

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for *Achatinella*, a Genus of Hawaiian Tree Snails

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes to determine the genus *Achatinella* to be Endangered. The Service was petitioned by Mr. Alan D. Hart to review the status of the genus. A review was published in the September 17, 1979 *Federal Register* (44 FR 54011). This proposed rule is in response to the petition and subsequent notice of review. The Service welcomes comments from the public.

DATES: Comments from the public must be received by August 25, 1980. Comments from the Governor of Hawaii must be received by September 24, 1980.

ADDRESSES: Interested persons or organizations are requested to submit comments to Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240. Comments and materials related to this rule are available, by appointment, for public inspection during normal business hours at the Service's Office of Endangered Species, Suite 500, 1000 North Glebe Road, Arlington, Virginia.

FOR FURTHER INFORMATION CONTACT: For further information on the proposal, contact Mr. John L. Spinks, Jr., Chief, Office of Endangered Species (703/235-2771).

SUPPLEMENTARY INFORMATION:**Background**

The genus *Achatinella* was the subject of a notice of review in the September 17, 1979 *Federal Register* in response to a petition submitted by Mr. Alan D. Hart. This proposed rule is in response to the petition and to the comments received in response to the notice of review.

This genus, endemic to the island of Oahu, is known for its beauty, variability and extreme localization. Live *Achatinella* are currently found at elevations from 990 feet (Koolau range) to 3,700 feet (Waianae range). Fossil data indicates that *Achatinella* formerly occurred in lowland valleys and along low coastal plains as well.

Achatinella is highly vulnerable to human activities because the various species have (1) small geographical

ranges, (2) a low reproductive rate, (3) virtually no defense mechanisms, and (4) a dependency on relatively intact native forest conditions. Owing to extensive deforestation and other human-induced alterations of Oahu's native environment, more than half of the species in the genus may be recently extinct.

The principal factors leading to the decline of *Achatinella* are (1) destruction of native forests, (2) alteration of native forests by human-induced plants and trees, (3) predation by human-introduced animals, and (4) overcollecting by humans.

Most of the comments received in response to the notice of review were in support of determining Endangered status for *Achatinella*. The Governor of Hawaii responded that the snails should be accorded some type of protective status. The Department of the Air Force offered no objection to Endangered or Threatened status; the Department of the Navy felt that determining Endangered or Threatened status at this time is premature. APHIS (Animal and Plant Health Inspection Service) stated that qualitative judgements may influence the determination to list some species of *Achatinella* as Endangered or Threatened. Dr. A. Solem of the Field Museum of Natural History agreed that protection is needed for the snails. Several private individuals agreed that these snails qualify for Endangered status.

Numerous forest fires have denuded many lower mountain slopes and ravines. Oahu has had at least five major forest fires since 1970. This does not include forest fires in and around military firing ranges such as in the Schofield Barracks Forest Reserve.

Due to extensive forest destruction by the turn of the century, a major reforestation effort was begun to conserve water and prevent soil erosion. Native trees were considered too slow growing, so faster growing exotic trees such as Australian eucalyptus, ironwood, Norfolk Island pine, paper bark, silk oak, and others were imported and planted in lower and middle ridge zones. Other exotics such as coffee, mango, guava, lantana were also introduced. These exotics dilute *Achatinella's* food supply. *Clidemia hirta*, an exotic ornamental, has become a problem in the Koolau range by forming dense islands occupying large areas of wet forest understorey and thus, hindering native plant growth and regeneration. *Clidemia* is now spreading to the forests of the Waianae range.

Section 4(a) of the Act (16 U.S.C. 1531 et seq.) states: "General—(1). The Secretary shall by regulation determine

whether any species is an endangered species or a threatened species because of any of the following factors:

(1) The present or threatened destruction, modification, or curtailment of its range;

(2) overutilization for commercial, sporting, scientific, or educational purposes;

(3) Disease or predation;

(4) The inadequacy of existing regulatory mechanisms; or

(5) Other natural or man-made factors affecting its continued existence."

This authority has been delegated to the Director.

Summary of Factors Affecting the Species

These findings are summarized herein under each of the five criteria of Section 4(a) of the Act. These factors, and their application to *Achatinella*, are as follows:

1. *The present or threatened destruction, modification, or curtailment of its habitat or range.* Botanical literature and subfossil deposits indicate that native forests covered much of Oahu in the prehuman era. By 1978, approximately 85% of the original forest cover had been destroyed or radically altered. Most remaining native forest occurred at an altitude about 1,200 feet at the heads of ravines and upper valleys; above 1,500 on most ridges of the Koolau and Waianae Mountain ranges. Following the arrival of settlers during the 1800's widespread deforestation occurred. Most woodlands below 1,200 feet were cleared. The *Achatinella* in these forests disappeared.

The false staghorn fern (uluhe), *Dicranopteris linearis* is forming dense thickets in the Koolau range, smothering the native forest and impacting the snails. In healthy native wet forest ecosystems, uluhe is present but inconspicuous. The overgrowth of uluhe very likely stems from human disturbance. Fires have opened up lower ridge areas to the fern; in higher regions feral mammals (especially pigs) have rooted up and opened up portions of understorey allowing invasion by exotics.

2. *Overutilization for commercial, sporting, scientific, or educational purposes.* Excessive human collection of *Achatinella* snails for their beautiful, varied and often rare shells has contributed to the decline of these species. The most intense period of collecting was from 1830 to 1940. Since each shell is unique in shape, size, color and pattern, collectors took many of each variety. Probably millions of snails were collected for their shells over the

years. Two private collections made at the turn of the century contain more than 100,000 shells. Many private collections of *Achatinella* exist in Honolulu alone.

Some species of *Achatinella* (*A. papyracea*, *A. juncea*, *A. buddii*) were rare even in the 1930's, while other species (*A. lehuiensis*, *A. thaanumi*, *A. spaldingi*) were extremely rare when discovered and became extinct soon afterwards. The days of *Achatinella*'s widespread abundance are gone. It is now believed that only 19 of the 41 *Achatinella* species still exist.

People are still collecting live *Achatinella* for shell leis and other non-scientific purposes. A limited number of hiking trails are accessible to the general public in Oahu's mountains. Remnant colonies of *Achatinella* exist near some of these trails. Since the popularity of hiking is increasing, so is *Achatinella*'s exposure to more people and would-be collectors.

3. *Disease or predation.* Prior to man's arrival on Oahu, *Achatinella* had few predators among the native terrestrial fauna. A few species of native birds (Oahu thrush, *Phaeornis obscurus obscurus*; Pueo or short-eared owl, *Asio flammeus*; Oahu oo, *Moho apicalis*) would take an occasional land snail. Within the past 100 years, two types of human-induced predators have become major threats to *Achatinella*'s existence—rodents and the carnivorous land snail, *Euglandina rosea*.

Of the three species of introduced rats in Hawaii, the arboreal roof rat (*Rattus rattus*) poses the greatest problem. They are found throughout the dense wet forests. These tree-climbing rats can dislodge native land snails, bite open their shells, and extract the insides. Many rat-killed shells were found throughout the Wainanae range.

Euglandina rosea is a large carnivorous snail imported to Oahu from Florida to control *Achatina fulica*, the giant African snail. The giant African snail had become an uncontrollable pest in the lowland regions shortly after their introduction by a private individual. *Euglandina* established itself, increased dramatically in numbers and migrated from the dry, lower elevations to the mountain forests where they have decimated a substantial portion of Oahu's native land snail fauna. In areas where *Euglandina* is long established, living *Achatinella* are usually very rare.

4. *The inadequacy of existing regulatory mechanisms.* Since these species occur within State Forest Reserves and/or Conservation Districts, the State's Department of Land and Natural Resources/Division of Forestry

administers the regulations that apply to these lands.

Listing these species as Endangered pursuant to the Endangered Species Act may give these species added protection. Private landowners whose lands occur within a conservation district may apply to the Department of Land and Natural Resources for a permit to change from current land use. If Endangered species are within the area under consideration, the Department of Land and Natural Resources should consider this point in reviewing these applications. This consideration could result in the snails' habitat remaining intact.

5. *Other natural or man-made factors affecting its continued existence.* Oahu's growing human population is causing problems for *Achatinella*.

Approximately 80% of the State's population lives on Oahu. Increasing numbers of people will use the island's limited forest reserves which are managed using a multiple-use concept. Activities such as military exercises and artillery practice, hiking and hunting, as well as forestry will continue to exert pressure on remnant native ecosystems.

Critical Habitat

Section 4(a)(1) states "The Secretary shall by regulation determine whether any species is an endangered species or a threatened species * * * At the time any such regulation is proposed, the Secretary shall also by regulation, to the maximum extent prudent, specify any habitat of such species which is then considered to be critical habitat."

As previously stated in this proposed rule, collecting is one of the reasons for the decline and/or extinction of *Achatinella*. The highly variable colored shells of *Achatinella* have been and are prized by collectors. Publication of detailed location maps delineating Critical Habitat would make these species more vulnerable to taking. For this reason, a decision has been made that Critical Habitat determination for *Achatinella* would not be prudent, since it would have the potential to jeopardize these species further.

Effect of This Proposal if Published as a Final Rule

Endangered Species regulations published in Title 50, § 17.21 of the Code of Federal Regulations set forth a series of general prohibitions and exceptions which apply to all Endangered species.

If the genus *Achatinella* is determined to be Endangered, all known living species of the genus would have that same status and be subject to the protection of the Endangered Species Act of 1973. The data we presently have

indicates that each component species of this genus is either extinct or in danger of extinction. The species of this genus which are believed to be extinct are:

Achatinella abbreviata

A. buddii
A. caesia
A. casta
A. cestus
A. decora
A. dimorpha
A. elegans
A. juddii
A. juncea
A. lehuiensis
A. livida
A. papyracea
A. phaeozona
A. rosea
A. spaldingi
A. stewartii
A. thaahumi
A. valida
A. viridans
A. vittata
A. vulpina

The species thought to be in danger of extinction are:

Achatinella apexfulva

A. bellula
A. bulimoides
A. byronii
A. concavospira
A. curta
A. decipiens
A. fulgens
A. fuscobasis
A. leucorraphe
A. lila
A. lorata
A. mustelina
A. pulcherrima
A. pupukanioe
A. sowerbyana
A. swiftii
A. taeniolata
A. turgida

Since these snails' habitats are found in rugged inaccessible terrain, it is possible that some individuals of those species thought to be extinct may still exist. If any individuals of these species are found alive, they would automatically be protected, since the entire genus is proposed for Endangered status.

With respect to all species of the genus *Achatinella*, all prohibitions of Section 9(a)(1) of the Act, as implemented by 50 CFR 17.21, will apply. These prohibitions, in part, would make it illegal for any person subject to the jurisdiction of the United States to take, import or export, ship in interstate or foreign commerce in the course of a commercial activity, or sell or offer to sell those species in interstate or foreign commerce. It would also be illegal to possess, sell, deliver, carry, transport, or

ship any such wildlife which was illegally taken, imported or exported. Certain exceptions would apply to agents of the Service and State conservation agencies for limited purposes.

Regulations published in the **Federal Register** of September 26, 1975, (40 FR 44412), codified at 50 CFR 17.22 and 17.23, provide for the issuance of permits to carry out otherwise prohibited activities involving Endangered species under certain circumstances. Such permits are available for scientific purposes or to enhance the propagation or survival of the species. In some instances, permits may be issued during a specified period of time to relieve undue economic hardship which would be suffered if such relief were not available.

Section 7(a) of the Act provides in part, that:

(1) The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to Section 4 of this Act. (2) Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an 'agency action') is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary after consultation as appropriate with the affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to

subsection (h) of this section. In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available.

Provisions for Interagency Cooperation are codified at 50 CFR Part 402. If published as a final rule, this proposal would require Federal agencies to insure that activities they authorize, fund or carry out, do not jeopardize the continued existence of *Achatinella*.

Public Comments Solicited

The Director intends that the rules finally adopted be as accurate and effective as possible in the conservation of any Endangered or Threatened species. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, private interests, or any other interested party concerning any aspect of these proposed rules are hereby solicited. Comments particularly are sought concerning:

- (1) Biological, commercial, or other relevant data concerning any threat (or the lack thereof) to the species included in this proposal;
- (2) The location of and the reasons why any habitat of these species should or should not be determined to be Critical Habitat as provided for by Section 7 of the Act;
- (3) Additional information concerning the range and distribution of these species;
- (4) Current or planned activities in the subject areas;

Public Meetings

The Service hereby announces that public meetings will be held on this proposed rule. The public is invited to attend these meetings and to present

opinions and information on the proposal. Specific information relating to the public meeting is set out below:

National Environmental Policy Act

A draft Environmental Assessment has been prepared and is on file in the Service's Office of Endangered Species. The assessment will be the basis for a decision as to whether this determination is a major Federal action which would significantly affect the quality of the human environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969.

The Service has determined that this is not a significant rule and does not require preparation of a regulatory analysis under Executive Order 12044 and 43 CFR Part 14.

The primary authors of this rule are Dr. Steven M. Chambers and Mrs. Lorraine K. Williams, Washington Office of Endangered Species, (703/235-1975).

References

Hart, A.D. 1978. The onslaught against Hawaii's tree snails. *Natural History*, 87:46-57 (December issue).
 Hart, A.D. 1979. A survival status report on the endemic Hawaiian tree snail genus *Achatinella* (Swainson) from Oahu. Unpublished report submitted to the Office of Endangered Species, May 1.
 Van der Schalie, H. 1969. Man meddles with nature—Hawaii style. *The Biologist* 51:136-146.
 Young, G. 1979. Which way Oahu? *National Geographic Magazine* 156(5): 652-679 (November issue).

Regulations Promulgation

Accordingly, it is hereby proposed to amend § 17.11 by adding in alphabetical order, the following to the list of animals.

**§ 17.11 Endangered and threatened wildlife.
 List of Endangered and Threatened Wildlife (§ 17.11)**

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
Snails, Oahu tree	<i>Achatinella</i> all species	Hawaii	NA	E		NA	

Dated: June 16, 1980.
 Lynn A. Greenwalt,
 Director, Fish and Wildlife Service.
 [FR Doc. 80-19309 Filed 6-25-80; 8:45 am]
 BILLING CODE 4310-55-M