27A the fee which they remit with Form 159, in the amount of five percent of the amount specified on line 29A; and on line 28 the facility identification number assigned to their station by the Commission. The licensee's signature on line 30 certifies under penalty of perjury the accuracy of the information reported on Form 159.[42]

28. The Commission delegates authority to the Office of Managing Director to specify by Public Notice any additional procedures for filing and processing the fees required by this *Order* that are necessary or warranted. The Commission reserves the right to audit each participating licensee's records which support the calculation of the amount specified on line 27A of Form 159. Each such licensee, therefore, is required to retain such records for the duration of the pilot program, or for three years from the date of remittance of fees pursuant to this *Order,* whichever is longer.

29. While we do not here include automatic confidentiality for information submitted pursuant to this *Order,* submission of the required reporting form, and/or remittance of fee payment may be accompanied by a request for confidentiality pursuant to 47 CFR 0.459.

D. Other Requirements

30. *Application of experimental rules.* In addition to the foregoing, we believe that requirements similar to those contained in sections 5.93(a) and (b) of the rules should apply to the pilot program.[43] Thus, we will require that all transmitting and/or receiving equipment used in the pilot program be owned by, leased to, or otherwise under the control of the LPTV licensee.[44] Response station equipment may not be owned by subscribers to the experimental data service. This will insure that the LPTV licensee has control of the equipment if and when the pilot program terminates. In addition, we will require the LPTV licensee to inform anyone participating in the experiment, including but not limited to subscribers or consumers, that the service or device is provided pursuant to a pilot program and is temporary.[45]

31. *Final Regulatory Flexibility Analysis.* No regulatory flexibility analysis is required because the rules adopted in this *Order* are being adopted without notice and comment rule making.

32. *Congressional Review Act.* These rules, promulgated without notice and comment rule making, are not subject to the provisions of the Congressional Review Act.

III. Ordering Clauses

33. Accordingly, pursuant to the authority contained in sections 1, 2(a), 4(i), 7, and 336 of the Communications Act of 1934 as amended, 47 U.S.C. 1, 2(a), 4(i), 7 and 336, part 74 of the Commission's rules, 47 CFR part 74, *is amended* as set forth in this *Order.*

34. The rule amendments set forth *shall be effective* immediately.

List of Subjects in 47 CFR Part 74

Television.

Federal Communications Commission.

Magalie Roman Salas,

Secretary.

Rules

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR part 74 as follows:

PART 74—EXPERIMENTAL RADIO, AUXILIARY, SPECIAL BROADCAST AND OTHER PROGRAM DISTRIBUTIONAL SERVICES

1. The authority citation for part 74 is amended to read as follows:

Authority: 47 U.S.C. 154, 303, 307, 336(f), 336(h) and 554.

2. A new § 74.785 is added to read as follows:

§ 74.785 Low power TV digital data service pilot project.

Low power TV stations authorized pursuant to the LPTV Digital Data Services Act (Public Law 106–554, 114 Stat. 4577, December 1, 2000) to participate in a digital data service pilot project shall be subject to the provisions of the Commission *Order* implementing that Act. FCC 01–137, adopted April 19, 2001.

[FR Doc. 01–13380 Filed 5–25–01; 8:45 am]

BILLING CODE 6712–01–U

[42] *Compare Fees R&O,* paragraph 58.

[43] No other provisions of part 5 of the Commission's rules apply.

[44] *See* 47 CFR 5.93(a).

[45] *See* 47 CFR 5.93(b).

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 224

[Docket No. 990910253–1120–03; ID No. 041300B]

RIN 0648–AM90

Endangered and Threatened Species; Endangered Status for White Abalone

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

ACTION: Final rule.

SUMMARY: Following completion of a comprehensive status review of the white abalone (*Haliotis sorenseni*) and a review of factors affecting the species, NMFS published a proposed rule to list the white abalone as an endangered species on May 5, 2000. After considering public comments on the proposed rule, NMFS is now issuing a final rule to list the white abalone as an endangered species. NMFS has determined that it is not prudent to designate critical habitat because identification of such habitat is expected to increase the threat of poaching for white abalone.

DATES: Effective June 28, 2001.

ADDRESSES: Assistant Regional Administrator, Protected Resources Division, NMFS, Southwest Region, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90802–4213.

FOR FURTHER INFORMATION CONTACT: Craig Wingert, 562–980–4021; or Marta Nammack, 301–713–1401.

SUPPLEMENTARY INFORMATION:

Previous Federal Endangered Species Act (ESA) Actions Related to White Abalone

NMFS designated the white abalone, which is a marine invertebrate mollusc, as a candidate species under the ESA on July 14, 1997 (62 FR 37560), based on information indicating that the species had suffered a major decline in abundance. Because of the depleted status of white abalone, NMFS contracted with Scripps Institution of Oceanography (SIO) in August 1998 to conduct a comprehensive status review of the species. The status review of white abalone was completed in March 2000.

NMFS received a petition on April 29, 1999, from the Center for Biological Diversity and the Southwest Center for Biological Diversity to list white abalone as an endangered species on an

emergency basis and designate critical habitat under the ESA. On May 17, 1999, NMFS received a second petition to list white abalone as an endangered species throughout its range and designate critical habitat under the ESA from several environmental organizations. NMFS considered this second request as supplemental information to the first petition.

NMFS published its 90-day finding on September 24, 1999 (64 FR 51725), which concluded that the first petition presented sufficient scientific and commercial information indicating that a listing of white abalone as an endangered species may be warranted. However, NMFS did not find that the petition presented substantial evidence warranting listing on an emergency basis. This finding was based on a review of the petition and other available information which indicated that the State of California had closed commercial and recreational fishing for white abalone and that white abalone habitat was not currently at risk from destruction or adverse modification.

Based on the findings of the white abalone status review and an evaluation of the factors affecting the species, NMFS published a proposed rule to list the white abalone as an endangered species on May 5, 2000 (65 FR 26167).

Abalone Life History and Ecology

Abalone are marine gastropods belonging to the family Haliotidae and genus *Haliotis* and are characterized by a flattened spiral shell (Haaker, 1986; Hobday and Tegner, 2000a). Abalone have separate sexes and are broadcast spawners, releasing millions of eggs or sperm during a spawning event. Fertilized eggs hatch and develop into free-swimming larvae, spending from 5 to 14 days as non-feeding zooplankton before development (i.e., metamorphosis) into the adult form. After metamorphosis, they settle onto hard substrates in intertidal and subtidal areas. Abalone grow slowly and have relatively long lifespans of 30 years or more. Young abalone (referred to as ''cryptic abalone'') seek cover in rocky crevices, under rocks, and deep crevices, feeding on benthic diatoms, bacterial films, and single-celled algae found on coralline algal substrate (Cox, 1962). As abalone grow and become less vulnerable to predation at about 75-100 mm (2.9–3.9 inches) in length, they emerge from secluded habitat to more open, visible locations where their principal food source, attached or drifting algae, is more available (Cox 1962). In dive surveys, these animals are classified as ''emergent'' abalone. Abalone lead a relatively sedentary lifestyle. Although juveniles may move tens of meters per day, adult abalone have extremely limited movements as they increase in size (Cox, 1962; Tutschulte, 1976; Shephard, 1973).

Successful abalone recruitment has been related to the interaction between spawning density, spawning period and length, and fecundity (Hobday and Tegner, 2000a). At low adult densities, fertilization success is much reduced. When males and females are greatly separated, fertilization success may be negligible and recruitment failure will likely occur (Hobday and Tegner, 2000a).

White Abalone

Eight species of *Haliotis* occur along the west coast of North America. Historically, white abalone ranged from Point Conception, California, U.S.A., to Punta Abreojos, Baja California, Mexico. Although studies have recognized possible population structure in other *Haliotis* species, no studies have identified distinct populations of white abalone (Hobday and Tegner, 2000a). Tutschulte (1976) reported that white abalone are not as cryptic as other California abalone species.

White abalone is the deepest-living of the west coast *Haliotis* species (Hobday and Tegner, 2000). According to Cox (1960) and Tutschulte (1976), white abalone were found at subtidal depths of 20-60 m (66–197 ft) and were historically most ''abundant'' at depths of 25–30 m (80–100 ft). At these depths, white abalone are found in open low relief rock or boulder habitat surrounded by sand (Tutschulte, 1976; Davis *et al.*, 1996).

White abalone may be limited to depths where algae grow, a function of light levels and substrate availability, because they are reported to feed less on drift algae and more on attached brown algae (Tutschulte, 1976; Hobday and Tegner, 2000a). The upper and lower limits of white abalone depth distribution could also be influenced by temperature effects on larvae and juvenile survival. Leighton (1972) found that white abalone larval survival is reduced at lower temperatures. Tutschulte (1976) speculated that white abalone may have been restricted to depths below 25 m (82 ft) by predation from sea otters when sea otter and white abalone latitudinal ranges overlapped or from competition with pink abalone and predation by octopuses.

According to Hobday and Tegner (2000a), the maximum shell length recorded for white abalone in California and Mexico is 20–25 cm (7.8–9.8 inches) and 17 cm (6.6 inches), respectively. Cox (1960) indicated the maximum size was slightly larger at 25.4 cm (10 inches), but that the ''average'' observed size is about 13–20 cm (5–8 inches) and animals less than 10 cm (4 inches) are rare. White abalone reach sexual maturity at a size between 88 and 134 mm (3.4–5.2 inches) in approximately 4 to 6 years and spawn in the winter, between February and April (Tutschutle, 1976; Tutschutle and Connell, 1981). Compared to two other California abalone species, white abalone have a high degree of spawning synchronicity wherein most males and females spawn in a relatively short time period. Based on a peak in 5-year old animals prior to the peak of the white abalone fishery, Tutschulte (1976) suggested that white abalone have irregular recruitment. Tutschulte (1976) estimated that the maximum lifespan of white abalone is 35 to 40 years.

In the laboratory, settlement of white abalone larvae occurred after 9 to 10 days at 15 °C (59 °F) (Leighton, 1972). This larval period is longer than periods reported for other California abalone species (Hobday and Tegner, 2000a). Drift tube studies have found that larval periods of most abalone species would not usually be long enough for regular dispersal of abalone between islands and mainland areas (Tegner and Butler, 1985b). Since they have a relatively long larval period, potential dispersal distances may be greater for white abalone than those other of abalone species (Hobday and Tegner, 2000a).

Summary of Comments Received in Response to the Proposed Rule

No public hearings were held for NMFS' proposal to list the white abalone as an endangered species, as no hearings were requested during the 60-day public comment period. During the public comment period, however, NMFS received nine written comments on the proposed rule: five from private citizens; two from non-governmental organizations, and one each from a local government agency and an academic/research organization. Of the nine commenters, seven supported the listing of white abalone as an endangered species, one questioned the need for listing given the closure of the commercial and recreational fisheries for white abalone, and one provided some limited technical information only. A summary of the comments and the responses thereto are presented here.

Issue 1: Biological Information and Status of White Abalone

Comment: One commenter questioned the 25 cm (9.8 inches) maximum size of white abalone cited in NMFS' proposed

rule and indicated that Cox (1960) had reported a maximum size of 10 inches (or 25.4 cm). The commenter also provided museum specimen record citations for California and Mexico that provide additional documentation regarding the historic range of white abalone.

Response: NMFS' proposed listing notice does indicate that the maximum shell length recorded for white abalone in California ranges from 20–25 cm. This information was taken from the NMFS Status Review (Hobday and Tegner 2000a). The discussion of white abalone life history in this final rule has been modified to reflect the maximum size reported by Cox (1960).

Comment: One commenter speculated that white abalone have been extinct for at least 10 years based on his personal diving observations in the northern Channel Islands.

Response: As discussed in NMFS' status review, the proposed listing notice, and elsewhere in this final rule, the white abalone has declined precipitously in abundance over the past 30 years; however, NMFS disagrees that white abalone are already extinct. As discussed elsewhere in this final rule, the most recent submarine surveys that were conducted in 1996–7 and 1999 (Davis *et al.*, 1998; Haaker, *et al.*, 2000) directly observed small numbers of white abalone, and population estimates developed by Hobday and Tegner (2000a) based on these survey observations suggest that the current white abalone population ranges from approximately 1,600 to 2,500 individuals.

Issue 2: Need for Emergency Listing of White Abalone

Comment: One commenter indicated that NMFS should accelerate its efforts to protect white abalone by listing the species on an emergency basis under the ESA.

Response: As discussed in the proposed listing notice, NMFS has determined that an emergency listing of white abalone is not warranted. That determination was based on the fact that no emergency existed that posed a significant risk to the well-being of the species. Specifically, the State of California has closed the commercial and recreational fisheries for white abalone and the best available information indicated that white abalone habitat was not currently at risk of being destroyed or adversely modified. NMFS continues to believe that the timeframe of the normal rule making process is sufficient for the white abalone listing determination.

Issue 3: Need for Designation of Critical Habitat

Comment: Three commenters were very concerned that NMFS did not propose critical habitat for white abalone. These commenters believe that a critical habitat designation is necessary for the eventual recovery of white abalone and strongly urged NMFS to designate critical habitat encompassing the species' historic range, including the northern Channel Islands. One commenter provided information that it believed NMFS should consider if it proceeded with a critical habitat designation that included the Palos Verdes shelf.

Response: Section 4(a)(3)(A) of the ESA requires that, to the maximum extent prudent and determinable, NMFS designate critical habitat concurrently with a determination that a species is endangered or threatened. According to § 424.12(a)(1)(i) of NMFS' and the U.S. Fish and Wildlife Service's joint implementing regulations for listing endangered and threatened species and designating critical habitat (50 CFR part 424), a designation of critical habitat is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other human activity, and the identification of critical habitat can be expected to increase the degree of such threat to the species, or (2) such designation of critical habitat would not be beneficial to the species.

Over-harvesting of white abalone for human consumption is the primary factor responsible for the dramatic decline (99 percent) in white abalone abundance, and it has led to a situation where the density of surviving adults is so low that successful reproduction and recruitment are unlikely to occur. There are very limited opportunities for people to harvest abalone in California any longer, and, therefore, NMFS believes there is a significant threat to white abalone from poaching because abalone as a group continue to be highly prized and in demand as food by humans.

Between July 1999 and April 2001, 135 citations were issued for violations of Title 14, 29.15, which addresses abalone taken out of season, sizes, and overlimits (Gaskins, pers. comm., 2001). Because of the extremely low population size and low density of the surviving adult white abalone in California, any successful poaching efforts will reduce adult densities even further, thereby increasing the likelihood of recruitment failure and risk of extinction. The identification of critical habitat for white abalone would disclose to the public those limited areas where the species may currently exist, and, therefore, NMFS believes such an action will increase the threat of poaching to white abalone.

In addition, the available information indicates that habitat degradation or loss was not responsible for the dramatic reduction in abundance of white abalone. It is probable that the isolated location of the northern and southern Channel Islands, where most white abalone were historically harvested, and the relatively deep depth of white abalone habitat throughout its range have limited the impacts of anthropogenic habitat alterations. NMFS believes that the continued isolation of white abalone habitat from human activities serves to protect that habitat. Given the distribution of the white abalone habitat between Point Conception and the Mexican border and the fact that much of it is isolated in the Channel Islands, there are few Federal activities (e.g., oil and gas development, mining, dredge disposal) that have the potential to impact white abalone habitat between Point Conception and the Mexican border. In the case of oil and gas development, for example, future oil and gas leasing which could potentially lead to more exploration and development in this area is not expected to occur in the foreseeable future because of a Presidential moratorium that prohibits leasing through the year 2012. Although there are a small number of existing leases where very limited exploration may occur in the future, this activity would be focused in only a few locations well offshore from areas that might contain white abalone habitat. Hard minerals exploration and mining in coastal areas south of Point Conception are not constrained by the Presidential moratorium, but there are no such activities occurring at present and none are expected in the foreseeable future. Because few, if any, Federal activities are likely to affect white abalone habitat, NMFS believes that there are minimal additional regulatory benefits through ESA section 7 that are likely to accrue to the species from the designation of critical habitat.

After considering the increased risks to white abalone from poaching that would be more likely to occur as a result of a critical habitat designation, and noting the benefits that may accrue to the species from such a designation, NMFS does not believe that a designation would provide significant benefits that outweigh the increased risks (see 50 CFR 424.12(a)(1)(i)). Based on all of the above NMFS has determined that it is not prudent to

designate critical habitat for white abalone at this time.

Issue 4: Need To Initiate a White Abalone Recovery Program

Comment: Several commenters strongly urged NMFS to initiate a recovery effort for white abalone as soon as possible because they believe that the population only consists of a very few, older individuals and successful reproduction is unlikely to occur at present densities. These commenters also urged NMFS to establish breeding programs, including outplanting and monitoring of laboratory reared animals, in an effort to provide for the continued existence of white abalone.

Response: NMFS recognizes that the continued existence of white abalone is precarious and that the species is at a high risk of extinction in the near future. For this reason, NMFS agrees there is an urgent need to embark on a recovery effort for this species as soon as possible. NMFS is committed to this effort and intends to take a lead role in white abalone recovery, including the establishment of a white abalone recovery team and the development of a recovery plan. NMFS also continues to be supportive of the restoration efforts promoted by the White Abalone Restoration Consortium, which includes the collection of white abalone broodstock followed by spawning and rearing of progeny in the laboratory for subsequent re-establishment in the wild. NMFS believes that efforts such as these will be crucial to ensuring the continued survival and long-term recovery of white abalone.

Status of White Abalone

Section 3 of the ESA defines the term ''endangered species'' as any species that is in danger of extinction throughout all or a significant portion of its range. The term ''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.'' NMFS considered the following factors in evaluating the risks facing white abalone and in making a determination as to its current status: (1) Current abundance in relation to historical abundance; (2) trends in abundance; (3) spatial and temporal distribution and effective population size, and (4) natural and human influences. A discussion of these factors with respect to white abalone is presented in detail below.

1. Current Abundance in Relation to Historical Abundance

a. *Historical Abundance*. Estimates of pre-exploitation abundance of white abalone can be made from both fishery-independent and fishery-dependent data and by using an estimate of the total area of white abalone habitat within the species range. Based on a historical range between Point Conception and Punta Eugenia and on the assumption that 3 percent of the area within depth contours of 25 to 65 m (82-213 ft) is rocky reef habitat, Davis *et al.* (1998) estimated the total area of white abalone habitat throughout the species' range to be 966 hectares (ha). Using Tutschulte's (1976) density estimate of 0.23 white abalone/m2, Hobday and Tegner (2000a) estimated a pre-exploitation abundance of 2,221,800 animals. Hobday and Tegner (2000a) calculated a second pre-exploitation population abundance estimate for white abalone in Mexico of 2.12 million individuals using fishery-independent data from surveys conducted by Guzman and Proo *et al.* (1976) between 1968 and 1970 along the west coast of Baja California within the depth range of 0 to 27 m (0-89 ft). Hobday and Tegner (2000a) then doubled this estimate to account for white abalone in California and calculated a pre-exploitation estimate of white abalone abundance of 4.24 million animals throughout the range of the species. This second larger estimate incorrectly assumes that white abalone were found throughout the area surveyed (i.e., in southern Baja, California), and therefore, may overestimate white abalone abundance.

Hobday and Tegner (2000a) also calculated a pre-exploitation abundance of white abalone using fishery-dependent data. Between the peak years of white abalone exploitation in California, approximately 605,807 lbs (274,792 kg) of white abalone were landed. Assuming each abalone weighs 1.67 lbs (.76 kg), then a total of 362,759 animals were harvested. Since it would have taken 10 years for white abalone to reach California's legal size limit, and the fishery collapsed after only 10 years of exploitation, Hobday and Tegner (2000a) assume that all legal-sized adults were harvested every year. If total catch in the 10-year period represents the total accumulated virgin stock and there was no recruitment, they estimated the pre-exploitation California population size equals the total catch between 1969 and 1978 which was crudely estimated to be 362,759 animals. If this figure is doubled to include Mexico, the historical abundance is estimated to be 725,518 white abalone throughout its historical range. However, the actual pre-exploitation abundance must have been greater because some white abalone were harvested in subsequent years, some animals were lost to natural mortality, and white abalone from the recreational catch were not included in the estimate. Not all of the pre-exploitation estimates account for cryptic white abalone.

b. *Current Abundance*. Using a research submersible vessel, the first deep-reef surveys for white abalone were conducted near Santa Barbara, Anacapa, and Santa Cruz Islands, and on Osborn Bank in 1996 and 1997 (Davis *et al.*, 1998). After searching 77,070 m^2 (829,601 ft^2) of rocky reef between 27 and 67 m (89 and 220 ft) depth, only nine live white abalone were found. Assuming that population densities of white abalone estimated from these surveys (i.e., 0.000167 white abalone/m^2, ±0.0001) were representative of white abalone densities throughout their entire range and that the total available habitat within the species range is 966 ha (2,386 acres), Hobday and Tegner (2000a) estimated that the population size throughout the entire range of the species was 1,613 white abalone. They concluded from these results that white abalone are absent or at extremely low densities at all depths and areas surveyed. Using these same data, Davis *et al.* (1998) estimated that fewer than 1,000 white abalone existed in 1996-1997 throughout the species range and concluded that these submersible surveys both confirmed the ''critically low '' population density and demonstrated the lack of a *de facto* refugia beyond normal SCUBA depths.

In October 1999, scientists conducted another deep-reef survey for white abalone near Santa Cruz, Anacapa, Santa Barbara, San Clemente and Santa Catalina Islands and on Osborn, Farnsworth, Tanner and Cortez Banks using a submersible vessel (Haaker *et al.*, 2000; Hobday and Tegner, 2000b). In contrast to the 1996-1997 submersible surveys, the areas selected for the October 1999 study were the areas where the greatest amount of white abalone had been removed by the commercial and recreational fisheries in the 1970s. This survey covered approximately 57.5 ha (142 acres) (Haaker *et al.*, 2000) of suitable white abalone habitat, at a depth between 19 and 65 m (62 and 213 ft), and found 157 live white abalone with an average density of 0.00027 white abalone/m^2 or 2.7 white abalone per ha.

The 1996-1997 and 1999 surveys for white abalone in California covered approximately 6 percent of the estimated 966 ha (2,386 acres) of suitable habitat throughout the species'

range, so Hobday and Tegner (2000b) combined data from these surveys and calculated another estimate of current population abundance. Based on the estimated potential habitat (966 ha or 2,386 acres) and the area-specific white abalone densities, Hobday and Tegner (2000b) calculated a revised current population abundance of 2,540 individuals throughout the range of the species.

In October and November of 2000, NMFS and the California Department of Fish and Game (CDFG) conducted a remotely operated vehicle survey for white abalone in the vicinity of Catalina Island, San Clemente Island, Cortes Bank, and Tanner Bank. These survey localities constituted areas which historically accounted for more than 90 percent of all white abalone landings. The number of white abalone observed by both the pilot and an observer were counted for each dive and video tapes of each dive were re-analyzed after the survey to confirm identifications and to count cryptic animals. Transects were only conducted on rocky substrates and at depths ranging from 35-65 m where white abalone are normally found. Based on the results of this survey, the white abalone population in U.S. waters was estimated as 1,658 individuals with a 95-percent confidence interval of 174-15,579 individuals. The high variance associated with this estimate is due to the variability in the numbers of white abalone observed in the transects.

All of these historical and current white abalone abundance estimates are likely to be biased for several reasons. First, the total amount of white abalone habitat may be more or less than the 3-percent assumed area within the depth range between 25 and 65 m (82-213 ft), and the amount of habitat may vary among different geographic areas (Hobday and Tegner, 2000b). Second, since the exact width of the submarine transects are not known, the area actually surveyed may be larger or smaller than that which was assumed. In addition, since white abalone prefer low relief rocks covered with foliose algae near sand at depths between 40-60 m, observers collecting data during surveys may preferentially search these areas. Finally, in 1996 alone, 12,307 kg (27,132 lb) of white abalone were reported in Mexican commercial abalone landings. Based on an average weight of 1.67 lb (0.75 kg) per white abalone, landings of this magnitude would lead to an approximation of 32,000 white abalone (Hobday and Tegner, 2000a). If the Mexican landings data are correct, the current white abalone density estimates based on fishery-independent data may be too low.

2. Trends in Abundance

a. *Commercial Fishery Data—California.* Commercial white abalone harvest began in 1967, at a time when the total abalone landings in California began to decline (Hobday and Tegner, 2000a). Over 95 percent of the commercial white abalone landings occurred within the 9-year period between 1969 and 1977. White abalone landings peaked at 144,000 lbs (86,000 individuals) in 1972, only 3 years after intense harvest began. The decline in white abalone landings was so dramatic by 1978 (less than 5,000 lbs (2270 kg) landed), that the CDFG no longer required white abalone to be reported separately on commercial landings receipts. Between 1987 and 1992, only 11 white abalone were voluntarily reported in commercial landings, and, since 1992, none have been reported.

b. *Recreational Fishery Data—California.* Data on the recreational catch of abalone in California comes from commercial passenger dive boats (Hobday and Tegner, 2000a). Between 1971 and 1993, white abalone comprised 1.29 percent of the total, and 2.89 percent of the ''identified,'' recreational abalone catch in California. Most of the catch was harvested from Santa Catalina and San Clemente Islands. Recreational harvest of white abalone peaked at about 35,000 animals in 1975, then declined sharply. By 1986, white abalone were rarely reported as landed by divers using commercial dive boats. Abalone catch from recreational divers not using commercial dive boats has not been quantified.

c. *Commercial Fishery Data—Mexico.* Data on abalone landings in Mexico are limited because species-specific catch data are sparse. Before 1984, Mexico did not require commercial abalone fishermen to land abalone in the shell, the only visual identifying characteristic. Prior to about 1990, Hobday and Tegner (2000a) found no data on the number or weight of white abalone landed in Mexico. Often, available data were temporally and spatially inconsistent and contradictory.

Although white abalone are deep-living and often difficult to find, they were harvested in Mexico prior to 1931 because the tender meat attracted a high price (Croker, 1931). Historically, white abalone comprised only a few percent of the total abalone in Baja California. However, in certain cooperatives, white abalone was sometimes a significant portion of the abalone catch (Hobday and Tegner, 2000a). For instance, between 1992 and 1994, white abalone represented about 65 percent of the catch of one Mexican fishing cooperative. Since the total abalone catch for that cooperative was 57,983 lbs (26,301 kg) of meat, 65 percent of the catch represents a large amount of white abalone meat (i.e., 37,689 lbs or 17,096 kg). Hobday and Tegner (2000a) suggest that this harvest may represent overharvesting of newly located reefs, because that harvest rate was not sustained in subsequent years.

Data from Zone 1 (the northernmost portion of the species range in Mexico) from 1990 to 1997 indicate that white abalone represented only 0.73 percent of the total abalone catch (Hobday and Tegner, 2000a). In this same zone, no catch trends are evident for any abalone species. White abalone were not harvested south of Zone 1 from 1993 to 1998. Although the data are limited, it appears that in those areas, catch-per-unit-effort of abalone declined from 205 to 18 kg/boat/day (452 to 40 lbs) between 1958 and 1984, respectively (Guzman del Proo, 1992, as cited in Hobday and Tegner, 2000a).

Since 1981, total abalone catch has remained near 800-1000 tons (726 - 907 metric tons), with most abalone harvested from Cedros Island. From 1993 to 1998, the price of abalone in Mexico remained constant and is an important source of income for the region (Ponce-Diaz *et al.*, 1998, cited in Hobday and Tegner, 2000a). Based on trends in landings, Mexico's white abalone populations may be depleted (Guzman del Proo, 1992), though perhaps not as severely as in the United States (Hobday and Tegner, 2000a).

d. *Recreational Fishery–dependent Data—Mexico.* Although there is no recreational abalone fishery in Mexico, the collection of intertidal abalone is thought to occur at some unknown level (Hobday and Tegner, 2000a).

e. *Summary of Trends.* Survey assessments for white abalone have been limited in number and are spatially separate (Hobday and Tegner, 2000a). For this reason and because relatively few white abalone were observed, estimates of white abalone density based on fishery-independent data collected during surveys in the 1980's and 1990's are imprecise. The current white abalone abundance estimates based on these survey data may also be biased due to assumptions about the total amount of white abalone habitat currently available (e.g., 3 percent) and the amount of area actually surveyed. Nevertheless, data collected from the white abalone surveys represent the best available scientific information on the species.

The results of the series of fishery-independent abalone surveys conducted in the early 1980s and 1990s indicate that white abalone density may have declined by several orders of magnitude in California since 1970 (Hobday and Tegner, 2000a). Over the last 30 years, white abalone abundance has declined from approximately 2.22 to 4.24 million animals (pre-exploitation) to approximately 1,613 to 2,540 animals throughout the species' range. This decline represents a decrease in white abalone abundance of over 99 percent since exploitation began in the late 1960s. Review of the commercial landings data also indicates a significant decline in white abalone abundance, from a peak of 144,000 lbs (65,318 kg) in 1972 to less than 1,000 lbs (454 kg) in 1979, after only a decade of commercial exploitation.

3. Spatial and Temporal Distribution and Effective Population Size

In addition to the absolute number of individuals in a population or species, the spatial and temporal distribution of individuals is critical for successful fertilization, recruitment, and survival of local populations. Reproductive failure will occur below a threshold population density because surviving individuals are so few and so scattered that they cannot find mates. This is commonly referred to as the ''Allee Effect'' (Primack, 1993). Individuals that are close enough to find mates may still not produce offspring because of other factors such as age, poor health, sterility, malnutrition, and small body size (Primack, 1993). As a result of these factors, the ''effective population size'' of breeding individuals will be substantially smaller than the actual population size.

Even with high adult densities, abalone recruitment is highly variable and unpredictable (Davis *et al.*, 1996). Based on results from modeling and experiments with sea urchins, Pennington (1985) demonstrated that successful fertilization for broadcast spawners requires that males and females be close enough for free-swimming sperm to contact eggs in sufficient densities. Juvenile abalone recruitment severely declines or ceases in abalone populations that are depleted below approximately 50 percent of virgin stock levels (Shepherd and Brown, 1993; Richards and Davis, 1993). Price *et al.* (1988) found that abundance of breeding animals determined recruitment for the Australian abalone species, *Haliotis* rubra. Thus, despite the fact that adult abalone broadcast millions of sperm and eggs and their offspring have a planktonic larval phase, locally reduced adult abalone densities can result in lower local recruitment. More recently, Babcock and Keesing (1999) found that, for the Australian abalone species, *Haliotis laevigata*, recruitment failure occurred when the mean nearest neighbor distances were over 1-2 m (3.3–6.6 ft) or when densities fell below 0.3 animals/m^2. They also speculate that reductions in abalone densities may further reduce reproductive success by limiting the ability to synchronize reproductive behavior.

Because abalone are slow-moving bottom dwellers, their ability to aggregate during spawning to overcome even relatively small distance separations is extremely limited. If the current estimate of white abalone density (e.g., 0.00027 white abalone/m^2) is representative throughout most of the range of the species, it is far below that necessary to produce gamete concentrations high enough for effective fertilization. Based on the current estimated average distance of approximately 50 m (164 ft) between white abalone adults, the chance of successful fertilization and regular production of viable cohorts of juvenile white abalone is extremely low (Davis, 1998).

The density of white abalone observed during the 1999 submersible survey varied from 0 to 9.76 abalone per ha (Hobday and Tegner, 2000b). The highest densities were found at Tanner Bank, an offshore area where distance, average sea conditions, and navigational challenges may have reduced white abalone fishing effort. Of the 157 white abalone found in the October 1999 submersible survey, nearly 80 percent were individuals where the nearest neighbor was more than 2 m (6.6 ft) away (Hobday and Tegner, 2000b). Twenty percent of the white abalone observed were found in ''groups'' of two, and one group of four was found. Although these groups have the potential to produce offspring if at least one male and one female occurs in each group, it is still likely that the effective population size of the species is currently very small (Hobday and Tegner, 2000b).

The size and frequency of empty abalone shells observed during surveys can also indicate local population structure and whether habitat is suitable for survival. For example, about 20 percent of the empty shells near stable red abalone populations with regular juvenile recruitment are juvenile-sized shells (Hines and Pearse, 1982, reported in Davis *et al.*, 1996). In contrast, the percentage of juvenile-sized empty shells found near a red abalone population on the verge of collapse at Santa Rosa Island dropped from 22 percent to 6 percent as recruitment and adult densities declined (Tegner *et al.*, 1989; Davis *et al.*, 1992, reported in Davis *et al.*, 1996).

Davis *et al.* (1996) found that during the 1992-1993 SCUBA surveys for white abalone, most of the empty shells and live individuals were probably more than 25 years old (>140 mm or 5.5 inches). All of these shells, except one, were adult size (>50 mm or 2 inches) and most were between 131 and 180 mm (5 and 7 inches). During the 1996-1997 white abalone surveys, over 300 empty shells were observed. All of these shells appeared to be over 25 years old (Davis, G., pers. comm., February 2000). These observations indicate that the survey sites were previously inhabited by white abalone. Davis *et al.* (1998) concluded that these older abalone represent the last major cohort recruited to the population. This cohort would have been spawned in the late 1960s or early 1970s and survived because they would have been too small to be legally harvested during the peak of the fishery in the 1970s.

4. Other Natural and Human Influences

See subsections (A), (C), and, (E) in the section of this notice entitled ''Summary of Factors Affecting White Abalone.''

Summary of Factors Affecting White Abalone

Section 4(a)(1) of the ESA and the listing regulations (50 CFR part 424) set forth procedures for listing species. NMFS must determine, through the regulatory process, if a species is endangered or threatened based upon any one or a combination of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) inadequacy of existing regulatory mechanisms; or (E) other natural or human-made factors affecting its continued existence. NMFS' status review for white abalone (Hobday and Tegner, 2000a), which includes a review of current and historical factors affecting white abalone, identifies overutilization for commercial purposes as the primary reason for the decline of white abalone (Hobday and Tegner, 2000a). The following discussion summarizes NMFS' findings regarding the factors responsible for the decline of white abalone.

A. Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

Loss or modification of habitat is not likely to have been a factor in the decline of white abalone. Hobday and Tegner (2000a) conclude that natural or anthropogenic white abalone habitat losses are unknown. However, due to the isolation of the offshore islands off southern California and northern Baja California, and the depth range of the species, anthropogenic impacts to white abalone habitat should be limited near the islands. The CDFG believes that direct threats to white abalone are limited, especially on the islands offshore of southern California, but indicated that mainland habitat may have been affected to an ''unknown extent'' for a variety of unspecified land-based human activities. Historically, pollution did affect shallow water abalone habitat (i.e., *Macrocystis* kelp forests) along the Palos Verdes Peninsula in the 1950s which resulted in a decline in certain shallow water abalone populations (Tegner, 1989; 1993). The source of that pollution has been controlled, however, and it is no longer affecting abalone habitat in that area.

B. Overutilization for Commercial, Recreational, Scientific or Educational Purposes

White abalone abundance has declined significantly throughout its range as a result of overutilization for commercial and recreational purposes. Hobday and Tegner (2000a) suggest that white abalone in California were subject to ''serial depletion'' by the commercial fishery during the early 1970s. Due to their life history characteristics as slow-moving bottom dwellers with external fertilization, abalone are particularly susceptible to local and subsequent serial depletion. If female abalone are not within a few meters of males when they both spawn, the sperm will be too diluted by diffusion to fertilize the eggs (Davis *et al.*, 1996). As local abalone density declines, the probability of successful fertilization and subsequent recruitment decreases. Serial depletion occurs as fishermen shift from exploited to unexploited fishing areas due to local depletion. Total landings may remain constant in the short term. Eventually, however, if all areas are harvested at unsustainable levels, recruitment failure occurs on a region wide basis. The CDFG believes that the most significant threat to white abalone is related to the effects of low population abundance on continued white abalone reproduction, survival and recovery.

White abalone catch data from California indicate that over 80 percent of the white abalone landings were taken from San Clemente Island. The offshore Tanner Bank and Cortez Bank-Bishop Rock region provided 13 percent of the total catch. Between 1965 and 1975, over 25 percent (average 43 percent) of the white abalone catch in each area came from a single year (Hobday and Tegner, 2000a). If harvest was sustainable, the portion of catch harvested each year at each location should have been more consistent over a period of years. Region-wide landings of white abalone peaked at 144,000 lbs (65,318 kg) in 1972 after only 3 years of commercial exploitation, and declined to less than 10,000 lbs (4,535 kg) in 1977. By 1978, white abalone landings were so negligible (<1,000 lbs or 454 kg) that CDFG no longer collected landings data for the species.

Hobday and Tegner (2000a) suggest that the increasing value of abalone may have contributed to increased fishing pressure. For example, the price of white abalone increased from about $2.50 per pound in 1981 to about $7 per pound in 1993. As the catch of all abalone declined, the total and per-unit value of the harvest continued to increase. White abalone was usually the most valuable species and by 1988, white abalone was worth twice the value of other abalone species (Davis *et al.*, 1996).

C. Disease or Predation

First detected in 1985, withering syndrome disease has significantly affected west coast abalone species, especially the black abalone. Withering syndrome also occurs in pink, red, and green abalone (Alstatt *et al.*, 1996, cited in Hobday and Tegner, 2000a). Withering syndrome has recently been identified as a ricksettia bacterium that affects the digestive glands of abalone. Surveys of black abalone suffering from withering syndrome found large numbers of empty black abalone shells. Hobday and Tegner (2000a) suggest that large numbers of empty white abalone shells should have been detected during the abalone surveys of the 1980s if white abalone were significantly affected by withering syndrome.

In 1990, 20 freshly dead white abalone with undamaged shells that could have been killed by withering syndrome were collected from Santa Catalina (Tegner *et al.*, 1996). In 1993, two live white abalone were collected from Santa Catalina Island and diagnosed with withering syndrome, and a white abalone in captivity recently died and showed symptoms of withering syndrome. Although withering syndrome may affect white abalone at some frequency, it is unlikely to have been a major factor in the decline of the species. The mass mortalities associated with the outbreak of withering syndrome in black abalone populations resulted in large numbers of shells which were easily detected in surveys (Hobday and Tegner, 2000a). If white abalone were similarly affected in large numbers, large numbers of shells or affected individuals of all size classes would have been detected in the surveys of the early 1980's, but this was not the case.

Several abalone predators have been documented, including sea stars, fish, crabs, octopuses, and sea otters (Hobday and Tegner, 2000a). Although increases in abundance of these predators could be related to declines in white abalone abundance, no information is available on the density of the invertebrate predators in white abalone habitat. Predation by sea otters is not likely to have been a major factor in the decline of white abalone due to its depth range and latitudinal distribution. In California, sea otters seldom forage below 20-25 m, and with the exception of San Miguel and San Nicolas Islands, otters do not occupy the same geographic range as white abalone. The CDFG believes that factors such as disease or predation may have contributed to the decline of white abalone but are not currently a major factor affecting the species' continued existence.

D. The Inadequacy of Existing Regulatory Mechanisms

Because white abalone has experienced significant declines in abundance throughout its range as a result of commercial over harvesting, harvest regulations for white abalone during the major period of its decline in the 1970s were clearly inadequate to conserve the resource and maintain white abalone harvest at sustainable levels.

The establishment of minimum size limits has been a strategy used worldwide to manage the harvest of abalone on a sustainable basis (Hobday and Tegner, 2000a). In California, minimum size limits were established for abalone that were greater than the size of sexual maturity which should have allowed for several years of reproduction before the animals reached legal harvest size. However, successful reproduction does not necessarily occur each year. If reproductive failure occurs for several years, abalone could reach legal size and be removed by the fishery before they have successfully reproduced and contributed offspring to

the population. California also prohibited abalone harvest during the spawning season. Other regulations, such as bag limits for recreational fishermen, and limited entry, were also implemented by California as abalone management measures.

In 1970, California established a permit fee of $100 for both divers and crew members (Burge *et al.*, 1975; cited in Hobday and Tegner, 2000a). The diver fee increased to $200 in 1975 and finally reached $330 in 1991. Relative to permit fees charged by other countries to harvest abalone (e.g., Tasmania, South Australia), these relatively low fees did not promote sustainable abalone fishing in California.

California's abalone management did not prevent serial depletion of white abalone or promote sustainable harvest practices in the 1970s. In 1996, the California Fish and Game Commission closed the California white abalone fishery to protect the surviving adults (Davis *et al.*, 1998). NMFS does not have present documentation that Mexico has closed its commercial white abalone fishery or limited white abalone fishing.

The intentional capture of sub-legal abalone (i.e., poaching) before they contributed substantially to the population could have reduced the reproductive potential of white abalone (Hobday and Tegner, 2000a); however, this is not likely to have been a major factor in the decline of white abalone because the State of California has required all commercially caught abalone to be landed in the shell. In Mexico, during a survey in 1973, a substantial portion of the commercial white abalone catch was found to be undersized. The impact of illegal white abalone harvesting as a factor of the species' decline is difficult to evaluate in Mexico, but was probably not a major factor in California.

Because abalone has no blood clotting ability, cut animals bleed to death (Cox, 1962, cited in Hobday and Tegner, 2000a). Burge *et al.* (1975) found that accidental cutting of sub-legal sized abalone is a significant cause of mortality and could have further reduced white abalone abundance (Hobday and Tegner, 2000a). For example, mortality due to cutting during collection of sub-legal red abalone was estimated at 60 percent from small cuts in the lab, and almost 100 percent in the field. Even undersized abalone that are handled and replaced without being cut suffer a 2 to 10-percent mortality in the field. Under-sized abalone may also be subject to predation before they have a chance to reattach to the substrate.

E. Other Natural or Manmade Factors Affecting Their Continued Existence

Long-term or short-term changes in ocean conditions could affect both larval and adult abalone (Hobday and Tegner, 2000a). For example, periodic El Nino conditions increase surface water temperatures above optimum larval survival levels. In addition, due to the periodicity of these events, Hobday and Tegner (2000a) suggest the warming events would lead to recruitment failure. The influence of some diseases may increase during periods of warm water conditions. Warm water has also been associated with depleted nutrients in the ocean, declines in *Macrocystis*, and the availability of drifting algae material. The direct or indirect impacts of increasing water temperatures within the depth range on white abalone are unknown. Harvesting of *Macrocystis pyrifera* has been shown to have little effect on shallow-living abalone species (Tegner, 1989) and could even benefit abalone by providing greater amounts of drift algae (Hobday and Tegner, 2000a). For these reasons, habitat loss or modification are not likely to have been factors of decline of white abalone.

Competition from sea urchins and other abalone species for food and space could have been a factor in the decline of white abalone. For instance, increasing trends in abundance of sea urchins (*Strongylocentrotus purpuratus and S. franciscanus*) could have limited the amount of algae available for juvenile or adult white abalone consumption (Hobday and Tegner, 2000a). Although these potential ecological interactions have not been studied in the field, the densities of these potential competitors are also currently low and are no longer likely to limit white abalone abundance (Hobday and Tegner, 2000a).

Hybridization of white abalone with other more abundant California abalone species could potentially lower white abalone population size (Hobday and Tegner, 2000a). Natural hybridization between other California abalone species and white abalone has been observed. Owen *et al.* (1971) found that disturbance, high sea urchin frequency, and low abundance of one parent species increased the frequency of abalone hybrids. However, because large numbers of white abalone hybrids have not been found in the field, Hobday and Tegner (2000a) conclude that hybridization of white abalone with other abalone species is unlikely to have led to a decline of the species.

Efforts Being Made To Protect White Abalone

Section 4(b)(1)(A) of the ESA requires the Secretary of Commerce to make listing determinations solely on the basis of the best scientific and commercial data available and after taking into account efforts being made by any state or foreign nation to protect a species, by predator control, protection of habitat and food supply, or by other conservation practices. In making this listing determination, therefore, NMFS must consider white abalone status and the factors that have led to its decline, as well as state or foreign conservation efforts that may ameliorate the risks faced by the white abalone.

In judging the efficacy of state or foreign conservation efforts, NMFS considers the following: (1) The substantive, protective, and conservation elements of such efforts; (2) the degree of certainty that such efforts will be reliably implemented; and (3) the presence of monitoring provisions that determine effectiveness and that permit adaptive management (NMFS, 1996b). In some cases, conservation efforts may be relatively new and may not have had time to demonstrate their biological benefit. In such cases, provisions for adequate monitoring and funding of conservation efforts are essential to ensure intended conservation benefits are realized.

State of California Conservation Measures for White Abalone

The CDFG has conducted and/or participated in several SCUBA and submersible surveys documenting the distribution and abundance of white abalone (1980-81, 1992-93, 1996-97, and 1999). The data and information gathered from these surveys have contributed to a better understanding of the decline of white abalone. Because the state required that abalone fishermen submit landings data, the precipitous decline of white abalone in the 1970s was documented. As mentioned previously, the state closed white abalone fishing in 1996, thereby eliminating the factor most responsible for the species' decline. The closure of all abalone fisheries in southern California in 1997 has also reduced the likelihood of accidental harvest or poaching of white abalone in California. Despite these state conservation measures, the species may not survive without human intervention because most of the remaining individuals are too far apart to successfully reproduce.

Mexican Conservation Measures for White Abalone

At present, NMFS does not know whether Mexico has closed its white abalone fishery or instituted other conservation measures to protect the species. Pursuant to 50 CFR 424.16, NMFS provided Mexico with a notification that it had published a **Federal Register** document proposing to list the white abalone which occurs along the coast of both the United States and Mexico, and also invited Mexico to provide any information or comments it may have on the proposal. In addition, NMFS requested that Mexico provide the agency with information on any conservation measures it may have implemented to protect the white abalone. To date, Mexico has not responded to this request for comments and information.

Private-public Partnerships

Due to concern over the depleted status of white abalone, a consortium of scientists, fishermen, conservation organizations, universities, Federal and state agencies, and mariculturists in private enterprise have joined together to develop and execute a plan to restore white abalone populations (Davis *et al.*, 1998). The White Abalone Restoration Consortium (Consortium) has developed the following four-step restoration plan: (1) Locate surviving white abalone by surveying historical habitat; (2) collect brood stock; (3) breed and rear a new generation of brood stock; and (4) re-establish refugia of self-sustaining brood stocks in the wild. The Consortium has also initiated an outreach program to raise public awareness of the status of white abalone and restoration efforts. Particularly challenging is the ability to increase public awareness of a relatively small and unknown marine invertebrate. Because nearly 25 years of artificially producing and outplanting juvenile and younger red abalone in California have failed to demonstrate effective population restoration, the Consortium is advocating that captive-born white abalone be reared until 4 years of age (>100 mm or 4 inches). Federal, state, and private grants and funds have recently supported white abalone submersible surveys and the establishment of an aquaculture facility specifically designed to breed white abalone in captivity and rear offspring to adulthood for outplanting to the wild.

NMFS recognizes that many of the existing conservation measures described here can serve to protect the remaining white abalone survivors, but they do not yet provide for white abalone conservation at a scale that is adequate to protect and recover the species. Due to the extremely low population abundance of white abalone throughout its range, NMFS believes that the existing protective measures alone will not be sufficient to reduce the risk of white abalone extinction in the near future.

Listing Determination

The ESA defines an endangered species as any species in danger of extinction throughout all or a significant portion of its range, and a threatened species as any species 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) and (20)). Section 4(b)(1) of the ESA requires that the listing determination be 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 those efforts, if any, being made by any state or foreign nation to protect and conserve the species.

The available white abalone landings data and analysis of fishery-independent data indicate that over the last 30 years, white abalone has declined in abundance by over 99 percent and several orders of magnitude. Most of the remaining survivors are old and so scattered that they will not be able to find mates to spawn successfully and regularly produce viable cohorts of juveniles. While NMFS recognizes that many of the existing conservation measures help protect the remaining white abalone, they do not yet provide for white abalone conservation at a scale that is adequate to protect the species.

Based on a review of the best available information, including the findings from NMFS's white abalone status review, information received in the petition to list white abalone as an endangered species, other published and unpublished information, and comments on the listing proposal, NMFS has determined that white abalone are in danger of extinction throughout all or a significant portion of their range, and therefore, warrant listing as an endangered species throughout its range in the United States and Mexico.

Prohibitions and Protective Measures

Section 9 of the ESA prohibits certain activities that directly or indirectly affect endangered species. These prohibitions apply to all individuals, organizations and agencies subject to U.S. jurisdiction. Section 9 prohibitions apply automatically to endangered species.

Sections 7(a)(2) and (4) of the ESA require Federal agencies to consult with NMFS to ensure that activities they authorize, fund, or conduct are not likely to jeopardize the continued existence of a listed species or a species proposed for listing, or to adversely modify critical habitat or proposed critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with NMFS. Examples of Federal actions that may affect white abalone include coastal development, outfall construction and operation, power plant permitting, oil and gas exploration and development, etc.

Sections 10(a)(1)(A) and (B) of the ESA provide NMFS with authority to grant exceptions to the ESA's Section 9 ≥take≥ prohibitions. Section 10(a)(1)(A) scientific research and enhancement permits may be issued to entities (Federal and non-Federal) for scientific purposes or to enhance the propagation or survival of a listed species. The type of activities potentially requiring a section 10(a)(1)(A) research/enhancement permit include scientific research that targets white abalone, collection of adult white abalone for artificial propagation purposes, and aggregation or relocation of white abalone to enhance the potential of natural propagation in the wild.

Section 10(a)(1)(B) incidental take permits may be issued to non-Federal entities performing activities that may incidentally take listed species, as long as the taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Conservation Measures

Conservation measures that may apply to listed species include conservation measures implemented by states, foreign nations, local governments, and private organizations. Also, Federal, state, and foreign nations' recovery actions, Federal consultation requirements, and prohibitions on taking constitute conservation measures. In addition, recognition through Federal government or state listing promotes public awareness and conservation actions by Federal, state, tribal governments, foreign nations, private organizations, and individuals.

Based on information presented in this final rule, general protective and conservation measures that could be implemented to help conserve white abalone, but which do not constitute NMFS' interpretation of a recovery plan under section 4(f) of the ESA, include the following:

1. Continue the state prohibition on commercial and recreational white abalone fishing in California.

2. Continue efforts to locate white abalone in California and Mexico by surveying historic habitat.

3. Collect white abalone brood stock, spawn the brood stock, rear the offspring to early adulthood, and outplant the next generation in the wild.

4. Collect and aggregate adult white abalone in the wild to facilitate successful reproduction in the field.

5. Promote protection and conservation of white abalone in Mexico.

Take Guidance

NMFS and the FWS published in the **Federal Register** on July 1, 1994, (59 FR 34272), a policy that NMFS shall identify, to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the ESA. The intent of this policy is to increase public awareness of the effect of this listing on proposed and ongoing activities within the species' range. NMFS believes, based on the best available information, the following actions will not result in a violation of section 9:

1. Possession of white abalone which are acquired lawfully by permit issued by NMFS, pursuant to section 10 of the ESA, or by the terms of an incidental take statement, pursuant to section 7 of the ESA.

2. Federally funded or approved projects for which ESA section 7 consultation has been completed, and when activities are conducted in accordance with any terms and conditions provided by NMFS in an incidental take statement accompanying a biological opinion.

Activities that NMFS believes could potentially harm white abalone, and result in a violation of ESA section 9 take prohibitions include, but are not limited to:

1. Coastal development that adversely affects white abalone (e.g., dredging and other coastal construction projects).

2. Destruction/alteration of white abalone habitat, such as the harvesting of algae.

3. Discharges or dumping of toxic chemicals or other pollutants (e.g., sewage, oil, gasoline) into areas supporting white abalone.

4. Interstate and foreign commerce of white abalone and import/export of white abalone without a permit.

5. Collecting or handling of white abalone in the United States. Applications may be submitted to NMFS for the purpose of scientific research or to enhance the propagation or survival of the species.

These lists are not exhaustive. They are intended to provide some examples of the types of activities that might or might not be considered by NMFS as constituting a take of white abalone under the ESA and its regulations. Questions regarding whether specific activities will constitute a violation of the ESA section 9 take prohibitions and general inquiries regarding prohibitions and permits should be directed to NMFS (see **ADDRESSES**).

Critical Habitat

See the response to Issue 3 - Need for Designation of Critical Habitat for a complete discussion of critical habitat.
References

A complete list of all cited references is available upon request (see **ADDRESSES**).

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 (NEPA). (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 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 13132–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, NMFS has conferred with the State of California in the course of assessing the status of white abalone, and considered, among other things, state and local conservation measures. California has expressed support for the conservation of white abalone. The content of this dialogue with the State of California as well as the basis for this action, is described in the **SUPPLEMENTARY INFORMATION** section of this document. As NMFS moves forward with its recovery effort for white abalone, it intends to continue engaging in informal and formal contacts with the State of California, other affected local or regional entities, and those engaged in ongoing conservation efforts for white abalone.

List of Subjects in 50 CFR Part 224

Administrative practice and procedure, Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Dated: May 21 2001.

William T. Hogarth,

Acting Assistant Administrator for Fisheries, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 224 is amended to read as follows:

PART 224—ENDANGERED MARINE AND ANADROMOUS SPECIES

1. The authority citation for part 224 continues to read as follows:

Authority: 16 U.S.C. 1531-1543 and 16 U.S.C. 1361 *et seq.*

2. In § 224.101, paragraph (d) is added to read as follows:

§ 224.101 Enumeration of endangered marine and anadromous species.

* * * * *

(d) *Marine invertebrates.* White abalone (*Haliotis sorenseni*).

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