

will incorporate biometric identifiers. Because FMCSA is no longer required to promulgate a regulation on biometric identifiers, the agency believes TSA is the agency in a better position to lead further development of biometric identifiers, thereby avoiding a potential conflict in standards adopted by each agency. The adoption of different standards and/or technologies for CDLs and a TWIC could place an unnecessary burden on States. Therefore, FMCSA is withdrawing its ANPRMs dated May 15, 1989, and March 8, 1991, on biometric identifiers.

FMCSA has shared its research on biometric identifiers with TSA. FMCSA will continue to work in a collaborative effort with TSA on the development of TSA's biometric identifier standard and the development of a TWIC. In the future, FMCSA may assess the impact of the TWIC upon the Federal Motor Carrier Safety Regulations.

Issued on: April 27, 2005.

Annette M. Sandberg,

Administrator.

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## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

#### 50 CFR Part 223

[Docket No. 050304058-5113-02; I.D. 060204C]

RIN 0648-XB29

#### Endangered and Threatened Species; Proposed Threatened Status for Elkhorn Coral and Staghorn Coral

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

**ACTION:** Proposed rule; request for comments.

**SUMMARY:** We, the NMFS, have completed a comprehensive status review of elkhorn (*Acropora palmata*) and staghorn (*A. cervicornis*) corals and determined that a petitioned action to list both species is warranted. We have determined that fused-staghorn coral (*A. prolifera*) is a hybrid and therefore does not warrant listing. We have made our determination based on the best scientific and commercial data available and efforts being made to protect the species, and we propose to place both elkhorn and staghorn corals on the list of threatened species under the Endangered Species Act of 1973, as

amended (ESA). We are announcing that hearings will be held at four locations in June to provide additional opportunities and formats to receive public input.

**DATES:** Comments on this proposal must be received by August 8, 2005. See **SUPPLEMENTARY INFORMATION** for the specific public hearing dates.

**ADDRESSES:** You may submit comments, identified by the RIN 0648-XB29, by any of the following methods:

- E-mail: [Acropora.Info@noaa.gov](mailto:Acropora.Info@noaa.gov).

Include Docket Number or RIN 0648-XB29 in the subject line of the message.

- Mail: Assistant Regional Administrator, Protected Resources Division, NMFS, Southeast Regional Office, Protected Resources Division, 263 13th Ave. South, St. Petersburg, FL 33701.

- Facsimile (fax) to: 727-824-5309.

- Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments. Instructions: All submissions received must include the agency name and docket number or Regulatory Information Number (RIN) for this rulemaking.

- See **SUPPLEMENTARY INFORMATION** for public hearing locations.

The proposed rule and status review are also available electronically at the NMFS website at <http://sero.nmfs.noaa.gov/pr/protres.htm>

#### FOR FURTHER INFORMATION CONTACT:

Jennifer Moore or Stephania Bolden, NMFS, at the address above or at 727-824-5312, or Marta Nammack, NMFS, at 301-713-1401.

#### SUPPLEMENTARY INFORMATION:

##### Background

On March 4, 2004, the Center for Biological Diversity (CBD) petitioned us to list elkhorn, staghorn, and fused-staghorn corals as either threatened or endangered under the ESA and to designate critical habitat. On June 23, 2004, we made a positive 90-day finding (69 FR 34995) that CBD presented substantial information indicating that the petitioned actions may be warranted and announced the initiation of a formal status review as required by section 4(b)(3)(A) of the ESA. Concurrently, we solicited additional information from the public on these acroporid corals regarding historic and current distribution and abundance, population status and trends, areas that may qualify as critical habitat, any current or planned activities that may adversely affect them, and known conservation efforts. Additional information was requested during two public meetings held in

December 2004 on: (1) distribution and abundance; (2) areas that may qualify as critical habitat; and (3) approaches/criteria that could be used to assess listing potential of the acroporids (e.g., viability assessment, extinction risk, etc.).

In order to conduct a comprehensive status review, we convened an Atlantic Acropora Biological Review Team (BRT). The members of the BRT were a diverse group of experts in their fields, including coral biologists and ecologists; specialists in coral disease, coral monitoring and restoration, climate change, water quality, coral taxonomy; regional experts in coral abundance/distribution throughout the Caribbean Sea; and state and Federal resource managers. The comprehensive, peer-reviewed status review report developed by the BRT incorporates and summarizes the best available scientific and commercial information as of March 2005. It addresses the status of the species, the five factors identified in ESA section 4(a)(1), and current regulatory, conservation and research efforts that may yield protection to the corals. The BRT also reviewed and considered the petition and materials we received as a result of the **Federal Register** document (69 FR 34995) and the public meetings; substantive materials were incorporated into the status review report.

##### Distribution and Abundance

*Acropora* spp. are widely distributed throughout the wider Caribbean (U.S. Florida, Puerto Rico, U.S. Virgin Islands (U.S.V.I.), Navassa; and Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Honduras, Jamaica, Martinique, Mexico, Netherlands Antilles, Nicaragua, Panama, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago, and Venezuela). Both elkhorn and staghorn corals used to be the most abundant and most important species on Caribbean coral reefs in terms of accretion of reef structure. In general, elkhorn and staghorn corals have the same distribution, with few exceptions. Staghorn coral's northern extent (Broward County, Florida) is farther north than that of elkhorn coral (Miami-Dade County, Florida). Relative to other corals, both have high growth rates that have allowed reef growth to keep pace with past changes in sea level. Additionally, both exhibit branching morphologies that provide important habitat for other reef organisms; no other Caribbean reef-building coral

species is able to fulfill these ecosystem functions. At the current reduced abundance of *A. palmata* and *A. cervicornis*, it is highly likely that both these ecosystem functions have been largely lost.

The third *Acropora* spp. present in the Caribbean Sea is the fused-staghorn coral (*A. prolifera*). Although it has a history in the taxonomic literature, recent genetic research has determined that it is an F1 (i.e., first generation) hybrid between *A. cervicornis* and *A. palmata*. While there is genetic evidence that *A. prolifera* has backcrossed with *A. cervicornis* on evolutionary time scales, and it undergoes gametogenesis, there is no evidence that it interbreeds (i.e., produces sexual offspring in a cross between two *A. prolifera* colonies). For this reason, the BRT did not include fused-staghorn coral as a species within the status review, and we determined that it does not meet the definition of a species under the ESA.

Both elkhorn and staghorn corals underwent precipitous declines in abundance in the early 1980s throughout their range, and this decline has continued. Although quantitative data on former distribution and abundance are scarce, in the few locations where quantitative data are available (i.e., Florida Keys, Dry Tortugas, Jamaica and the U.S.V.I.), declines in abundance are estimated at greater than 97 percent. Although this decline trend has been documented as continuing in the late 1990s, and even in the past 5 years in some locations, local extirpations (i.e., at the island or country scale) have not been documented. While recruitment of new colonies has been reported in various geographic locations, new recruits appear to be suffering mortality faster than they can mature (to sizes greater than 1 m in colony diameter). In a very few locations (e.g., Buck Island Reef National Monument) moderate recovery of elkhorn coral appears to be progressing. In most cases the genetic origin of the recruits, presumably from sexual reproduction, is unknown so that their contribution to the corals' Caribbean-wide recovery remains undetermined.

#### **Analysis of the Definitions of Endangered and Threatened Species**

We first considered whether all three of the corals listed in the petition met the definition of "species" pursuant to section 3 of the ESA. The term "species" includes "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife

which interbreeds when mature." Based on this language, a "species" is given its ordinary, accepted biological meaning.

Species diagnoses for both elkhorn and staghorn were not debated as both species are recognized as separate taxa in the literature, have separate and discrete diagnoses and morphologies, and produce viable gametes, larvae, and successful sexual offspring. On the other hand, we carefully reviewed and deliberated on the taxonomic diagnosis for fused-staghorn coral (*A. prolifera*). While *A. prolifera* has been recognized in the taxonomic literature as a species based on morphology, it has always been rare, and little specific scientific information is available regarding its distribution, abundance, and trends. In addition, a wide range of intermediate *A. prolifera* morphologies exist in nature, and this further complicates in situ assessment of abundance and distribution. For the purpose of the status review, we did not consider *A. prolifera* a species as it does not interbreed with itself to produce viable offspring, and is therefore a hybrid for the reasons summarized below:

1. Recent scientific literature indicates that individuals of *A. prolifera* sampled from throughout the Caribbean region were all F1 (i.e., first generation) hybrids of *A. palmata* and *A. cervicornis*. This finding is consistent with the observed rarity of *A. prolifera*. There is also genetic evidence that *A. prolifera* has undergone rare backcrossing with the parent *A. cervicornis* on an evolutionary time scale.

2. Data from a single unpublished study indicate that *A. prolifera* does undergo gametogenesis, but there is no direct evidence that zygotes are produced due to colony rarity, or that successful sexual offspring result.

3. While it is unclear whether or not *A. prolifera*'s gametes are viable, it is highly unlikely that genetically distinct colonies occur within sufficient proximity to routinely accomplish successful fertilization in nature.

Therefore, based on the best information available and the generally accepted biological definition of a species (consisting of related organisms capable of interbreeding to produce viable offspring), we determined that *A. prolifera* is a hybrid which has not been shown to interbreed when mature, and it does not constitute a species under the ESA.

Furthermore, although fused-staghorn is known to have backcrossed with staghorn at some time, similar elkhorn chromosome mapping has not been conducted. Therefore, we are reluctant to identify potential genealogy of the

fused-staghorn relative to either elkhorn or staghorn coral. Instead, we determined that the hybrid should be considered a separate entity and that individuals of this entity are not considered members of either staghorn or elkhorn coral populations.

Next, we carefully examined the definitions of endangered and threatened species pursuant to section 3 of the ESA wherein: (1) "endangered species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range;" and (2) "threatened species" is defined as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."

Corals are invertebrates, and, therefore, a listing determination must be based on the species' status throughout "all or a significant portion" of its range. The only information regarding discreteness or distinctiveness of Atlantic *Acropora* populations is a recent study that examined genetic exchange and clonal population structure in *A. palmata* by sampling and genotyping colonies from eleven locations throughout its geographic range using microsatellite markers. Results indicate that populations in the eastern Caribbean (St. Vincent and the Grenadines, U.S.V.I., Curacao, and Bonaire) have experienced little or no genetic exchange with populations in the western Caribbean (Bahamas, Florida, Mexico, Panama, Navassa, and Mona Island). Puerto Rico is an area of mixing where populations show genetic contribution from both regions, though it is more closely connected with the western Caribbean. Within these regions, the degree of larval exchange appears to be asymmetrical with some locations being entirely self-recruiting and some receiving immigrants from other locations within their region. No similar information exists for *A. cervicornis*. These results do not indicate source or sink areas, populations that are discrete or distinct, or any other specific geographic areas within the Caribbean Sea that should be considered more or less significant than another. Because there is no evidence indicating that any elkhorn or staghorn population within the geographic range of the species is more or less important than others, we considered the entire geographic range in determining status of these species.

Based on the ESA definition of an endangered species, the danger of extinction must be examined. While the number (in terms of abundance and coverage) of elkhorn and staghorn corals rangewide has precipitously declined

over the last 30 years, total number of colonies and presumably individuals remains very, very large (although the absolute number of colonies or coverage is unquantified). Given the high number of colonies, the species' large geographic range that remains intact (no evidence of range constriction), and the fact that asexual reproduction (fragmentation) provides a source for new colonies (albeit perhaps clones) which likely buffers natural demographic and environmental variability, we believe that both species retain significant potential for persistence and are at a low risk of extinction in the near term. Additionally, both elkhorn and staghorn corals have persisted through climate cooling and heating fluctuation periods over millions of years as determined by the geologic record, where other corals have gone extinct. Therefore, we have determined as a preliminary matter that neither elkhorn nor staghorn corals are in danger of extinction throughout all of their range.

For many of the same reasons discussed above, we determined that both elkhorn and staghorn corals may meet the ESA definition of threatened species. First, we established that the appropriate period of time corresponding to the foreseeable future is a function of the particular kinds of threats, the life-history characteristics, and the specific habitat requirements for the species under consideration. It is also consistent with the purpose of the ESA that the timeframe for the foreseeable future be adequate to provide for the conservation and recovery of threatened species and the ecosystems upon which they depend. Given this conceptual framework and the fact that some threats such as hurricanes or major disease outbreaks can happen at anytime and other threats happen over longer periods of time (e.g., habitat degradation, global climate change), the slow-growing and late maturing aspects of the species life history, and the fact that the current decline as documented by the BRT occurred during the last 20 to 30 years, we have preliminarily determined the foreseeable future for these species to be 30 years.

We then considered the following items on the timescale outlined above in evaluating the status of elkhorn and staghorn corals:

1. Recent drastic declines in abundance of both species have occurred throughout their geographic range and abundances are at historic lows;
2. Broad geographic ranges could become constricted due to local extirpations resulting from a single

stochastic event (e.g., hurricanes, new disease outbreak);

3. Sexual recruitment is limited in some areas and unknown in most as fertilization success from clones is virtually zero; settlement of larvae is often unsuccessful given limited amount of appropriate habitat;

4. The Allee effect is occurring (fertilization success declines greatly as adult density declines).

Based upon these facts, we believe that abundance and distribution of both elkhorn and staghorn coral are likely to become further reduced. Furthermore, a series of local extirpations are likely to occur within the next 30 years. We believe that while elkhorn and staghorn coral are not currently in danger of extinction throughout all or a significant portion of their range, they are likely to become so within the foreseeable future. Therefore, we propose to list them as threatened under the ESA.

#### **Analysis of Factors Affecting the Species**

Section 4 of the ESA (16 U.S.C. 1533) and regulations promulgated to implement the listing provisions of the ESA (50 CFR part 424) set forth the procedures for adding species to the Federal list. Section 4 requires that listing determinations be based solely on the best scientific and commercial data available, without consideration of possible economic or other impacts of such determinations. Section 4(a)(1) of the ESA provides that the Secretary of Commerce shall determine whether any species is endangered or threatened because of any of five specified factors; these factors and their relevance to the status of elkhorn and staghorn corals are analyzed below.

#### *The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range*

Seven stressors (natural abrasion and breakage, anthropogenic abrasion and breakage, sedimentation, persistent elevated temperature, competition, excessive nutrients and sea level rise) were identified as threats affecting both species through present or threatened destruction, modification, or curtailment of their habitats or ranges. This consists of both destruction or disruption of substrate to grow on, and modification or alteration of the aquatic environment in which the corals live. Although habitat loss has occurred, to date, the range of these two species has not been reduced. However, because of the species' extremely low abundance, local extirpations are possible in the foreseeable future, leading to a reduction in range.

Elkhorn and staghorn corals, like most corals, require hard, consolidated substrate (i.e., attached, dead coral skeleton) for their larvae to settle or fragments to reattach. When the substrate is physically disturbed, and when the attached corals are broken and reduced to unstable rubble or sediment, settlement and reattachment habitat is lost. The most common causes of natural abrasion and breakage (physical disturbance) are severe storm events, including hurricanes. Severe storms can lead to the complete destruction and mortality of entire reef zones dominated by these species as well as destruction of the habitat on which these species depend (i.e., by covering settlement, reattachment and growing surfaces with unstable rubble and sediment). These major storms have physically disrupted reefs throughout the wider Caribbean and are among the primary causes of elkhorn and staghorn coral habitat loss in certain locations. Human activity in coral reef areas is another source of abrasion and breakage (anthropogenic), and thus destruction of *A. palmata* and *A. cervicornis* habitat. These activities include boating, anchoring, fishing, recreational SCUBA diving and snorkeling, and an increasing variety of maritime construction and development activities. The shallow habitat requirements of these two species make them especially susceptible to impacts from these anthropogenic activities, which have been documented as causing effects similar to severe storms, though usually on a smaller scale.

*Acropora* spp. also appear to be particularly sensitive to shading effects resulting from increased sediments in the water column. Because these corals are almost entirely dependent upon sunlight for nourishment, they are much more susceptible to increases in water turbidity and sedimentation than other species. Increased sediments in the water column, which have been documented to impede larval settlement, can result from, among other things, land development and run-off, dredging and disposal activities, and major storm events.

Optimal water temperatures for elkhorn and staghorn coral range from 25 to 29° C, with the species being able to tolerate higher temperatures for a brief period of time (e.g., order of days to weeks depending on the magnitude of the temperature elevation). Global atmospheric air and sea temperatures have been documented as rising over the past century, and shallow reef habitats are especially vulnerable. Water with sea surface temperatures above the optimal range does not provide suitable habitat for either of the two species.

Because of their fast growth rates (relative to other corals) and canopy-forming morphology, *A. palmata* and *A. cervicornis* are known to be competitive dominants within coral communities, in terms of their ability to overgrow other stony and soft corals. However, other types of reef benthic organisms (i.e., algae) have higher growth rates and are expected to have greater competitive ability than *Acropora* spp. Under current physical oceanographic conditions in shallow, coastal areas (i.e., elevated nutrients), algae are typically out-competing both *Acropora* spp. for space on the reef. The consequence of this competition is that less habitat is available for the two species to colonize.

Nutrients are added to coral reefs from both point sources (readily identifiable inputs where pollutants are discharged to receiving surface waters from a pipe or drain) and non-point sources (inputs that occur over a wide area and are associated with particular land uses). Coral reefs have been generally considered to be nutrient-limited systems, meaning that levels of accessible nitrogen and phosphorus limit the rates of plant growth. When nutrients levels are raised in such a system, plant growth can be expected to increase, and this can yield imbalance and changes in community structure. The widespread increase in algae abundance on Caribbean corals reefs has been attributed to nutrient enrichment. Therefore, less habitat is available for elkhorn and staghorn coral larval settlement or fragment reattachment.

#### *Overutilization for Commercial, Recreational, Scientific, or Educational Purposes*

Only one stressor under the second factor identified in section 4(a)(1), overutilization for commercial, recreational, scientific, or educational purposes, was identified as a potential threat to elkhorn and staghorn corals: overharvest for curio/aquarium demand. Overutilization does not appear to be a significant threat to either of these two species given current regulation and management.

#### *Disease or Predation*

Disease was identified as the single largest cause of both elkhorn and staghorn coral mortality and decline. It is also the greatest threat to the two species' persistence and recovery given its widespread, episodic, and unpredictable occurrence resulting in high mortality. The threat is exacerbated by the fact that disease, though clearly severe, is poorly understood in terms of etiology and possible links to anthropogenic stressors. Although the

number or identity of specific disease conditions affecting Atlantic *Acropora* spp. and the causal factors involved are uncertain, several generalizations are evident. First, both total number of described *Acropora* spp. specific diseases as well as the prevalence and/or geographic range of impact have increased over the past decade, and the trend is expected to continue. Second, disease has had, and continues to have, major ongoing impacts on population abundance and colony condition of both elkhorn and staghorn coral. Diseases affecting these species may prevent or delay their recovery in the wider Caribbean. Finally, diseases constitute an ongoing, major threat about which specific mechanistic and predictive understanding is largely lacking, thus precluding effective control or management strategies.

*Acropora* spp. are also subject to invertebrate (e.g., polychaete, mollusk, echinoderm) and vertebrate (fish) predation, but "plagues" of coral predators such as the Indo-Pacific crown-of-thorns outbreaks (*Acanthaster planci*) have not been described in the Atlantic. Predation may directly cause mortality or injuries that lead to invasion of other biota (e.g., algae, boring sponges). The threat of predation, while apparently much less than that of disease, is also contributing to the status of these species.

#### *Inadequacy of Existing Regulatory Mechanisms*

We evaluated existing regulatory mechanisms (fourth factor identified in ESA section 4(a)(1)) currently in place and consisting of enforceable provisions which are directed at managing threats to elkhorn and staghorn corals. Most existing regulatory mechanisms are not specific to the two species, but were promulgated to manage corals or coral reefs in general. While the impact of many stressors were determined to be slightly reduced with the implementation of regulations, none were totally abated. For example, the Fishery Management Plan for Coral and Coral Reefs of the Gulf of Mexico and South Atlantic (under the Magnuson-Stevens Fishery Conservation and Management Act) protects all corals from harvest, sale and destruction on the seabed in U.S. Federal waters during fishing related activities. In some cases, elkhorn and staghorn corals are incidentally destroyed during fishing practices, and, therefore, the regulation does not fully abate the threat from damaging fishing practices.

The major threats to these species' persistence (i.e., disease, elevated temperature and hurricanes) are severe,

unpredictable, and have increased over the past 3 decades. At current levels of knowledge, the threats are unmanageable, and there is no apparent indication that these trends will change in the foreseeable future. No existing regulatory mechanisms are currently in place, or expected to be in place in the foreseeable future, to control or prevent these major threats to the two species. In the meantime, managing some of the stressors determined to be less severe (e.g., anchoring, vessel groundings, point and non-point source nutrients, sedimentation) may assist in decreasing the rate of *A. palmata* and *A. cervicornis* decline by enhancing coral condition and decreasing synergistic stress effects.

#### *Other Natural or Manmade Factors Affecting the Continued Existence of the Species*

We identified eleven stressors that affect the status of elkhorn and staghorn corals as a result of other natural or manmade factors (fifth factor identified in ESA section 4(a)(1)): elevated temperature, competition, elevated nutrients, sedimentation, sea level rise, abrasion and breakage, contaminants, loss of genetic diversity, African dust, elevated carbon dioxide, and sponge boring. Many of these threats are the same as those identified in the first factor (habitat) because the same mechanism can cause direct impacts to the organisms in addition to destroying or disrupting their habitat. Impacts from some of these stressors are complex, resulting in synergistic habitat impacts (first factor identified in ESA section 4(a)(1)).

Elevation of the typical sea surface temperature in tropical and subtropical oceans stresses *Acropora* spp. Global air and sea surface temperatures have risen over the past 100 years and shallow reef habitats are especially vulnerable. When exposed to elevated temperatures, elkhorn and staghorn corals expel the symbiotic algae (bleaching) on which they depend for a photosynthetic contribution to their energy budget, enhancement of calcification, and color. Temperature induced bleaching affects growth, maintenance, reproduction, and survival of these two species. As summarized in the status review report, bleaching has been documented as the source of extensive elkhorn and staghorn mortality in numerous locations throughout their range. The extent of bleaching is a function of the intensity of the temperature elevation and the duration of the event.

Along with elevated temperature, atmospheric carbon dioxide levels have increased in the last century and there is no apparent evidence that the trend

will not continue. As atmospheric carbon dioxide is dissolved in surface seawater, seawater becomes more acidic, shifting the balance of inorganic carbon species away from carbon dioxide and carbonate toward bicarbonate. This shift decreases the ability of corals to calcify because corals are thought to use carbonate (not bicarbonate) to build their aragonite skeletons. Experiments have shown the reduction of calcification in response to elevated carbon dioxide levels.

Rapid sea level rise was identified as a potential threat to these species; however, under current conditions, we conclude that this stressor is not affecting either of the two species' status.

As discussed above, increased sediments in the water column can result from, among other things, land development and run-off, dredging and disposal activities, and major storm events. In addition to the habitat impacts, sedimentation has been shown to cause direct physiological stress to elkhorn and staghorn corals. Direct deposition of sediments on coral tissue and shading due to sediments in the water column have both caused tissue death in these species.

In addition to the habitat impacts described above, natural and anthropogenic sources of abrasion and breakage (i.e., severe storms, vessel groundings, fishing debris) cause direct mortality to elkhorn and staghorn corals. Their branching morphology make them particularly susceptible to breakage. The creation of fragments through breakage is a natural means of asexual reproduction for these species. However, the fragments must encounter suitable habitat to be able to reattach and create a new colony. Under current conditions, suitable habitat is often not available, and entire elkhorn and staghorn reefs have been destroyed after these events.

Many of the threats identified as contributing to the status of elkhorn and staghorn coral are minor in intensity, but have an impact nonetheless because of their extremely reduced population sizes. Direct competition with other species, skeleton bioerosion by clionid sponges, and effects from African dust all are minor threats, but they are exacerbating the species' current status.

The severity of all of the threats (natural or manmade) ranges from high (e.g., temperature) to low (e.g., sponge boring). Some stressors (e.g., contaminants and loss of genetic diversity) are known to be threats to these two species, but their effect on the status is undetermined and understudied.

#### **Summary and Synthesis of Analysis of the Factors Identified in ESA Section 4(a)(1)**

We determined that the major factors affecting the two species are disease, elevated temperature, and hurricanes. Other factors identified as contributing to the status of the species, given their extremely reduced population sizes, are sedimentation, anthropogenic abrasion and breakage, competition, excessive nutrients, sea level rise, predation, contaminants, loss of genetic diversity, African dust, elevated carbon dioxide levels, and sponge boring.

#### **Basis for Proposed Determination**

In accordance with section 4(b)(1)(A) of the ESA, the determination that the petitioned action is warranted was based on the best scientific and commercial data available. As provided in 50 CFR 434.13, we used scientific and commercial publications, administrative reports, maps, and information received from experts on the subject.

As further required by section 4(b)(2), we considered those efforts being made by States or foreign nations to protect or conserve the two species. As discussed above, the major threats to the two species are currently unmanageable, and, therefore, these efforts do not alter the threatened status of elkhorn and staghorn corals.

Finally, section 4(b)(1)(B) of the ESA, requires us to give consideration to species which (1) have been designated as requiring protection from unrestricted commerce by any foreign nation, or (2) have been identified as in danger of extinction, or likely to become so within the foreseeable future, by any state agency or by any agency of a foreign nation. All corals are listed under Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, which regulates international trade of species to ensure survival. Additionally, all corals, including elkhorn and staghorn corals, are protected under the U.S.V.I. Indigenous and Endangered Species Act of 1990, and both species have been listed recently in the "red book" of threatened marine invertebrates of Colombia by a technical commission coordinated by the Ministry of the Environment. *Acropora cervicornis* was considered as a critically endangered species in Colombia and *A. palmata* was included as endangered. Thus, the proposed listing is consistent with foreign and international actions taken with regard to these species.

#### **Similarity of Appearance of the Hybrid**

We also considered the risk to elkhorn and staghorn corals of not listing fused-staghorn coral pursuant to ESA section 4(e), Similarity of Appearance Cases. We determined that listing fused-staghorn coral under this provision is not warranted given its rarity, the fact that it is almost always found amongst colonies of other *Acropora* spp., and the conclusion by the BRT that the threat of overharvest by curio/aquarium demand is well regulated.

#### **Effects of Listing**

Conservation measures provided for species listed as endangered or threatened under the ESA include recovery actions (16 U.S.C. 1533(f)), critical habitat designations, Federal agency consultation requirements (16 U.S.C. 1536), and prohibitions on taking (16 U.S.C. 1538). Recognition of the species' plight through listing promotes conservation actions by Federal and state agencies, private groups, and individuals. Should the proposed listing be made final, a recovery program would be implemented, and critical habitat may be designated. We believe that to be successful, protective regulations and recovery programs for elkhorn and staghorn corals will need to be developed in the context of conserving aquatic ecosystem health. Federal, state and the private sectors will need to cooperate to conserve the listed elkhorn and staghorn corals and the ecosystems upon which they depend.

#### **Service Policies on Role of Peer Review**

On July 1, 1994, we and FWS published a policy regarding peer review of scientific data (59 FR 34270). The intent of this peer review policy is to ensure that listings are based on the best scientific and commercial data available. Prior to a final listing, we formally solicit expert opinions and analyses on one or more specific questions or assumptions. This solicitation process may take place during a public comment period on any proposed rule or draft recovery plan, during the status review of a species under active consideration for listing, or at any other time deemed necessary to clarify a scientific question. The status review was peer reviewed by six experts in the field, with their substantive comments incorporated in the final status review.

#### **Critical Habitat**

Critical habitat is defined in section 3 of the ESA (16 U.S.C. 1532(3)) as: (1) the specific areas within the geographical area occupied by a species, at the time

it is listed in accordance with the ESA, 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. Section 4(a)(3)(a) of the ESA (16 U.S.C. 1533(a)(3)(A)) requires that, to the extent prudent and determinable, critical habitat be designated concurrently with the listing of a species. If we determine that it is prudent and determinable, we will publish a proposed designation of critical habitat for elkhorn and staghorn corals in a separate rule.

#### Public Comments Solicited

To ensure that any final action resulting from this proposal will be as accurate and effective as possible, we are soliciting comments from the public, other concerned governmental agencies, the scientific community, industry, and any other interested parties. Final promulgation of any regulation(s) on this species or withdrawal of this listing proposal will take into consideration the comments and any additional information we receive, and such communications may lead to a final regulation that differs from this proposal or result in a withdrawal of this listing proposal.

#### Solicitation of Information

In addition to comments on the proposed rule, we are soliciting information on areas that may qualify as critical habitat for elkhorn and staghorn coral. The physical and biological features essential to the conservation of the species and areas that contain these features should be identified. Areas outside the occupied geographic area should also be identified if such areas are essential to the conservation of the species. Essential features may include, but are not limited to: (1) space for individual growth and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for reproduction and development of offspring; and (5) habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of the species (50 CFR 424.12(b)).

For areas potentially qualifying as critical habitat, we also request information describing: (1) activities or other threats to the essential features or activities that could be affected by designating them as critical habitat, and (2) the economic costs and benefits likely to result if these areas are designated as critical habitat.

#### Public Hearing Dates and Locations

Public hearings will be held at four locations in Puerto Rico, the U.S. Virgin Islands, and Florida in June. The specific dates and locations of these meetings are listed below:

(1) Monday, June 13, 2005, at the Caribe Hilton, The Flamboyant, San Geronimo Grounds, Los Rosales St., San Juan, Puerto Rico 00901, 7–9 p.m.

(2) Tuesday, June 14, 2005, at the Holiday Inn Windward Passage, Veterans Drive, Caribbean B Room, Charlotte Amalie, St. Thomas, U.S. Virgin Islands, 00804, 7–9 p.m.

(3) Tuesday, June 21, 2005, at the Marathon Garden Club, 5270 Overseas Highway, Marathon, FL, 33050, 1:30–3:30 p.m.

(4) Wednesday, June 22, 2005, at the Courtyard by Marriott Hotel, Manatee/Marlin Room, 400 Gulf Stream Way, Dania Beach, FL, 33004, 7–9 p.m.

#### Special Accommodations

These public hearings are physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to Jennifer Moore no later than June 7, 2005 (see **FOR FURTHER INFORMATION CONTACT**)

#### 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*, 675 F. 2d 825 (6th Cir.1981), NMFS has concluded that ESA listing actions are not subject to the environmental assessment requirements of the National Environmental Policy Act. (See NOAA Administrative Order 216–6.)

##### *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 shall not 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 rule is exempt from review under Executive Order 12866. This proposed rule does not contain a collection-of-information requirement for the purposes of the Paperwork Reduction Act.

#### Federalism

In keeping with the intent of the Administration and Congress to provide continuing and meaningful dialogue on issues of mutual state and Federal interest, this proposed rule will be given to the relevant state agencies in each state in which the species is believed to occur, who will be invited to comment. We have conferred with the State of Florida and the Territories of Puerto Rico and the U.S.V.I. in the course of assessing the status of the elkhorn and staghorn corals, and considered, among other things, Federal, state and local conservation measures. As we proceed, we intend to continue engaging in informal and formal contacts with the states and territories, and other affected local or regional entities, giving careful consideration to all written and oral comments received. We also intend to consult with appropriate elected officials in the establishment of any final rule.

#### References

*Acropora* Biological Review Team. 2005. Atlantic *Acropora* Status Review Document. Report to National Marine Fisheries Service, Southeast Regional Office. March 3, 2005. 152 p + App.

#### List of Subjects in 50 CFR Part 223

Endangered and threatened species, Exports, Imports, Transportation.

Dated: May 3, 2005.

#### John Oliver,

*Deputy Assistant Administrator for Operations, National Marine Fisheries Service.*

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

#### **PART 223—THREATENED MARINE AND ANADROMOUS SPECIES**

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

**Authority:** 16 U.S.C. 1531 et seq; subpart B, § 223.12 issued under 16 U.S.C. 1361 et seq.

2. In § 223.102, add paragraph (e) to read as follows:

#### **§ 223.102 Enumeration of threatened marine and anadromous species.**

\* \* \* \* \*

(e) *Marine invertebrates*. Elkhorn coral (*Acropora palmata*), rangewide, and staghorn coral (*Acropora*

*cervicornis*), rangewide. Includes United States Florida, Puerto Rico, U.S. Virgin Islands, Navassa; and wider-Caribbean - Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Colombia, Costa Rica, Cuba, Dominica,

Dominican Republic, Grenada, Guadeloupe, Haiti, Honduras, Jamaica, Martinique, Mexico, Netherlands Antilles, Nicaragua, Panama, St. Kitts and Nevis, St. Lucia, St. Vincent and the

Grenadines, Trinidad and Tobago, and Venezuela.

\* \* \* \* \*

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