the status review report or proposed rule. One commenter cited the proposed rule and status review report to support their argument of listing the chambered nautilus as, "preferably," an endangered species. With no new information to consider, our conclusion regarding the status of the chambered nautilus remains the same.

Regarding the request to use a precautionary approach when making a listing decision, it would be inappropriate to apply a presumption in favor of a particular listing status under the Act. Under the framework of the ESA, the threshold determination of whether or not to list a species is required to be a scientific conclusion based solely on the best available scientific and commercial information. In carrying out other provisions under the ESA that come into play after the time of listing, such as conducting consultations under section 7, it may be appropriate to apply a “precautionary approach” or give the benefit of the doubt to the species. But such considerations do not apply at the step of making a listing determination under Section 4. *Trout Unlimited v. Lohn*, 645 F. Supp. 2d 929, 947-48 (D. Or. 2007). We simply may not list a species as endangered unless the best available scientific and commercial information supports concluding that it meets the statutory definition of an “endangered species” at the time of listing.

Comments on Establishing Protective Regulations Under Section 4(d) of the ESA

Comment 7: Two commenters urged us to promulgate a section 4(d) rule to establish import prohibitions of the species into the United States and other trade regulations, as well as to require permits in order to address the threat of unsustainable overharvesting of the species that supports the international shell trade. As support for their request, one commenter stated that the CITES protection for the species will not be enough to prevent it from becoming endangered in the foreseeable future because illegal trade is likely to happen. Additionally, the commenter noted that without ESA protections, unregulated interstate sale (including from American Samoa) would continue. Thus, even with the CITES Appendix II listing, the commenter stated that

regulatory mechanisms remain inadequate to ensure the species' survival in the foreseeable future. The commenters noted that a 4(d) rule restricting trade, including import prohibitions, would allow the U.S. authority to review CITES non-detriment findings and make their own determinations as well as ensure adequate trade restrictions where domestic efforts to protect the species in foreign countries have failed.

Response: Under the ESA, if a species of fish or wildlife is listed as endangered, a number of protections set out in section 9(a)(1) of the Act (16 U.S.C. 1538(a)(1)) automatically apply. Among other prohibitions, any "take" of, import into or export from the United States, and interstate or foreign commerce in the species, is illegal, subject to certain exceptions. In the case of a species listed as threatened, the protections of section 9 do not automatically apply. However, section 4(d) of the ESA gives the Secretary the authority to issue such regulations as he or she deems necessary and advisable to provide for the conservation of the species. The Secretary may also prohibit with respect to a threatened species any or all of the acts prohibited under section 9(a)(1) of the ESA. 16 U.S.C. 1533(d).

While the commenter stated that CITES protection for the species would not be sufficient to prevent the chambered nautilus from becoming endangered in the foreseeable future, the commenter pointed to no information regarding current implementation efforts and enforcement of CITES requirements, or overall effectiveness of the CITES Appendix II listing in ensuring the sustainable trade of the chambered nautilus to support their assertion. If sustainable trade in this species is achieved as a result of the CITES Appendix II listing, the need for additional protective measures

would be unnecessary; however, at this time, we are still evaluating the effectiveness of the CITES Appendix II listing of the chambered nautilus. Also, in response to the commenter's concerns regarding interstate commerce, as mentioned in the proposed rule and status review report, we found no evidence of local utilization or commercial harvest of chambered nautilus in American Samoa. Therefore, any sale of non-imported chambered nautilus shells in interstate commerce would likely involve collected drift shells from American Samoa (*i.e.*, the only portion of the species' range in U.S. waters). As such, we do not agree with the commenter that this interstate commerce places the species at risk of extinction at this time.

Summary of Changes from the Proposed Listing Rule

We did not receive, nor did we find, data or references that presented substantial new information that would cause us to change our proposed listing determination. We did, however, make several revisions to the final status review report (Miller 2018) to incorporate, as appropriate, relevant information received in response to our request for public comments.

Specifically, we updated the status review to include new information regarding the sale of nautilus shells in the Philippines (K. Schroeder, pers. comm. 2017), the taxonomy of the species (Combosch *et al.* 2017), and estimates of effective population sizes for nautilus populations (Combosch *et al.* 2017). As noted above, with more detailed discussion in the previous comment responses, consideration of this new information did not alter any conclusions (and in some cases further supported our conclusions) regarding the threat assessment or extinction risk analysis for the chambered

nautilus. Thus, the conclusion contained in the status review report and determination based on that conclusion in the proposed rule are reaffirmed in this final action.

Species Determination

As noted previously, nautilus taxonomy is controversial and still not fully resolved. However, the current scientific consensus is that *N. pompilius* is a recognized taxonomically-distinct species and, therefore, meets the definition of “species” pursuant to section 3 of the ESA, making it eligible for listing under the ESA.

Summary of Demographic Risk Analysis

As stated previously and as discussed in the proposed rule (82 FR 48948, October 23, 2017), we conducted a demographic risk analysis for the chambered nautilus. This analysis evaluated the population viability characteristics and trends data available for the species to determine the potential risks these demographic factors pose to the species. Based on the available data, we found that the species exists as small and isolated populations throughout its range, with low rates of dispersal and little gene flow among populations, particularly those that are separated by large geographic distances and deep ocean expanses. Genetic variability within the species has likely been reduced due to bottleneck events and genetic drift in the small and isolated *N. pompilius* populations throughout its range. Additionally, the data indicate that the chambered nautilus is a slow-growing and late-maturing species (with maturity estimated between 10 and 17 years, and longevity at least 20 years) with likely very low productivity and, thus, is extremely susceptible to decreases in its abundance. In fact, the data suggest that many chambered nautilus populations are in decline and may be extirpated in the next several

decades.

The comments that we received on the proposed rule provided information that was either already considered in our analysis, was not substantial or relevant, or was consistent with or reinforced information in the status review report and proposed rule. Therefore, our consideration of the information received has not altered our analysis of the demographic risks to the species.

Summary of ESA Section 4(a)(1) Factors Affecting the Chambered Nautilus

As stated previously and as discussed in the proposed rule (82 FR 48948, October 23, 2017), we considered whether any one or a combination of the five threat factors specified in section 4(a)(1) of the ESA are contributing to the extinction risk of the chambered nautilus and result in the species meeting the definition of “endangered species” or “threatened species.” The primary threat to the chambered nautilus is overutilization through commercial harvest to meet the demand for the international nautilus shell trade. Out of the 10 nations where *N. pompilius* is known to occur, potentially half have targeted nautilus fisheries either historically or currently. These waters comprise roughly three-quarters of the species’ known range. Current estimated levels of harvest to meet the international demand are projected to lead to extirpations of local *N. pompilius* populations as has been observed in the past. Additionally, efforts to address overutilization of the species through regulatory measures appear inadequate, with evidence of targeted fishing of and trade in the species, particularly in Indonesia, Philippines, and China, despite prohibitions.

The comments that we received on the proposed rule provided information that

was either already considered in our analysis, was not substantial or relevant, or was consistent with or reinforced information in the status review report and proposed rule. Therefore, our consideration of the information received has not led us to change our conclusions regarding any of the section 4(a)(1) factors or their interactions. All of the information, discussion, and conclusions regarding the factors affecting the chambered nautilus contained in the final status review report (Miller 2018) and the proposed rule is reaffirmed in this final action.

Extinction Risk

As discussed previously, the status review report evaluated the demographic risks to the chambered nautilus according to four categories—abundance and trends, population growth/productivity, spatial structure/connectivity, and genetic diversity. As a concluding step, after considering all of the available information regarding demographic and other threats to the species, we rated the species' extinction risk according to a qualitative scale (high, moderate, and low risk). We found that *N. pompilius* is at a moderate risk of extinction throughout its range. We explained in the proposed rule that a species is at a “moderate risk” of extinction when it is on a trajectory that puts it at a high level of extinction risk in the foreseeable future. A species may be at moderate risk of extinction because of projected threats or declining trends in abundance, productivity, spatial structure, or diversity. While the chambered nautilus is still traded in considerable amounts (upwards of thousands to hundreds of thousands annually), with evidence of new sites being established for nautilus fishing (*e.g.*, in Indonesia, Philippines, Papua New Guinea), and areas of stable, unfished populations (*e.g.*, eastern Australia, American

Samoa), we concluded that without adequate measures controlling the overutilization of the species, *N. pompilius* is on a trajectory where its overall abundance will likely see significant declines within the foreseeable future eventually reaching the point where the species' continued persistence will be in jeopardy. We, therefore, determined that the species is not presently in danger of extinction throughout its range but is likely to become so within the foreseeable future (*i.e.*, the species is a threatened species). Because we find that the chambered nautilus is likely to become an endangered species within the foreseeable future throughout its range, we do not go on to consider whether the species might be threatened or endangered in a significant portion of its range, for the reasons explained in the *Listing Species Under the Endangered Species Act* section above and more fully in the proposed rule.

The information received from public comments on the proposed rule was either already considered in our analysis, was not substantial or relevant, or was consistent with or reinforced information in the status review report and proposed rule. Therefore, our consideration of the information received has not altered our view of the extinction risk of the chambered nautilus. Our conclusion regarding the extinction risk for the chambered nautilus remains the same. Therefore, all of the information, discussion, and conclusions on the extinction risk of the chambered nautilus contained in the final status review report and the proposed rule is reaffirmed in this final action.

Protective Efforts

In addition to regulatory mechanisms (considered under ESA section 4(a)(1)(D)), we considered other efforts being made to protect the chambered nautilus (pursuant to

ESA section 4(b)(1)(A)). The efforts we evaluated included a non-profit campaign devoted to raising the awareness of threats to the chambered nautilus and the potential for aquaculture or artificial propagation programs to satisfy the trade industry demand for shells and restore wild populations. We considered whether such protective efforts sufficiently ameliorated the identified threats to the point that they would alter the conclusions of the extinction risk analysis for the species so as to possibly avoid the need to list. None of the information we received on the proposed rule affected our conclusions regarding conservation efforts to protect the chambered nautilus. Thus, all of the information, discussion, and conclusions on the protective efforts for the chambered nautilus contained in the final status review report and proposed rule are reaffirmed in this final action.

Final Determination

We have reviewed the best available scientific and commercial information, including the petition, the information in the final status review report (Miller 2018), the comments of peer reviewers, and public comments. None of the information received since publication of the proposed rule (82 FR 48948, October 23, 2017) altered our analyses or conclusions that led to our determination for the chambered nautilus. Therefore, the determination in the proposed rule is reaffirmed in this final rule and stated below.

Based on the best available scientific and commercial information, and after considering efforts being made to protect *N. pompilius*, we conclude that the chambered nautilus is not currently in danger of extinction throughout its range but is likely to

become so in the foreseeable future throughout all of its range from threats of overutilization and the inadequacy of existing regulatory mechanisms. Therefore, we have determined that the chambered nautilus meets the definition of a “threatened species” and list it as such throughout its range under the ESA.

Effects of Listing

Conservation measures provided for species listed as endangered or threatened under the ESA include designation of critical habitat, to the maximum extent prudent and determinable (16 U.S.C. 1533(a)(3)(A)); development of recovery plans (16 U.S.C. 1533(f)); Federal agency consultations with NMFS under section 7 of the ESA to ensure their actions are not likely to jeopardize the species or result in adverse modification or destruction of critical habitat, should it be designated (16 U.S.C. 1536); and, for endangered species, prohibitions on taking and certain other activities (16 U.S.C. 1538). Prohibitions on taking, or other protections, may also be extended through regulation to threatened species. (16 U.S.C. 1533(d)). In addition, recognition of the species’ imperiled status through listing can indirectly inform voluntary conservation actions by Federal and State agencies, foreign entities, private groups, and individuals.

Protective Measures and Prohibitions

Section 7(a)(2) (16 U.S.C. 1536(a)(2)) of the ESA and NMFS/USFWS regulations (50 CFR part 402) require Federal agencies to consult with us to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of listed species or destroy or adversely modify critical habitat. Our section 7 regulations require the responsible Federal agency to initiate formal consultation if a

Federal action may affect a listed species or its critical habitat (50 CFR 402.14(a)). Examples of Federal actions that may affect the chambered nautilus include: fishery harvest and management practices, energy projects, discharge of pollution from point sources, non-point source pollution, dredging, mining, pile-driving, military activities, toxic waste and other pollutant disposal, and shoreline development. This list is not exhaustive, and the extent to which consultation is required will depend on the particular facts of any particular proposed Federal action.

In the case of threatened species, ESA section 4(d) gives the Secretary discretion to issue such regulations as he or she deems necessary and advisable for the conservation of the species. 16 U.S.C. 1533(d). The Secretary may also decide to extend some or all the prohibitions of section 9(a)(1) of the ESA (16 U.S.C. 1538(a)(1)) to the species.

As mentioned in the status review report and proposed rule, all nautilus species were included on Appendix II of CITES in October 2016, with the listing going into effect in January 2017. Export of nautilus products, such as shells, requires CITES permits that ensure the products were legally acquired and that the Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species (after taking into account factors such as its population status and trends, distribution, harvest, and other biological and ecological elements). In the proposed rule, this CITES protection was determined not to have ameliorated the threats to the threatened chambered nautilus because the CITES listing had only recently gone into effect and, therefore, we lacked information that would allow us to fully evaluate its adequacy in decreasing the threat of overutilization. We are still in the process of

collecting information in order to evaluate the effectiveness of this CITES Appendix II listing of the chambered nautilus as a tool to ensure the sustainable trade in this species. If we determine that additional measures may be necessary to safeguard the species against future depletion of populations or potential extinction of the chambered nautilus, then we may issue protective regulations under section 4(d) or extend some or all of the prohibitions of section 9(a)(1) of the ESA that automatically apply with respect to endangered species. However, at this time, we are not proposing to apply such prohibitions to the chambered nautilus. We may consider potential protective regulations pursuant to section 4(d) for chambered nautilus in a future rulemaking.

Critical Habitat

Critical habitat is defined in section 3 of the ESA (16 U.S.C. 1532(5)) as: (1) the specific areas within the geographical area occupied by a species, at the time it is listed, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon a determination that such areas are essential for the conservation of the species. “Conservation” means the use of all methods and procedures needed to bring the species to the point at which listing under the ESA is no longer necessary (*i.e.*, the point at which it is “recovered”). 16 U.S.C. 1532(3). Section 4(a)(3)(A) of the ESA (16 U.S.C. 1533(a)(3)(A)) requires that, to the maximum extent prudent and determinable, critical habitat be designated concurrently with the listing of a species. Designations of critical habitat must be based on the best scientific data available and must take into

consideration the economic, national security, and other relevant impacts of specifying any particular area as critical habitat.

At this time, we find that critical habitat for the chambered nautilus is not determinable because data sufficient to perform the required analyses are lacking. As stated in the status review report and proposed rule, while it is known that chambered nautilus are extreme habitat specialists, found in association with steep-sloped forereefs with sandy, silty, or muddy-bottomed substrates, and in depths from around 100 meters to 500 meters, the presence of these features does not necessarily indicate the likelihood of chambered nautilus occurrence. Chambered nautilus have a patchy distribution and, given the difficulty associated with accessing their habitat and observing the species for research purposes, very little is known regarding important aspects of the species' life history, such as reproduction and growth in the wild. As such, we find that sufficient information is not currently available to: 1) identify the physical and biological features essential to conservation of the species at an appropriate level of specificity, particularly given the uncertainty regarding habitat features necessary to support important life history needs and the irregularity and unpredictability of chambered nautilus within areas they are known to occur, 2) determine the specific geographical areas that contain the physical and biological features essential to conservation of the species, and 3) assess the impacts of the designation. Therefore, public input on features and areas under U.S. jurisdiction that may meet the definition of critical habitat for the chambered nautilus is invited. Additional details about specific types of information sought are provided in the *Information Solicited* section later in this document. Input may be sent to the Office of

Protected Resources in Silver Spring, Maryland (see **ADDRESSES**). Please note that we are not required to respond to any input provided on this matter.

Information Solicited

Because critical habitat is not currently determinable for the chambered nautilus, we are not proposing to designate critical habitat in this rulemaking. We request interested persons to submit relevant information regarding the identification of critical habitat of the chambered nautilus, including specific areas within the geographical area occupied by the species that include the physical or biological features essential to the conservation of the species and that may require special management considerations or protection. Areas outside the occupied geographical area should also be identified if such areas themselves are essential for the conservation of the species. ESA implementing regulations at 50 CFR 424.12(g) specify that critical habitat shall not be designated within foreign countries or in other areas outside of U.S. jurisdiction. Therefore, we request information only on potential areas of critical habitat within U.S. jurisdiction.

Section 4(b)(2) of the ESA requires the Secretary to consider the economic impact, impact on national security, and any other relevant impact of designating a particular area as critical habitat. Section 4(b)(2) also gives the Secretary discretion to consider excluding from a critical habitat designation any particular area where the Secretary finds that the benefits of exclusion outweigh the benefits of including the area in the designation, unless excluding that area will result in extinction of the species.

To inform our consideration of potential critical habitat, we also request information describing the following with respect to the relevant features or areas: (1)

activities that may affect the essential features or threats to the essential features, or to an area of potential critical habitat itself; (2) activities that could be affected by designating specific areas as critical habitat; and (3) the positive and negative economic, national security and other relevant impacts, including benefits to the recovery of the species, likely to result if specific areas are designated as critical habitat. We seek information regarding the conservation benefits of designating areas under U.S. jurisdiction as critical habitat. In keeping with the guidance provided by the Office of Management and Budget (2000; 2003), we seek information that would allow the monetization of these effects to the extent possible, as well as information on qualitative impacts.

Information submitted may include, but need not be limited to: (1) scientific or commercial publications; (2) administrative reports, maps or other graphic materials; and (3) information received from experts. Information and data are particularly sought concerning: (1) maps and specific information describing the amount, distribution, and use type (*e.g.*, foraging, reproduction) of chambered nautilus habitats, as well as any additional information on occupied and unoccupied habitat areas; (2) the reasons why any habitat should or should not be included in a designation of critical habitat under sections 3(5)(A) and 4(b)(2) of the ESA; (3) information regarding the benefits of designating particular areas as critical habitat or of excluding particular areas; (4) current or planned activities in the areas that might be proposed for designation and their possible impacts; (5) any foreseeable economic or other potential impacts resulting from designation, and in particular, any impacts on small entities; (6) whether specific unoccupied areas may be essential to provide additional habitat areas for the conservation of the species; and (7)

potential peer reviewers for a proposed critical habitat designation, including persons with biological and economic expertise relevant to the species, region, and designation of critical habitat. We solicit information from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party (see **ADDRESSES**).

References

A list of all references cited in this final rule is available at www.regulations.gov (identified by docket number NOAA-NMFS-2016-0098) or available upon request (see **ADDRESSES**). The peer review report is available at: http://www.cio.noaa.gov/services_programs/prplans/PRsummaries.html. Additional information can be found on our website at <https://www.fisheries.noaa.gov/species/chambered-nautilus>.

Classification

National Environmental Policy Act

The 1982 amendments to the ESA, in section 4(b)(1)(A), restrict the information that may be considered when assessing species for listing. Based on this limitation of criteria for a listing decision and the opinion in *Pacific Legal Foundation v. Andrus*, 657 F. 2d 829 (6th Cir. 1981), NMFS has concluded that ESA listing actions are not subject to the environmental assessment requirements of the National Environmental Policy Act (NEPA). (See NOAA Administrative Order 216–6A (2016) and Companion Manual “Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities” at 2 (2017).

Executive Order 12866, Regulatory Flexibility Act, and Paperwork Reduction Act

As noted in the Conference Report on the 1982 amendments to the ESA, economic impacts cannot be considered when assessing the status of a species. Therefore, the economic analysis requirements of the Regulatory Flexibility Act are not applicable to the listing process. In addition, this final rule is exempt from review under Executive Order 12866. This final rule does not contain a collection-of-information requirement for the purposes of the Paperwork Reduction Act.

Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs

This rule is not an E.O. 13771 regulatory action because this rule is exempt from review under E.O. 12866.

Executive Order 13132, Federalism

E.O. 13132 requires agencies to take into account any federalism impacts of regulations under development. It includes specific directives for consultation in situations where a regulation will preempt state law or impose substantial direct compliance costs on state and local governments (unless required by statute). Neither of those circumstances is applicable to this final rule; therefore this action does not have federalism implications as that term is defined in E.O. 13132. In accordance with E.O. 13132, we determined that this final rule does not have significant federalism effects and that a federalism assessment is not required.

List of Subjects in 50 CFR Part 223

Endangered and threatened species.

Dated: September 24, 2018.

Samuel D. Rauch, III,
Deputy Assistant Administrator for Regulatory Programs,
National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 223 is amended as follows:

PART 223—THREATENED MARINE AND ANADROMOUS SPECIES

1. The authority citation for part 223 continues to read as follows:

Authority: 16 U.S.C. 1531-1543; subpart B, § 223.201-202 also issued under 16 U.S.C. 1361 *et seq.*; 16 U.S.C. 5503(d) for § 223.206(d)(9).

2. In § 223.102, amend the table in paragraph (e) by adding a subheading for “Molluscs” after the entry for “Sturgeon, green” under the “Fishes” subheading, and by adding an entry for “Nautilus, chambered” underneath the “Molluscs” table subheading to read as follows:

§ 223.102 Enumeration of threatened marine and anadromous species.

* * * * *

(e) * * *

Species ¹			Citation(s) for listing determination(s)	Critical habitat	ESA rules
Common name	Scientific name	Description of listed entity			

Molluscs					
Nautilus, chambered	<i>Nautilus pompilius</i>	Entire species	[Insert FEDERAL REGISTER page where the document begins], [Insert date of publication in the FEDERAL REGISTER]	NA	NA

¹Species includes taxonomic species, subspecies, distinct population segments (DPSs) (for a policy statement, see 61 FR 4722, February 7, 1996), and evolutionarily significant units (ESUs) (for a policy statement, see 56 FR 58612, November 20, 1991).

[FR Doc. 2018-21114 Filed: 9/27/2018 8:45 am; Publication Date: 9/28/2018]