



Billing Code 4333–15

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R8–ES–2019–0025; FF09E22000 FXES11130900000 201]

RIN 1018–BD45

Endangered and Threatened Wildlife and Plants; Reclassification of Morro

Shoulderband Snail (*Helminthoglypta walkeriana*) from Endangered to Threatened with a 4(d) Rule

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to reclassify the Morro shoulderband snail (*Helminthoglypta walkeriana*) from an endangered to a threatened species under the Endangered Species Act of 1973, as amended (Act), and we propose a special rule under section 4(d) of the Act. This proposed reclassification is based on our evaluation of the best available scientific and commercial information, which indicates that the species' status has improved such that it is not currently in danger of extinction throughout all or a significant portion of its range, but that it is still likely to become so in the foreseeable future. We also propose to update the Federal List of Endangered and Threatened Wildlife to reflect the latest scientifically accepted taxonomy and nomenclature for the species as *Helminthoglypta walkeriana*, Morro shoulderband snail. We seek information, data, and comments from the public on this proposal. We also announce the availability of an assessment of the status of the Chorro shoulderband

snail (*Helminthoglypta morroensis*) in which we conclude that the species does not meet the definition of a threatened species or an endangered species.

DATES: We will accept comments received or postmarked on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES** below) must be received by 11:59 p.m. Eastern Time on the closing date.

ADDRESSES: *Comment submission:* You may submit comments by one of the following methods:

(1) Electronically: Go to the Federal eRulemaking Portal:

<http://www.regulations.gov>. In the Search box, enter FWS–R8–ES–2019–0025, which is the docket number for this rulemaking. Then click on the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on “Comment Now!”

(2) By hard copy: Submit by U.S. mail to: Public Comments Processing, Attn: Docket No FWS–R8–ES–2019–0025, U.S. Fish and Wildlife Service, MS: PRB/3W; 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments **only** by the methods described above. We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see **Information Requested**, below, for

more information).

Document availability: A copy of the Species Status Assessment Report referenced throughout this document is available at <http://www.regulations.gov> under Docket No. FWS–R8–ES–2019–0025.

FOR FURTHER INFORMATION CONTACT: Stephen P. Henry, Field Supervisor, U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, CA 93003; telephone 805–644–1766. If you use a telecommunications device for the deaf (TDD), call the Federal Relay Service at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other governmental agencies, tribes, the scientific community, industry, and other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) Reasons why we should or should not reclassify the Morro shoulderband snail from an endangered to a threatened species under the Act;

(2) New biological or other relevant data concerning any threat (or lack thereof) to this species;

(3) New information on efforts by the State or other entities to protect or otherwise conserve the species;

(4) New information concerning the range, distribution, and population size or trends of this species;

(5) New information on current or planned activities in the habitat or range that may adversely affect or benefit the species; and

(6) Information on activities or areas that might warrant being exempted from the section 9(a)(1) take prohibitions proposed in this rule under section 4(d) of the Act. The Service will evaluate ideas provided by the public in considering the extent of prohibitions that are necessary and advisable to provide for the conservation of the species.

Please include sufficient supporting information with your submission (e.g., scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include. Submissions that merely provide support for or opposition to the action under consideration without supporting information, although noted, may not meet the standard of information required by section 4(b)(1)(A) of the Act (16 U.S.C. 1531 et seq.). This standard directs us to make determinations whether any species is endangered or threatened “solely on the basis of the best scientific and commercial data available.”

You may submit your comments and materials on this proposed rule by one of the methods listed in **ADDRESSES**. We request you send comments only by the methods described in **ADDRESSES**. If you submit information via <http://www.regulations.gov>, we will post your entire submission—including any personal identifying information—on the website. If you make your submission via a hardcopy and it includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so as we post all hardcopy submissions on <http://www.regulations.gov>.

Comments and materials we receive, as well as supporting documentation used in preparing this proposed rule, will be available for public inspection on

<http://www.regulations.gov>.

Public Hearings

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by the date shown in **DATES**. We will schedule a public hearing on this proposal, if any are requested, and announce the date, time, and place of those hearings, as well as how to obtain reasonable accommodation, in the *Federal Register* at least 15 days before the first hearing. For the immediate future, we will provide these public hearings using webinars that will be announced on the Service's website, in addition to the *Federal Register*. The use of these virtual public hearings is consistent with our regulation at 50 CFR 424.16(c)(3).

Peer Review

In accordance with our joint policy on peer review published in the *Federal Register* on July 1, 1994 (59 FR 34270) and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we have sought the expert opinions of six appropriate and independent specialists regarding the Species Status Assessment (SSA) Report for the Morro Shoulderband Snail and Chorro Shoulderband Snail, which informed the determination in this proposed rule. The purpose of peer review is to ensure that our determinations and designations are based on scientifically sound data, assumptions, and analyses. The six peer reviewers we selected have expertise in shoulderband snail biology, taxonomy, habitat, and threats (factors

negatively affecting the species), and their comments helped inform our determination. We received responses from all six peer reviewers, which we considered in our SSA report and this proposed rule. These comments will be available along with other public comments in the docket for this proposed rule. Additionally, we will consider all comments and information we receive during the comment period on this proposed rule as we prepare the final determination. Accordingly, the final decision may differ from this proposal.

Previous Federal Actions

In 1994, we listed *Helminthoglypta walkeriana* (the banded dune snail) as endangered (59 FR 64613). This taxon contained two entities: *H. walkeriana* (what we now consider the Morro shoulderband snail) and *H. walkeriana morroensis* (what we now consider the Chorro shoulderband snail). At the time of listing, we thought the subspecific entity *morroensis* was extinct and that there may have been as few as several hundred individuals of *Helminthoglypta walkeriana* remaining (59 FR 64615); consequently, we did not consider the *morroensis* subspecies to be part of the listed entity.

In 1997, the subspecific entity *morroensis* was rediscovered at North Point Natural Area near the northern limit of Morro Bay (Roth and Tupen 2004, p. 3). In subsequent years it was found in other areas as well. In 1998, we completed a Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County (Service 1998, entire) and in 2001 designated critical habitat (66 FR 9233). Both the recovery plan and critical habitat addressed only *Helminthoglypta walkeriana* and not the subspecific entity *morroensis*, as explained above.

In 2004, a taxonomic analysis was completed that elevated these subspecific taxa to full species: *Helminthoglypta walkeriana* and *H. morroensis* (Roth and Tupen 2004, entire). After 2004, *H. walkeriana* and *H. morroensis* were associated with the common names Morro shoulderband snail and Chorro shoulderband snail, respectively. Also in 2004, in an attempt to provide clarity on what was the listed entity, the Ventura Fish and Wildlife Office issued a “Dear Stakeholders and Interested Parties” letter stating we would no longer be regulating the Chorro shoulderband snail (Service 2004, entire).

However, in 2006 the Service completed a 5-Year Review for both the Morro and Chorro shoulderband snail and recommended downlisting Morro shoulderband snail from endangered to threatened and delisting of Chorro shoulderband snail (Service 2006, entire), even though the Chorro shoulderband snail had previously not been treated as part of the listed entity.

Neither entity, *Helminthoglypta walkeriana morroensis* or the newly recognized *Helminthoglypta morroensis*, was ever formally added to the endangered species list. Because of its confusing history, however, we have determined that it is most appropriate to now complete a listing assessment to determine whether or not the Chorro shoulderband snail meets the definition of threatened or endangered. Using the results of our evaluation in the SSA Report, we reaffirm the finding in our 5-year review that the information on the threats to the Chorro shoulderband snail does not support the species being listed as threatened or endangered under the Act. Since *Helminthoglypta morroensis* is not currently included on the Federal List of Endangered and Threatened Wildlife, no revision to the list is needed to implement this determination. Our full determination and threats analysis regarding the status of the Chorro shoulderband snail

is available in a Species Assessment form at Docket No. FWS–R8–ES–2019–0025 on the Internet at <http://www.regulations.gov>.

In this proposed rule, we address the status of the Morro shoulderband snail. This proposed rule also constitutes our 5-year status review for the Morro shoulderband snail. Additionally, as a result of the new data and supportive references noted above, we propose to recognize the change in the common name of the listed entity *H. walkeriana* as the Morro shoulderband snail. We have included this proposed change in nomenclature in the Proposed Regulation Promulgation section of this proposed rule, and we expect to adopt it when we publish a final determination for this action.

Background

It is our intent to discuss only those topics directly related to the reclassification of Morro shoulderband snail from an endangered species to a threatened species in this proposed rule. In this section, we summarize the conclusions of the SSA Report, including the species description, ecology, habitat, and resource needs. We also discuss recovery plan implementation. In our SSA Report, we define viability as the ability of the species to sustain populations in the wild over time and provide a thorough account of the species' overall condition currently and into the future. The full SSA Report is available at Docket No. FWS–R8–ES–2019–0025 on the Internet at <http://www.regulations.gov>.

Species Description

The Morro shoulderband snail belongs to the land snail genus, *Helminthoglypta* (Ancey 1887), which contains three subgenera comprising more than 100 species and subspecies. Morro shoulderband snail shells are umbilicate (having a depression at the center), globose (spherical), reddish brown to chestnut in color, thin, and slightly

translucent (Roth 1985, p. 5). The shell has five to six whorls and a single, narrow (2 to 2.5 millimeters (mm) [0.08 to 0.1 inches (in.)]), dark spiral band on the “shoulder” with thin light-yellowish margins above and below. Sculptural features of the shell include incised spiral grooves, spiral and transverse striae (grooves) that give the surface a checkerboard-like look, and papillae (small, round protrusions) at the intersections of some of the striae (Walgren 2003, p. 93). Adult shell dimensions range from 18 to 29 mm (0.7 to 1.1 in.) in diameter and from 14 to 25 mm (0.6 to 1.0 in.) in height (Roth 1985, p. 5).

Species Ecology, Habitat, and Resource Needs

In general, we know very little about the specific life history of Morro shoulderband snails. Using information compiled for other *Helminthoglypta* species (van der Laan 1975a, entire; 1975b, entire; 1980, entire), we infer information and apply it to the species, where appropriate. Like many species of *Helminthoglypta* that occur in Mediterranean climate regions of California, the Morro shoulderband snail has adapted to changing environmental conditions by having a two-part life cycle. While feeding, reproduction, and most individual growth occur during the rainy season (Roth 1985, p. 13), individuals spend the majority of the year in aestivation (prolonged dormancy) to survive the drier seasons (Belt 2018, pers. comm.). Refugia used for the aestivation phase of the life cycle for the Morro shoulderband snail appear to be opportunistic in nature. They can include native and nonnative plant species, including dense clumps of native and nonnative grasses; young patches of ice plant (*Carpobrotus* spp.); cactus (*Opuntia* spp.); and anthropogenic features and debris (e.g., stockpiled construction materials,

wood, cement, plastic) (Roth and Tupen 2004, p. 17; SWCA 2013–2017, entire; Dugan 2018, pers. comm.).

For *Helminthoglypta* species living in California, most activity occurs during the rainy season (Roth 1985, p. 13), and this is the case for Morro shoulderband snail. In coastal San Luis Obispo County, the period of greatest activity generally extends from October through April but can vary each year depending on the frequency and duration of seasonal rainfall and heavy fog/dew. During this period, individuals may be particularly active during the evening, night, and early morning hours when humidity is higher. Individuals can also be active during overcast and rainy days (van der Laan 1980, pp. 49, 52; USDA 1999, p. 3; Tupen 2018, pers. comm.). The Morro shoulderband snail likely emerges from aestivation during and following periods of rainfall in search of food resources and for mating and egg-laying activities.

Species of *Helminthoglypta*, like other terrestrial snails, become inactive during prolonged dry periods and enter a state of aestivation where individuals produce an epiphragm (a seal of dried mucus) across the shell aperture to greatly reduce water/weight loss (van der Laan 1975b, p. 361). They frequently aestivate attached to the lower outer branches of shrubs (van der Laan 1975b, p. 365; Roth 1985, p. 13). This attachment to a substrate may provide additional protection from desiccation by forming a more complete seal of the aperture (van der Laan 1975b, p. 365). There is a possible decreased vulnerability to predation during dormancy when the attachment point is 20–30 centimeters (7.9–11.8 in.) above the ground surface (van der Laan 1975b, p. 365). Smaller snails tended to experience higher mortality rates during aestivation, possibly due to their thinner shells and higher surface-to-volume ratios (van der Laan 1975b, p. 364).

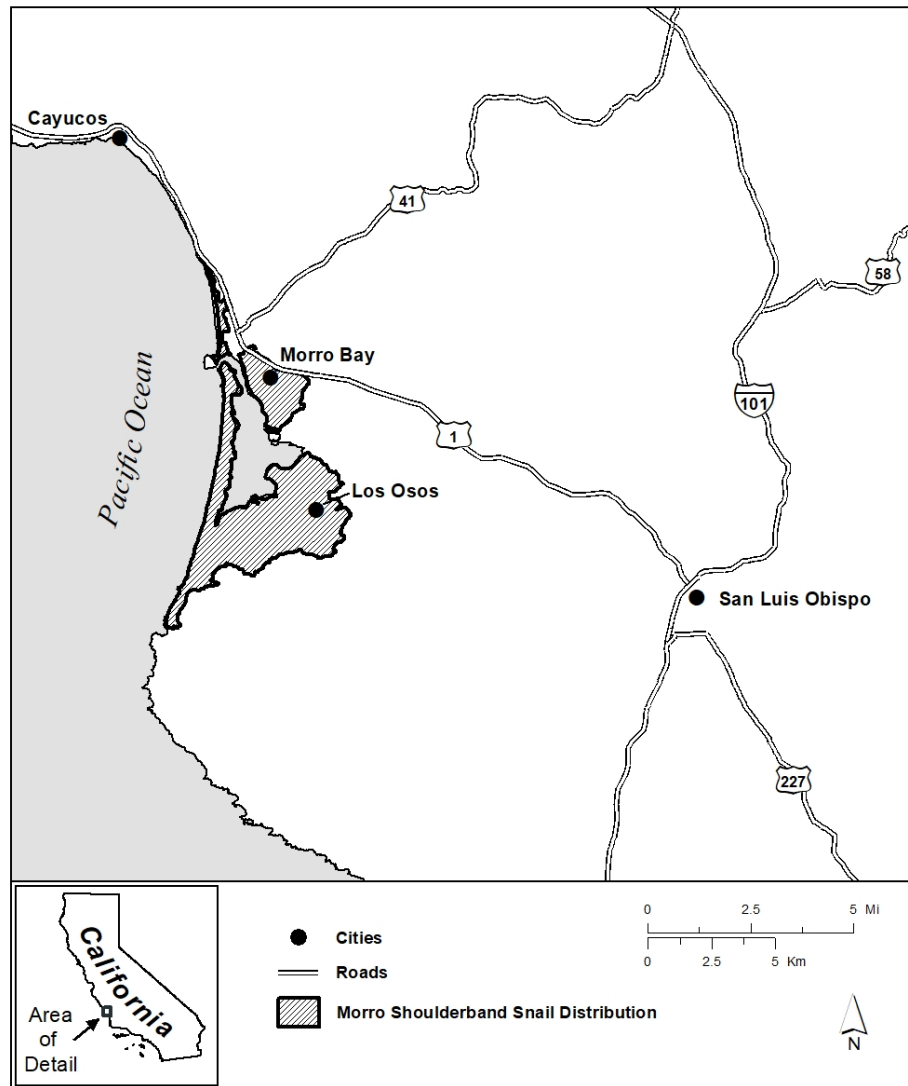
Individuals come out of aestivation after rain events that thoroughly wet the environment and may regain as much as 50 percent of their body weight back within 24 hours (van der Laan 1975b, p. 364).

Like other terrestrial snails, we expect the Morro shoulderband snail to have a patchy distribution coincident with the presence of suitable refugia and food sources.

Species Distribution and Abundance

Initially, Hill (1974, p. 6) and others projected a very limited distribution for *Helminthoglypta walkeriana* (as the coastal form of the banded dune snail). Its range was thought to extend only a short distance inland along the southeastern shore of Morro Bay to Shark Inlet, southward to near Islay Creek, and northward on the Morro Bay sand spit at the western edge of the community of Los Osos. In the listing rule, the Service expanded the range to include the coastal dune and coastal sage scrub communities underlain by sandy soils near Morro Bay (i.e., Los Osos) (59 FR 64613, December 15, 1994). Based on known species occurrences and soil associations, we used the presence of Baywood Fine Sand soils and small areas of Dune Land soils to determine distribution. We currently estimate the distribution for the Morro shoulderband snail to be approximately 2,638 hectares (ha) (6,520 acres (ac)) located in and around the community of Los Osos/Baywood Park and City of Morro Bay (Figure 1). At the time of listing, we estimated that there may have been as few as several hundred individuals of *H. walkeriana* (currently, Morro shoulderband snail) extant. Based on the most recent surveys, thousands of Morro shoulderband snails currently exist in this area (SWCA 2018, p. 7).

Figure 1. Distribution of the Morro shoulderband snail (*Helminthoglypta walkeriana*).



Using known species occurrence and estimated abundance along with the presence of suitable soil types, we identified six geographic units (hereafter, Population Areas) for the purpose of discussion in our SSA Report. These include North Morro Bay, Sand Spit, Morro Bay, East Los Osos, Downtown Los Osos, and South Los Osos. For a map and detailed description of these Population Areas, please reference the SSA Report (Service 2019, pp. 24–29). The level of survey effort throughout each of the six Population Areas comprising the distribution of the Morro shoulderband snail is limited

and variable. For this reason, we are not able to make comparable estimates for species abundance. The Downtown and South Los Osos Population Areas have been subject to a greater level of survey effort associated with required monitoring for the installation of infrastructure to connect the community of Los Osos with its wastewater system. Between 2012 and 2017, more than 2,200 individuals were found in these two Population Areas, with over 80 percent occurring in the Downtown Los Osos area (SWCA 2018, p. 5).

Portions of the North Morro Bay, Sand Spit, Morro Bay, East Los Osos, and South Los Osos Population Areas are within California Department of Parks and Recreation (hereafter, State Parks) ownership, but comprehensive surveys or monitoring have not been conducted. From discussions with State Parks biologists, we know Morro shoulderband snails are present on State Park lands in Montaña de Oro and Morro Bay State Parks and Morro Strand State Beach, portions of which are found within several of the Population Areas. Data on the level of species occupation and condition of individuals is generally lacking (Walgren and Andreano 2018, pers. comm.). There have been no comprehensive surveys for the Morro shoulderband snail conducted on the California Department of Fish and Wildlife's (CDFW) Morro Dunes Ecological Reserve (MDER); however, based on species observations and presence of suitable habitat, CDFW assumes the reserve contains a robust population of the species (CDFW in litt. 2018). While we know the species is present on MDER (Service files; Stafford 2018, pers. comm.), there is no evidence that the population is robust or that large numbers of individuals are present. Survey data gathered between 2012 and 2017 in contiguous

habitat of similar quality and species composition indicate greater Morro shoulderband snail numbers in disturbed habitats than in native habitats (SWCA 2018, p. 5).

Recovery and Recovery Plan Implementation

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. Under section 4(f)(1)(B)(ii), recovery plans must, to the maximum extent practicable, include: “Objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of [section 4 of the Act], that the species be removed from the list.” However, revisions to the list (adding, removing, or reclassifying a species) must reflect determinations made in accordance with sections 4(a)(1) and 4(b) of the Act. Section 4(a)(1) requires that the Secretary determine whether a species is an endangered species or a threatened species (or not) because of one or more of five threat factors. Section 4(b) of the Act requires that we make our determination “solely on the basis of the best scientific and commercial data available.” Therefore, recovery criteria should help indicate when we would anticipate that an analysis of the species’ status under section 4(a)(1) would result in a determination that the species is no longer an endangered or threatened species.

While recovery plans provide important guidance to the Service, States, and other partners regarding methods to minimize threats to listed species and measurable objectives against which to measure progress towards recovery, they are not regulatory documents and cannot substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to reclassify a species’ status or

remove it from the Federal List of Endangered and Threatened Wildlife (50 CFR 17.11) is ultimately based on an analysis of the best scientific and commercial data available at the time. We use these data to determine whether a species is no longer an endangered species or a threatened species, regardless of whether that information differs from the recovery plan. Below, we summarize recovery plan goals for the Morro shoulderband snail and discuss progress made toward meeting recovery plan objectives in terms of how they inform our analyses of the species' status and the stressors affecting them.

In 1998, we completed the *Recovery Plan for the Morro Shoulderband Snail and Four Plants from Western San Luis Obispo County, California*, which included recovery goals and objectives for Morro shoulderband snail (Recovery Plan; Service 1998, pp. 40–41). The Recovery Plan identified criteria for downlisting Morro shoulderband snail from an endangered to a threatened species and criteria for its delisting. The Recovery Plan identifies four Conservation Planning Areas (CPAs). These CPAs were designed to incorporate areas where distribution of the Morro shoulderband snail and three other plant species covered in the plan overlap; thus, they are more limited than the Population Areas for the Morro shoulderband snail defined in the SSA.

Our summary analysis of downlisting and delisting criteria follows:

The Recovery Plan states that downlisting from endangered to threatened can be considered when sufficient populations and suitable occupied habitats from all CPAs are secured and protected (Service 1998, p. 39). These areas should be intact and relatively unfragmented by urban development. Snail populations must be large enough to minimize the short-term (next 50 years) risk of extinction on any of the four CPAs identified in the recovery plan, based on results of tasks 3.2.1.1, 3.2.1.2, and 3.2.1.3 (see

below) and on at least preliminary results from task 4.1. The identification and survey of potential habitat within the snail's historic range to see if undiscovered populations exist is necessary to consider downlisting.

All of CPA 1 (Morro Spit) and portions of CPAs 2, 3, and 4 (West Pecho, South Los Osos, and Northeast Los Osos) are largely secure under various ownerships and management (Service 2019, pp. 72–74). All have conservation easements, deed restrictions, or are managed by a conservation association for conservation purposes. Landowners and managers include the County, State Parks, CDFW, the Land Conservancy of San Luis Obispo County, Morro Coast Audubon Society, and the Small Wilderness Area Program (SWAP). Approximately 202 ha (500 ac) have been added to conserved lands since time of listing. This includes 56 ha (138 ac) of parcels purchased and transferred to the California Department of Parks and Recreation (CDPR) or CDFW managed for conservation purposes and 141 ha (348 ac) with conservation easement or deed restriction managed for conservation purposes. Overall, 85 percent (approximately 1,457 ha (3,600 ac)) of CPAs are now conserved. However, a lack of funding precludes adequate threats management on most of these lands (Service 2019, p. 53).

Recovery Task 3.2.1.1 is to determine if brown garden snail (*Cornu aspersum* [formerly *Helix aspersa*]) is a competitive threat to the Morro shoulderband snail. Since the time of listing, we found that the Morro shoulderband snails feed primarily on dead plant materials and the brown garden snail consumes live plant materials, so competition between these species is likely minimal (Service 2019, p. 75). Task 3.2.1.2 involves the study of habitat use and life-history needs of the Morro shoulderband snail. Monitoring and habitat restoration activities conducted in association with the construction of a sewer

system in the community of Los Osos have generated substantial new information on the diversity of habitats in which the species can occur and numbers of individuals present. We also have new information based upon anecdotal observations and surveys conducted in association with proposed development in the Los Osos area (Service 2019, pp. 28–30). Task 3.2.1.3 is to identify Morro shoulderband snail parasites and determine if parasitism rates are threatening populations. At the time of listing, parasitism was identified as a threat to the species, based on observations of vacant sarcophagid fly puparia within empty subadult shells (59 FR 64613, 64619; December 15, 1994). Since the time of listing, there has been an increase in snail observations, but there has not been a corresponding increase in sarcophagid fly pupae infestations of snails. There are a few species in this fly family that have been documented to eat live material (Walgren 2003, pp. 108-114; USFWS 2006, p. 7). While there have been no specific studies on the potential threats to the snail from these sarcophagid flies, the majority of flies in this family do not eat live organisms; thus, we conclude that the flies do not pose a threat to the species (Service 2006, p. 13). Therefore, the best available current evidence does not indicate that parasitism is a threat to the species.

Finally, Task 4.1 is to monitor populations to document population dynamics and cycles to ascertain trends. There has been no systematic monitoring conducted to provide data that would allow for trend analysis. However, based on the most recent surveys, thousands of Morro shoulderband snails were detected across its range, as compared to hundreds known at the time of listing (Service 2018, pp. 28–30; SWCA 2018, p. 5; Walgren and Andreano 2018, pers. comm.). Therefore, though we do not have specific trend data, we conclude that we have still met the intent of this criterion.

Delisting can be considered when habitats from all CPAs (and any newly located populations) are successfully managed to maintain the desired community structure and are secured from threats of development, invasion of nonnative plants, structural changes due to senescence of dune vegetation, recreational use, pesticides (including slug and snail baits), parasites, and competition or predation from nonnative snail species. The outcomes of recovery tasks must result in a low medium-to-long-term risk of extinction from any of the four CPAs (Service 1998, p. 40).

Our analyses in the SSA Report indicate that the current viability of Morro shoulderband snail has improved to some degree since the time of listing due to concerted conservation efforts, predominantly in the form of land acquisition, and substantially more individuals than previously thought. Based on our future scenario analyses, the species is still at risk in the future due to the potential for development and because the level of continued conservation efforts and habitat management is uncertain. Currently and into the future, habitat loss due to development and habitat degradation, predominantly from invasive plant species, remain threats to the Morro shoulderband snail.

To improve habitat for the species, the Morro Coast Audubon Society has a dedicated volunteer work force to target removal of invasive nonnative plant species who remove *Ehrharta calycina* (perennial veldt grass) and *Eucalyptus globulus* (blue gum) seedlings at their Sweet Springs Preserve (outside of any CPA) under the direction of a Recovery Action Plan. The Los Osos/Morro Bay Chapter of SWAP does the same for the Elfin Forest Reserve in CPA 4. State Parks staff annually prioritize areas for invasive species treatment on a case-by-case basis. When funding is available, they implement

actions to control invasive species in Montaña de Oro State Park, Morro Strand State Beach, Morro Bay State Park, and Los Osos Oaks Preserve (CPAs 1 and 2, portions of 3 and 4, and Area A). Identified invasive species prioritized for removal include *E. calycina*, *Conicosia pugioniformis* (narrowleaf iceplant), *Emex spinosa* (devil's thorn), *Cortaderia* species, and *Eucalyptus* species because they are the most invasive and conspicuous in the landscape.

Lack of funding precludes most State of California resource agencies (e.g., State Parks and CDFW) from implementing invasive species control programs on lands where these species are present. State Parks staff have conducted limited prescribed burns and proposed additional prescribed burns to improve the quality of coastal dune scrub and central maritime chaparral and their constituent species within their park units. Fires typically kill snails, but if properly applied in small areas to create a mosaic of varying stand ages for coastal dune scrub and central maritime chaparral, such burns could improve the quality of these habitats for Morro shoulderband snail in the long term. Previous threats to habitat resulting from illegal off-road vehicle activities are largely controlled; however, illegal trail development and use by hikers, mountain bikers, and equestrians negatively affects habitat for Morro shoulderband snails by increasing erosion, reducing native plant cover, and facilitating further invasion by nonnative plant species (Service 2018, pp. 75–76).

Based on the Recovery Plan and our SSA Report, we conclude that the status of the Morro shoulderband snail has improved throughout its range from the significant preservation or conservation of habitat once at risk of development, along with land use decisions and management activities undertaken by the County of San Luis Obispo

(County) and landowners since the time of listing. The SSA Report contains an accounting of known conservation and management efforts (Service 2019, pp. 23–24). Overall, our analysis indicates that the intent of the downlisting criteria for the Morro shoulderband snail has been met; however, delisting criteria have not yet been achieved.

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species is an “endangered species” or a “threatened species.” The Act defines an endangered species as a species that is “in danger of extinction throughout all or a significant portion of its range,” and a threatened species as a species that is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” The Act requires that we determine whether any species is an “endangered species” or a “threatened species” because of any 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) The inadequacy of existing regulatory mechanisms; or
- (E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species’ continued existence. In evaluating these

actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects. We consider these same five factors in reclassifying a species from endangered to threatened (50 CFR 424.11(c)-(e)).

We use the term “threat” to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term “threat” includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term “threat” may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an “endangered species” or a “threatened species.” In determining whether a species meets either definition, we must evaluate all identified threats by considering the species’ expected response and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species—such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an “endangered species” or a “threatened species” only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future.

The Act does not define the term “foreseeable future,” which appears in the statutory definition of “threatened species.” Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term foreseeable future extends only so far into the future as we can reasonably determine that both the future threats and the species’ responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. “Reliable” does not mean “certain”; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions.

It is not always possible or necessary to define foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species’ likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species’ biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.

Analytical Framework

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent our decision on whether the species should be reclassified as a threatened species under the Act. It does, however, provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing

regulations and policies. The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket **FWS–R8–ES–2019–0025** on <http://www.regulations.gov>.

To assess Morro shoulderband snail viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency supports the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years); redundancy supports the ability of the species to withstand catastrophic events (for example, droughts, large pollution events); and representation supports the ability of the species to adapt over time to long-term changes in the environment (for example, climate changes). In general, the more resilient and redundant a species is and the more representation it has, the more likely it is to sustain populations over time, even under changing environmental conditions. Using these principles, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated individual species' life-history needs. The next stage involved an assessment of the historical and current condition of the species' demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions about the species' responses to positive and negative environmental and anthropogenic influences. Throughout all of these stages, we used the best available information to characterize

viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision.

Summary of Biological Status and Threats

In this section, we review the biological condition of the species and its resources, and the threats that influence the species' current and future condition, in order to assess the species' overall viability and the risks to that viability.

We reviewed the potential threats that could be affecting Morro shoulderband snails now and in the future. In this proposed rule, we discuss in detail only those factors that could meaningfully affect the status of the species. At the time of listing, we identified urban development and other anthropogenic activities such as recreation, grazing, and utility construction as threats to the Morro shoulderband snail (59 FR 64613, December 15, 1994). In the SSA Report (Service 2019, pp. 21–64), we reviewed four potential threats that could be affecting the Morro shoulderband snail in the current conditions section (development, agriculture, vegetation management, and predation), and those threats and two others (wildfire, invasive species) in the future conditions section. The primary risk factors affecting the Morro shoulderband snail are the present and threatened modification or destruction of its habitat from development, wildfire, and invasive plant species (Factor A), as well as effects to its life cycle from changing climate conditions (Factor E). We also considered the effect of existing regulatory mechanisms (Factor D) on the magnitude of threats. Additional threats affecting the species' habitat include agriculture (Factor A) and vegetation management (Factor A), and threats affecting the species include predation (Factor C); however, we have determined that these threats have little to no impact on species viability. We also analyzed the threat of

collection (Factor B). At the time of listing, we stated that the taxonomic distinctiveness of the Morro shoulderband snail made it vulnerable to recreational or scientific collectors. Since the time of listing, however, we are not aware of specific collection activities for recreational or scientific purposes.

Development

At the time of listing, development was identified as one of the main threats impacting the Morro shoulderband snail. Human development consists of converting the landscape into residential, commercial, industrial, and recreational features, with associated infrastructure such as roads. Converting the landscape into development not only removes individual Morro shoulderband snails but also removes their habitat, thereby reducing the space available for the species to inhabit and functionally lowering carrying capacity. In addition, development results in indirect effects by fragmenting the habitat and creating edge effects, such as increased vulnerability to desiccation, fire, and predation. The effects of development on the Morro shoulderband snail are predicated upon several factors (e.g., how the City and County of San Luis Obispo revise and implement their respective general plans, the economy, water availability).

However, as detailed in the SSA, conservation actions have been undertaken since the time of listing to reduce the threat of development (Service 2018, pp. 24–25). Approximately 202 ha (500 ac) of Morro shoulderband snail habitat have been conserved since the time of listing. This includes 56 ha (138 ac) of parcels purchased and transferred to the CDPR or CDFW and 141 ha (348 ac) with conservation easement or deed restriction; all of these areas are managed for conservation purposes. Overall, 85 percent (approximately 1,457 ha (3,600 ac)) of CPAs are now protected from development.

Although most lands within its distribution outside of CPAs are not under formal or legal protection as open space or conservation easements, many are protected as part of a State Park, State of California ecological reserve, or parcels set aside specifically to conserve and enhance natural resource values. For example, the County of San Luis Obispo's Broderson and Midtown parcels are both protected through deed restrictions that preclude development other than that which would enhance habitat that supports Morro shoulderband snails. With increased conserved lands the threat of development has been reduced since the time of listing, but some potential impacts remain that could result in the loss of populations and thus the loss of representation and redundancy across the species' range. For example, large portions of the East Los Osos and Downtown Los Osos Population Areas consist predominantly of public and private land parcels zoned for development. Apart from the protections afforded by the Act, the existing regulatory mechanisms do not address the impacts of development on the Morro shoulderband snail.

Invasive Species

Invasion of native habitat by nonnative plant species can reduce suitability for native constituent species that evolved in these habitats. Areas dominated by a single invasive plant species tend to support lower levels of animal diversity due to a reduction in heterogeneity as compared to the original native plant community (Steidl and Litt 2009, p. 57). The presence of nonnative plant species can also alter the abundance of native plants that serve as an important food source for herbivores, such as snails.

Invasive plant species can increase vegetative cover and reduce space between native plant species in native communities. Invasive plant species can change fuel properties in native habitats, which can then affect fire behavior and alter fire regime characteristics

such as frequency, severity, extent, type, and seasonality (Brooks et al. 2004, entire). In coastal dune scrub and maritime chaparral, native communities that typically support a sparse understory, invasive grasses, such as perennial veldt grass, can serve as ladder fuel to carry fire into these communities. Fires can also create an opportunity for invasive plant species to expand their local distributions and dominance (Brooks and Lusk 2008, p. 9).

While once thought to be largely restricted to native coastal scrub communities underlain by sandy soils, Morro shoulderband snails are known to persist, at least in the short term, in disturbed areas and those dominated by nonnative species (e.g., perennial veldt grass, ice plant) (SWCA 2018, p. 5). Biologists and land planners typically classify these areas as ruderal or “disturbed” and, as such, discount them in terms of their conservation value. Ruderal, disturbed, and nonnative grassland habitats are, therefore, subject to mowing, herbicide use, development, and other uses that put individual Morro shoulderband snails in these areas at a greater risk of injury or mortality than those found in native habitat.

Currently, three of the six Population Areas that support the Morro shoulderband snail are in moderate- or low-quality habitat, with impacts from nonnative species (Service 2019, pp. 37–38). Habitat in these areas is either somewhat degraded (one Population Area) (9.5 percent of species distribution) or highly degraded and fragmented (two Population Areas) (38.3 percent of species distribution).

Both the Morro Coast Audubon Society and SWAP conduct activities to improve habitat quality for the Morro shoulderband snail and other coastal dune scrub species on lands conserved and protected under their ownership and/or management (Sweet Springs

Nature Preserve and Elfin Forest, respectively). These actions focus primarily on the removal of exotic plant species (perennial veldt grass, iceplant), restoration of coastal dune scrub, and erosion control. The CDPR also conducts similar activities on its lands (i.e., Montaña de Oro and Morro Bay State Parks and Morro Strand State Beach). The County of San Luis Obispo owns two large parcels in Los Osos, Broderson and Mid-Town, that support coastal dune scrub and, to a lesser extent, central maritime chaparral. Management actions on both parcels focus on the restoration and enhancement of habitat for the Morro shoulderband snail (KMA 2017, entire; County of San Luis Obispo 2017, entire). The Land Conservancy of San Luis Obispo County recently purchased approximately 5.7 ha (14 ac) adjacent to the Morro Coast Audubon Society Sweet Springs Preserve. They plan to enhance habitat quality for coastal dune scrub species, including Morro shoulderband snail, before transferring these lands to Morro Coast Audubon Society ownership and management (Theobald 2017, pers. comm.). Overall, while these conservation measures have decreased the overall impact of invasive plant species, degradation of native habitats from those species is ongoing. Apart from the protections afforded by the Act, the existing regulatory mechanisms do not address the impact of invasive species.

Wildfire

Morro shoulderband snails evolved in a fire-adapted landscape dominated by coastal dune scrub and maritime chaparral. Exposure to fire can result in individual mortality; however, an evolutionary strategy has enabled the species to persist in these habitats. Theories related to the nature of fire history in California shrublands are complicated and varied (Goforth and Minnich 2007, p. 779). In the range of the Morro

shoulderband snail, the “natural” condition was one of frequent, small fires that fragmented the landscape into a fine-grained mosaic of age classes that precluded large, catastrophic fires (Minnich and Chou 1997, p. 244). In this type of situation, areas of unburned coastal dune scrub and central maritime chaparral would serve as refugia for individual snails that could then recolonize areas as the fire-adapted plant communities reestablished.

We consider an increase in wildfire frequency and/or intensity associated with continued climate change to be a plausible in the future within the range of the Morro shoulderband snail (Service 2019, entire). A landscape-level or more severe fire event would constitute a threat to the species due to its very limited distribution. This type of fire could leave little in the way of habitat to serve as native refugia and result in a substantial amount of individual mortality, increasing the likelihood of local population extirpation. Absent individuals in nearby habitat to recolonize burned areas as habitat reestablishes, large-scale fire could result in a reduction in the overall distribution of the species, and thus loss of redundancy and representation. The existing regulatory mechanisms do not address the impact of wildfire on the Morro shoulderband snail or its habitat.

Climate Change

Climate change is likely to affect many terrestrial gastropod populations in California, including the Morro shoulderband snail. Species with small geographic ranges are particularly vulnerable to extinction due to the effects of climate change (Allan et al. 2005, p. 284). In the range of the Morro shoulderband snail, climate change may result in both droughts and localized flood events from heavy rainfall. In the future, extreme storm

events may increase in severity beyond historic levels of intensity with potential to increase flood risks in California (Dettinger 2011, pp. 521–522). Future estimates of changes in temperature and precipitation patterns in California by the 2060s based on downscaled climate models show that the historically maximum July temperatures are likely to increase and heat waves may span longer durations (Pierce *et al.* 2013, entire).

The increased frequency of protracted drought events predicted in California is likely to result in higher mortality during prolonged periods of seasonal aestivation, particularly among smaller individuals in the population (van der Laan 1975b, p. 364). Higher levels of egg mortality from desiccation are expected. Warmer temperatures and greatly reduced wet season precipitation during prolonged multiyear drought events also increase stress on vegetation (Coates et al. 2015, p. 14277) and may limit time for feeding and breeding in the Morro shoulderband snail. Coastal sage scrub communities had the highest seasonal variability in terms of the relative amount of ground covered by green vegetation during the drought years of 2013–2014 (Coates et al. 2015, p. 14283). Coastal sage scrub plant species also had the highest land surface temperature values of the communities analyzed, likely resulting from lower vegetation cover, lower evapotranspiration, and south-facing slopes typical of coastal sage scrub communities (Coates et al. 2015, p. 14284). These effects of prolonged drought reduce the value and quality of sheltering habitat as well as food availability within the primary plant community associated with the Morro shoulderband snail. Combined with impacts from wildfire, invasive species, and development, the negative effects of climate change on growth and reproduction are likely to result in decreased population abundance and increased vulnerability to local extirpation into the future.

Summary of Threats

We examined the effects of threats affecting the Morro shoulderband snail and its habitat; we now summarize these threats and their cumulative effects on the species. Currently, the species and its habitat are being impacted by development, invasive nonnative plants, wildfire, and effects associated with climate change. Along with a decrease in habitat quality due to increased temperatures and increased frequency of droughts, the effects of climate change may also exacerbate low population size and fragmented habitats, resulting in increased risk of extirpation. The effects of climate change will also combine with the effects of development, wildfire, and invasive species to exacerbate habitat loss and mortality of individuals. However, the magnitude of threats has decreased since the time of listing, and conservation actions have addressed impacts from development and nonnative plants. Still, the species' low abundance and fragmented habitat mean it is vulnerable to threats into the future, including potential extirpation of Population Areas by wildfire.

Current and Potential Future Condition

We assessed the viability of the Morro shoulderband snail by evaluating its ability to maintain a sufficient number and distribution of healthy populations in order to maintain resiliency, redundancy, and representation. We analyzed threats to the species and ongoing conservation actions by incorporating the effects of development, invasive species, wildfire, and changing climate conditions into our analyses of resiliency, representation, and redundancy.

For the Morro shoulderband snail to maintain viability, its populations, or some portion thereof, need to be resilient to stochastic events. Resiliency is measured by the

size and growth rate of each population, which influence the likelihood that the populations comprising a species are able to withstand or bounce back from environmental or demographic stochastic events. We evaluated variables influencing the ability of the Morro shoulderband snail to withstand stochastic events by Population Area, including abundance (as available); distribution of individuals; habitat quality and configuration; and the likelihood that suitable habitat would persist into the future. To determine habitat quality and configuration in each Population Area, we evaluated its context in the overall landscape relative to fragmentation and whether one or more of those primary constituent elements identified for critical habitat designated in 2001 (66 FR 9233, February 7, 2001) are present. Primary constituent elements for this species include the following physical or biological features: sand or sandy soil needed for reproduction; a slope not greater than 10 percent to facilitate movement of individuals; and native coastal dune scrub vegetation. To determine the likelihood that suitable habitat will persist into the future, we evaluated the proportion of protected habitat in each Population Area. We then created an overall current condition for each Population Area based on these three variables.

Based on overall current condition, we then forecasted the condition of these variables into the future for 30 years under three different scenarios. The three future scenarios attempt to encompass the range of plausible possibilities for each Population Area over the next 30 years. To forecast climate change impacts, we relied on scientific papers (Dettinger 2011, entire; Pierce et al. 2013, entire) that incorporated multi-model ensembles and downscaled regional climate projections that examine key characteristics

relating to the Morro shoulderband snail, such as summer temperatures and seasonal changes in precipitation.

First, we forecasted the condition of each Population Area under the status quo, with continued climate change effects, all existing threats continuing at their current level, and no additional conservation efforts for the species (Status Quo). Second, we forecasted the condition of each Population Area under implementation of the LOHCP, a draft regional Habitat Conservation Plan that proposes the Morro shoulderband snail as a covered species, against a backdrop of continued climate change effects (Limited Conservation). In this scenario, the LOHCP consolidates the threat of development to one Population Area, while other existing threats continue at their current level. Finally, we forecasted implementation of the LOHCP, active management for the Morro shoulderband snail within existing protected but generally unmanaged lands, and additional habitat protection through acquisition and subsequent management (Major Conservation), again against a backdrop of continued climate change. This scenario includes decreased threats due to development and invasive plant species, as well as conservation benefits from habitat restoration.

Table 1. Summary of Morro Shoulderband Snail Resiliency: Current and Future Conditions by Population Area.

Population Area	Current Condition	Future Scenario: Status Quo	Future Scenario: Limited Conservation	Future Scenario: Major Conservation
North Morro Bay	Moderate	Moderate	Moderate	High
Sand Spit	High	Moderate	Moderate	High
Morro Bay	Low	Low	Low	Low
East Los Osos	Moderate	Low	Low	Moderate

Downtown Los Osos	Moderate	Low	Low	Low
South Los Osos	High	Moderate	High	High

Maintaining representation of healthy populations across the diversity of habitat types or ecological gradients within the distribution of Morro shoulderband snail will likely conserve the relevant genetic diversity and adaptive capacity associated with individual persistence across these habitat types. Currently, there is species representation in all of six Population Areas; however, changes under future scenarios could put individuals in some Population Areas at greater risk of extirpation, resulting in a potential loss of representation and leaving the species extant only in the periphery of its range.

The Morro shoulderband snail needs multiple resilient Population Areas distributed throughout its extremely limited distribution to provide for redundancy. Historically, based on the mapping of Baywood Fine Sand soils, it is likely that habitat was once well-distributed throughout the species' range. Development now primarily separates these Population Areas. Low resiliency and disconnected Population Areas, currently and in the future, suggest that stochastic events could increase species vulnerability to loss of redundancy and could increase the risk of loss of Population Areas, which would then diminish species redundancy. An overall decrease in the condition of Population Areas in two of the three future scenarios suggests a potential compromised redundancy and, therefore, risk of extirpation from catastrophic events in the future, unless major conservation actions are undertaken. Prolonged and/or more intensive drought, increased wildfire frequency and/or intensity, and localized flooding are those events that could affect the Morro shoulderband snail at the catastrophic scale.

The resiliency of Morro shoulderband snail Population Areas within its distribution has changed over time due to loss, degradation, and/or fragmentation of native habitat. Currently, we consider two Population Areas (Sand Spit and South Los Osos) to have a high level of resiliency, three Population Areas (North Morro Bay, East Los Osos, Downtown Los Osos) to have moderate resiliency, and one Population Area (Morro Bay) to have a low resiliency. It is not likely that loss of this Population Area would affect species representation across the remaining portion of range as current numbers of individuals in this Population Area are very low, and it is generally isolated from the other five Population Areas. Regarding redundancy, we consider those Population Areas with low or moderate resiliencies to be at a greater risk of local extirpation, which has the potential to decrease overall species redundancy.

Our analyses indicate that the current viability of the Morro shoulderband snail has likely improved to some degree since the time of listing due to implementation of conservation efforts, predominantly through protection of habitat through conservation easement, deed restriction, or management for conservation purposes. Additionally, there are substantially more individuals than thought at the time of listing.

Overall, we anticipate that the viability of the species will decline in the future under two of the three scenarios: Status Quo and Limited Conservation. Under the Status Quo scenario, resiliency of the North Morro Bay and Morro Bay Population Areas would remain moderate and low, respectively, while all other Population Areas would be expected to experience decreased resiliency. Under the Status Quo scenario, half of the Population Areas are projected to be in the low resiliency category. Under the Limited Conservation scenario, resilience of the North Morro Bay, Morro Bay, and South Los

Osos Population Areas would remain unchanged. The South Los Osos Population Area is where the majority of the conservation strategy for the LOHCP would occur. Only in the Major Conservation scenario does resiliency remain the same or improve, with the exception of Downtown Los Osos, where we anticipate the majority of development would occur as part of LOHCP implementation. For redundancy, an overall decrease in the condition of Population Areas in two of the three future scenarios suggests those low-condition populations are at risk of being lost and, therefore, that there could be decreased species redundancy. Against a backdrop of increased climate change effects expected to result in prolonged and/or more intensive droughts, increased wildfire frequency and/or intensity, and localized flooding events, risk of extirpation could increase with decreased species redundancy.

Determination of Morro shoulderband snail Status

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines an “endangered species” as a species “in danger of extinction throughout all or a significant portion of its range,” and a “threatened species” as a species “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” The Act requires that we determine whether a species meets the definition of “endangered species” or “threatened species” because of any 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) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence.

Status Throughout All of Its Range

We evaluated threats to the species and assessed the cumulative effect of the threats under the section 4(a)(1) factors. This included an examination of the best scientific and commercial information available regarding the past, present, and future threats faced by the species, as well as information presented in the 2006 5-year review (Service 2006, entire), additional information available since it was completed, and other available published and unpublished information. We also consulted with species experts and land management staff who are actively managing habitat for the conservation of the Morro shoulderband snail.

The primary risk factors affecting Morro shoulderband snails are the present and threatened modification or destruction of its habitat from development (Factor A), wildfire (Factor A), and invasive species (Factor A), as well as effects to its life cycle from changing climate conditions (Factor E). We also considered the threat of collection (Factor B) and examined whether there were any existing regulatory mechanisms (Factor D) addressing ongoing threats. Additional threats to the species include agriculture and vegetation management (Factor A) and predation (Factor C) (Service 2019, pp. 21–45).

Threats influencing the viability of Morro shoulderband snail populations at the time of listing were urban development, off-road vehicle activity, nonnative vegetation (referred to as invasive species in this proposed rule), parasitoids (an insect whose larvae live as parasites that eventually kill their hosts), and competition from brown garden snails, all of which were exacerbated by effects associated with small population size and

drought conditions (59 FR 64613, December 15, 1994). Since the time of listing, we have determined that some of these threats are no longer affecting the species, particularly off-road vehicle activity, brown garden snails, parasitoids, and controlled burns (Service 2006, pp. 11–15). Our current analysis indicates that the remaining threats identified at the time of listing have been reduced in magnitude, and that overall the level of impacts to Morro shoulderband snail and its habitat that placed the species in danger of extinction in 1994 have been substantially reduced. These reductions have occurred predominantly because of significant protection of lands at risk of development and surveys indicating that population numbers now occur in the thousands rather than the hundreds. However, threats are still impacting the species and its habitat, and new threats have been identified since the time of listing.

Of the factors identified above, habitat loss and degradation from fragmentation associated with development and invasive plant species (Factor A), wildfire (Factor A), and effects to the Morro shoulderband snail life cycle from changing climate conditions (Factor E) are the most significant threats to the species currently and into the foreseeable future. Conservation actions have decreased the magnitude of impacts from nonnative invasive plant species; however, degradation of native habitats by these species is ongoing. Apart from the protections afforded by the Act, no regulatory mechanisms are addressing the threats impacting the species and its habitat.

We considered plausible future conditions for the Morro shoulderband snail to evaluate the status of the species into the future. Under the status quo, the species would lose resiliency due to continued threats of habitat loss, decreasing habitat quality due to invasive species and drought, and increased wildfire frequency and intensity. These

effects will increase into the future, putting some Population Areas at risk of extirpation. Major conservation efforts, including implementation of the Los Osos Habitat Conservation Plan conservation program, active management within currently protected but generally unmanaged lands throughout the distribution of the species, and additional habitat protection through acquisition and subsequent management, could help ameliorate some of these threats in the future; however, this level of conservation is not guaranteed to be implemented.

After our review and analysis of threats as they relate to the five statutory factors, we find that this information does not indicate that these threats are affecting individual populations of Morro shoulderband snail or the species as a whole across its range to the extent that they currently are of sufficient imminence, scope, or magnitude to rise to the level that the species is presently in danger of extinction throughout all of its range. However, while numbers of individuals across the majority of its range are greater now than at the time of listing, the species remains negatively affected by continued and future threats and inadequate resource needs across much of its range.

The best available information indicates there are continued population- and range-wide-level impacts to Morro shoulderband snails despite beneficial conservation efforts in several of the Population Areas that have reduced the magnitude of development. Specifically, Morro shoulderband snail populations across the range continue to be negatively affected by effects of development and invasive nonnative plant species, though at a lower level than at the time of listing. However, in the foreseeable future, available information also indicates increasing temperatures and reductions in the amount of annual rainfall associated with climate change will likely result in prolonged

drought conditions that negatively influence Morro shoulderband snail abundance in the future, along with increasing frequency and intensity of wildfires. These effects will combine with the ongoing low-grade impacts of development and invasive plants such that the species is likely to become endangered in the foreseeable future.

Thus, after assessing the best available information, we determine that the Morro shoulderband snail is not currently in danger of extinction, but is likely to become in danger of extinction within the foreseeable future, throughout all of its range.

Status Throughout a Significant Portion of the Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. The court in *Center for Biological Diversity v. Everson*, 2020 WL 437289 (D.D.C. Jan. 28, 2020) (*Everson*), vacated the aspect of the 2014 Significant Portion of its Range Policy that provided that the Services do not undertake an analysis of significant portions of a species' range if the species warrants listing as threatened throughout all of its range. Therefore, we proceed to evaluating whether the species is endangered in a significant portion of its range—that is, whether there is any portion of the species' range for which both (1) the portion is significant; and, (2) the species is in danger of extinction in that portion. Depending on the case, it might be more efficient for us to address the “significance” question or the “status” question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species' range.

Following the court's holding in *Everson*, we now consider whether there are any significant portions of the species' range where the species is in danger of extinction now (i.e., endangered). In undertaking this analysis for the Morro shoulderband snail, we choose to address the status question first—we consider information pertaining to the geographic distribution of both the species and the threats that the species faces to identify any portions of the range where the species is endangered.

For the Morro shoulderband snail, we considered whether the threats are geographically concentrated in any portion of the species' range at a biologically meaningful scale. We examined the following threats: development; invasive species; wildfire; climate change; collection; agriculture and vegetation management; and predation; including cumulative effects. Threats do occur at different magnitudes across the range of the Morro shoulderband snail. For example, the East Los Osos and Downtown Los Osos population areas are at higher risk of development than other areas. Other population areas are at higher risk of fire, such as South Los Osos and Sand Spit. However, there is no population area with a significantly higher magnitude of threats than in other areas, and the magnitude of effects in those areas is not such that the species is likely to become endangered in the foreseeable future. Thus, we found no concentration of threats in any portion of the Morro shoulderband snail's range at a biologically meaningful scale. Thus, there are no portions of the species' range where the species has a different status from its rangewide status. Therefore, no portion of the species' range provides a basis for determining that the species is in danger of extinction in a significant portion of its range, and we determine that the species is likely to become in danger of extinction within the foreseeable future throughout all of its range. This is consistent with

the courts' holdings in *Desert Survivors v. Department of the Interior*, No. 16-cv-01165-JCS, 2018 WL 4053447 (N.D. Cal. Aug. 24, 2018), and *Center for Biological Diversity v. Jewell*, 248 F. Supp. 3d , 946, 959 (D. Ariz. 2017).

Determination of Status

Our review of the best available scientific and commercial information indicates that the Morro shoulderband snail meets the definition of a threatened species. Therefore, we propose to reclassify the Morro shoulderband snail as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Proposed Rule Issued Under Section 4(d) of the Act

Background

Section 4(d) of the Act contains two sentences. The first sentence states that the “Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation” of species listed as threatened. The U.S. Supreme Court has noted that statutory language like “necessary and advisable” demonstrates a large degree of deference to the agency (see *Webster v. Doe*, 486 U.S. 592 (1988)). Conservation is defined in the Act to mean “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to [the Act] are no longer necessary.” Additionally, the second sentence of section 4(d) of the Act states that the Secretary “may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants.” Thus, the combination of the two sentences of section 4(d) provides the Secretary with wide latitude of discretion to select and promulgate appropriate regulations tailored to the specific conservation needs

of the threatened species. The second sentence grants particularly broad discretion to us when adopting the prohibitions under section 9.

The courts have recognized the extent of the Secretary's discretion under this standard to develop rules that are appropriate for the conservation of a species. For example, courts have upheld rules developed under section 4(d) as a valid exercise of agency authority where they prohibited take of threatened wildlife, or include a limited taking prohibition (see *Alsea Valley Alliance v. Lautenbacher*, 2007 U.S. Dist. Lexis 60203 (D. Or. 2007); *Washington Environmental Council v. National Marine Fisheries Service*, 2002 U.S. Dist. Lexis 5432 (W.D. Wash. 2002)). Courts have also upheld 4(d) rules that do not address all of the threats a species faces (see *State of Louisiana v. Verity*, 853 F.2d 322 (5th Cir. 1988)). As noted in the legislative history when the Act was initially enacted, "once an animal is on the threatened list, the Secretary has an almost infinite number of options available to him with regard to the permitted activities for those species. He may, for example, permit taking, but not importation of such species, or he may choose to forbid both taking and importation but allow the transportation of such species" (H.R. Rep. No. 412, 93rd Cong., 1st Sess. 1973).

Exercising this authority under section 4(d), we have developed a proposed rule that is designed to address the Morro shoulderband snail's specific threats and conservation needs. Although the statute does not require us to make a "necessary and advisable" finding with respect to the adoption of specific prohibitions under section 9, we find that this rule as a whole satisfies the requirement in section 4(d) of the Act to issue regulations deemed necessary and advisable to provide for the conservation of the Morro shoulderband snail. As discussed under **Summary of Biological Status and**

Threats, we have concluded that the Morro shoulderband snail is likely to become in danger of extinction within the foreseeable future primarily due to the ongoing impacts of development and invasive plants combined with projected impacts from climate change and increasing frequency and severity of wildfire. The provisions of this proposed 4(d) rule would promote conservation of the Morro shoulderband snail by encouraging management of the landscape in ways that meet both land management considerations and the conservation needs of the Morro shoulderband snail. The provisions of this rule are one of many tools that we would use to promote the conservation of the Morro shoulderband snail. This proposed 4(d) rule would apply only if and when the Service makes final the listing of the Morro shoulderband snail as a threatened species.

Provisions of the Proposed 4(d) Rule

This proposed 4(d) rule would prohibit all acts described under section 9(a)(1) of the Act, except take resulting from the activities listed below when conducted within habitats occupied by the Morro shoulderband snail. This proposed rule to reclassify the Morro shoulderband snail as a threatened species discusses take of individuals through removal or degradation of native habitat as one of the reasons for its decline. It also discusses the effects of more frequent or increased intensity of wildfire events associated with climate change. The specific focus of the exceptions to this proposed 4(d) rule is take directly associated with activities related to native habitat restoration and fire hazard reduction activities occurring within the range of the Morro shoulderband snail.

This proposed 4(d) rule outlines exemptions from the prohibitions of section 9(a)(1) of the Act. These include habitat restoration activities in disturbed or degraded native scrub and chaparral habitats throughout the estimated 2,638-ha (6,520-ac) range of

the Morro shoulderband snail and specific fire hazard reduction activities within the estimated range of the species.

Habitat restoration activities improve the condition and habitat suitability for the Morro shoulderband snail and other constituent scrub and chaparral species. Habitat within the range of the species has been subject to degradation that has reduced its suitability for Morro shoulderband snail. This degradation is the result of invasion by nonnative plant species, particularly the perennial veldt grass (*Ehrharta calycina*), that occurs after clearing of native plant communities or on unmanaged lands post-fire. Perennial veldt grass and other nonnative grass species can serve as ladder fuels and convey fires originating in the wildland–urban interface into the native scrub and chaparral communities that surround the community of Los Osos. Community concern over the frequency and intensity of wildfire is increasing every year with the increased frequency of catastrophic wildfire events in California. Widespread wildfires within the range of Morro shoulderband snail could result in local extirpations of populations/occurrences of the Morro shoulderband snail and reduce or eliminate the ability of the species to recolonize recovering habitat post-fire, even with management of post-wildfire areas.

This proposed 4(d) rule would exempt from the prohibitions in section 9(a)(1) of the Act incidental take resulting from any of the following activities when conducted within the range of the Morro shoulderband snail:

(1) Native habitat restoration activities, inclusive of invasive and/or nonnative species removal, conducted by a conservation organization (*e.g.*, the California Native

Plant Society, Audubon Society, the Land Conservancy of San Luis Obispo County) pursuant to a Service-approved management or restoration plan.

(2) Fire hazard reduction activities implemented by the California Department of Forestry and Fire Protection (CALFIRE) in accordance with a Service-approved plan (such as the Los Osos Community Wildfire Protection Plan (CWPP)) within the range of the Morro shoulderband snail.

Fire hazard reduction activities implemented by CALFIRE and conducted in accordance with a Service-approved plan, like the Los Osos CWPP, on legal parcels or other non-Federal land within the range of the species would be exempted from take prohibitions of section 9(a)(1) of the Act. The CWPP was developed by the San Luis Obispo County Community Fire Safe Council with input from the Service and identifies areas that would receive a range of hazard reduction treatments within and adjacent to the community of Los Osos. Anticipated treatments include removal of downed, dead, or diseased vegetation, creation of shaded fuel breaks, and mowing of nonnative grassland. The CWPP includes measures to reduce the amount and form of take of Morro shoulderband snails that may be present in the treatment areas. We anticipate that these fire hazard reduction activities will have short-term effects on the Morro shoulderband snail. Implementation of the CWPP fire hazard reduction activities would reduce the risk of catastrophic wildfires, which could result in local extirpations of Morro shoulderband snail occurrences/populations.

We recognize the special and unique relationship with our State natural resource agency partners in contributing to conservation of listed species. State agencies often possess scientific data and valuable expertise on the status and distribution of

endangered, threatened, and candidate species of wildlife and plants. State agencies, because of their authorities and their close working relationships with local governments and landowners, are in a unique position to assist us in implementing all aspects of the Act. In this regard, section 6 of the Act provides that we shall cooperate to the maximum extent practicable with the States in carrying out programs authorized by the Act. Therefore, as set forth at 17.31(b), any qualified employee or agent of a State conservation agency that is a party to a cooperative agreement with us in accordance with section 6(c) of the Act, who is designated by his or her agency for such purposes, would be able to conduct activities designed to conserve the Morro shoulderband snail that may result in otherwise prohibited take without additional authorization.

This proposed 4(d) rule would enhance conservation of the Morro shoulderband snail by allowing activities that would contribute to the recovery of the species (restoration activities) or minimize the risks of wildfire that could extirpate populations of Morro shoulderband snail (fire hazard reduction activities). We expect that take of individuals would be predominantly in the form of capture (and moving out of harm's way) of individuals identified during preactivity surveys; however, take in the form of accidental injury or mortality would also be exempted.

Nothing in this proposed 4(d) rule would change in any way the recovery planning provisions of section 4(f) of the Act, the consultation requirements under section 7 of the Act, or our ability to enter into partnerships for the management and protection of the Morro shoulderband snail. However, interagency cooperation may be further streamlined through planned programmatic consultations for the species between us and other Federal agencies, where appropriate. We ask the public, particularly State

agencies and other interested stakeholders that may be affected by the proposed 4(d) rule, to provide comments and suggestions regarding additional guidance and methods that we could provide or use, respectively, to streamline the implementation of this proposed 4(d) rule (see **Information Requested**).

Effects of This Proposed Rule

This proposed rule would revise 50 CFR 17.11(h) to reclassify the Morro shoulderband snail from an endangered species to a threatened species on the Federal List of Endangered and Threatened Wildlife. This reclassification does not substantially change the protection afforded to this species under the Act. Anyone taking, attempting to take, or otherwise possessing this species, or part thereof, in violation of section 9 of the Act or its implementing regulations, with the exceptions as outlined above, is subject to a penalty under section 11 of the Act. Pursuant to section 7 of the Act, Federal agencies must still ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of Morro shoulderband snail. This proposed rule would not affect the critical habitat designation for the Morro shoulderband snail at 50 CFR 17.95(f).

This proposed 4(d) rule only addresses Federal Endangered Species Act requirements and would not change any prohibitions provided for by State law. As explained above, the provisions included in this proposed 4(d) rule are advisable to provide for the conservation of the Morro shoulderband snail. Nothing in this proposed 4(d) rule would change in any way the recovery planning provisions of section 4(f) of the Act, the consultation requirements under section 7 of the Act, or the ability of the Service to enter into partnerships for the management and protection of the Morro shoulderband

snail.

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (a) Be logically organized;
- (b) Use the active voice to address readers directly;
- (c) Use clear language rather than jargon;
- (d) Be divided into short sections and sentences; and
- (e) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To help us with revisions to this proposed rule, your comments should be as specific as possible. For example, you should identify the sections or paragraphs that are unclear, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act

It is our determination that we do not need to prepare an environmental assessment or an environmental impact statement, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons supporting this determination in the *Federal Register* on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited in this proposed rule is available on the Internet at <http://www.regulations.gov> under Docket No. FWS–R8–ES–2019–0025, or upon request from the Field Supervisor, Ventura Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Author

The primary author of this proposed rule is the Ventura Fish and Wildlife Office, Ventura, California.

Lists of Subjects in 50 CFR Part 17

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

Proposed Regulation Promulgation

Accordingly, we hereby propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

1. The authority citation for part 17 continues to read as follows:

AUTHORITY: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

2. Amend § 17.11(h), the List of Endangered and Threatened Wildlife, under SNAILS, by revising the entry for “Snail, Morro shoulderband (=Banded dune)” to read as set forth below.

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* * * *	* * *			
SNAILS				
* * * *	* * *			
Snail, Morro shoulderband	<i>Helminthoglypta walkeriana</i>	Wherever found	T	59 FR 64613, 12/15/1994; [Federal Register citation when published as a final rule]; 50 CFR 17.45(b); ^{4d} 50 CFR 17.95(f). ^{CH}
* * * *	* * *			

3. Revise § 17.45 to read as follows:

§ 17.45 Special rules—snails and clams.

(a) [Reserved]

(b) Morro shoulderband snail (*Helminthoglypta walkeriana*).

(1) *Prohibitions.* The following prohibitions that apply to endangered wildlife also apply to the Morro shoulderband snail. Except as provided under paragraph (b)(2) of this section and §§ 17.4 and 17.5, it is unlawful for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit, or cause to be committed, any of the following acts in regard to this species:

(i) Import or export, as set forth at § 17.21(b).

(ii) Take, as set forth at § 17.21(c)(1).

(iii) Possession and other acts with unlawfully taken specimens, as set forth at § 17.21(d)(1).

(iv) Interstate or foreign commerce in the course of commercial activity, as set forth at § 17.21(e).

(v) Sale or offer for sale, as set forth at § 17.21(f).

(2) *Exceptions from prohibitions.* In regard to this species, you may:

(i) Conduct activities as authorized by a permit under §17.32.

(ii) Take, as set forth at § 17.21(c)(2) through (c)(4) for endangered wildlife.

(iii) Take as set forth at § 17.31(b).

(iv) Take incidental to an otherwise lawful activity caused by:

(A) Native habitat restoration activities, inclusive of invasive and/or nonnative species removal, conducted by a conservation organization pursuant to a Service-approved management or restoration plan.

(B) Fire-hazard reduction activities implemented by the California Department of Forestry and Fire Protection in accordance with a Service-approved plan within the range of the Morro shoulderband snail.

(v) Possess and engage in other acts with unlawfully taken wildlife, as set forth at § 17.21(d)(2) for endangered wildlife.

Aurelia Skipwith
Director,
U.S. Fish and Wildlife Service.