

**Newcomb's Snail**  
**(*Erinna newcombi*)**

**5-Year Review**  
**Summary and Evaluation**

**U.S. Fish and Wildlife Service**  
**Pacific Islands Fish and Wildlife Office**  
**Honolulu, Hawaii**

# 5-YEAR REVIEW

Species reviewed: Newcomb's Snail (*Erinna newcombi*)

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**5-YEAR REVIEW**  
**Newcomb's Snail/ *Erinna newcombi***

**1.0 GENERAL INFORMATION**

**1.1 Reviewers**

**Lead Regional Office:**

Region 1, Endangered Species Program, Division of Recovery, Jesse D'Elia,  
(503) 231-2071

**Lead Field Office:**

Pacific Islands Fish and Wildlife Office, Gina Shultz, Deputy Field Supervisor,  
(808) 792-9400

**Cooperating Field Office(s):**

N/A

**Cooperating Regional Office(s):**

N/A

**1.2 Methodology used to complete the review:**

This review was conducted by staff of the Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (USFWS) beginning on July 6, 2005. The Recovery Plan for the Newcomb's snail *Erinna newcombi* (USFWS 2006) was the primary source of information for this five-year review. The evaluation of the status of the species was prepared by the lead PIFWO biologists. The document was then reviewed by the Recovery Program Leader and acting Assistant Field Supervisor for Endangered Species, and Deputy Field Supervisor, before submission to the Field Supervisor for approval.

**1.3 Background:**

**1.3.1 FR Notice citation announcing initiation of this review:**

USFWS. 2007. Endangered and threatened wildlife and plants; initiation of 5-year reviews of 71 species in Oregon, Hawaii, Commonwealth of the Northern Mariana Islands, and Territory of Guam. Federal Register 72(45): 10547-10550.

### 1.3.2 Listing history

#### Original Listing

**FR notice:** U.S. Fish and Wildlife Service. 2000. Endangered and threatened wildlife and plants; determination of threatened status for Newcomb's snail from the Hawaiian Islands. Federal Register 65(17): 4162-4169.

**Date listed:** January 26, 2000

**Entity listed:** Species

**Classification:** Threatened

#### Revised Listing, if applicable

**FR notice:** N/A

**Date listed:** N/A

**Entity listed:** N/A

**Classification:** N/A

### 1.3.3 Associated rulemakings:

USFWS. 2002. Endangered and threatened wildlife and plants; designation of critical habitat for Newcomb's snail; final rule, HI. Federal Register 67(18):54025-54056.

Critical habitat was designated for Newcomb's snail in eight stream segments, and associated springs and seeps, totaling 19.76 kilometers (12.28 miles). This designation includes habitat on State and private lands (USFWS 2002).

**1.3.4 Review History:** Species status (FY2008 Recovery Data Call [September 2008]):

Stable

**1.3.5 Species' Recovery Priority Number at start of this 5-year review:**

1

### 1.3.6 Current Recovery Plan or Outline

**Name of plan or outline:** USFWS. 2006. Recovery plan for the Newcomb's snail (*Erinna newcombi*). U.S. Fish and Wildlife Service, Portland, OR. 52 pages.

**Date issued:** May 4, 2006

**Dates of previous revisions, if applicable:** N/A

## 2.0 REVIEW ANALYSIS

### 2.1 Application of the 1996 Distinct Population Segment (DPS) policy

2.1.1 Is the species under review a vertebrate?

*Yes*  
 *No*

2.1.2 Is the species under review listed as a DPS?

*Yes*  
 *No*

2.1.3 Was the DPS listed prior to 1996?

*Yes*  
 *No*

2.1.3.1 Prior to this 5-year review, was the DPS classification reviewed to ensure it meets the 1996 policy standards?

*Yes*  
 *No*

2.1.3.2 Does the DPS listing meet the discreteness and significance elements of the 1996 DPS policy?

*Yes*  
 *No*

2.1.4 Is there relevant new information for this species regarding the application of the DPS policy?

*Yes*  
 *No*

### 2.2 Recovery Criteria

2.2.1 Does the species have a final, approved recovery plan containing objective, measurable criteria?

*Yes*  
 *No*

2.2.2 Adequacy of recovery criteria.

2.2.2.1 Do the recovery criteria reflect the best available and most up-to date information on the biology of the species and its habitat?

*Yes*  
 *No*

**2.2.2.2 Are all of the 5 listing factors that are relevant to the species addressed in the recovery criteria?**

*Yes*  
 *No*

**2.2.3 List the recovery criteria as they appear in the recovery plan, and discuss how each criterion has or has not been met, citing information:**

- (1) Abundance and population variability are quantified, and populations (an unspecified number of individuals that allows for environmental, climatic, and genetic variations) are stable or increasing in size due to natural reproduction for a minimum of five consecutive years.

This objective has not been met. Population goals cannot yet be quantified for this species because little fieldwork has been completed on this species in the past 10 years, and original data on sites and densities were rough estimates based on qualitative observations, not on repeatable, quantitative surveys.

- (2) Populations are identified in a minimum of eight watersheds with a wide geographical distribution throughout the range of the Newcomb's snail.

This objective has not been met. In order to identify populations, a better understanding of the species biology and habitat requirements is needed.

- (3) Minimum in-stream flows protective of aquatic life are established and implemented for stream reaches containing Newcomb's snail populations.

This objective has not been met. Surveys and research are needed in order to address this recovery criterion.

- (4) Non-native predators and competitors have been studied, their effects on the snail quantified, and the appropriate control measures have been established and implemented in order to support the population goal researched under criterion 1 above.

This objective has not been met. Early field notes do not indicate or allude to predators or competitors. Future surveys need to include observations and notes of potential threats and competitors in order address recovery criteria.

- (5) A post-delisting monitoring plan has been developed.

This objective has not been met and is not yet applicable.

**2.3 Updated Information and Current Species Status**

### **2.3.1 Biology and Habitat**

Information on the species' status and threats was included in the Recovery Plan referenced above in section 1.3.6 ("Current Recovery Plan or Outline").

#### **2.3.1.1 New information on the species' biology and life history:**

No new information.

#### **2.3.1.2 Abundance, population trends (e.g. increasing, decreasing, stable), demographic features (e.g., age structure, sex ratio, family size, birth rate, age at mortality, mortality rate, etc.), or demographic trends:**

On August 25, 2005, Newcomb's snails were observed in a small spring/stream that forms a tributary to Kalalau Stream (Boynton and Wood 2007). Qualitative observation suggests that several thousand snails were present at this location. This probably represents a newly discovered subpopulation in addition to the population previously known from Kalalau which is referred to in the listing and critical habitat documents.

On September 25, 2006, Newcomb's snails were observed in spring-fed waterfalls at the 800 to 1000-foot elevation of Hanakoa Stream in the vicinity of Hanakoa Falls (Boynton and Wood 2007). This location was considered a historical population based on Bishop museum specimens collected on July 16, 1907. A snail survey at that site in 1996 revealed no snails.

A qualitative survey conducted on February 20, 2007 at Makaleha Stream indicated that several hundred snails were present at that location.

#### **2.3.1.3 Genetics, genetic variation, or trends in genetic variation (e.g., loss of genetic variation, genetic drift, inbreeding, etc.):**

No new information.

#### **2.3.1.4 Taxonomic classification or changes in nomenclature:**

No new information.

#### **2.3.1.5 Spatial distribution, trends in spatial distribution (e.g. increasingly fragmented, increased numbers of corridors, etc.), or historic range (e.g. corrections to the historical range, change in distribution of the species' within its historic range, etc.):**

No new information.

**2.3.1.6 Habitat or ecosystem conditions (e.g., amount, distribution, and suitability of the habitat or ecosystem):**

No new information.

**2.3.1.7 Other:**

Not applicable.

**2.3.2 Five-Factor Analysis (threats, conservation measures, and regulatory mechanisms)**

**2.3.2.1 Present or threatened destruction, modification or curtailment of its habitat or range:**

No change.

**2.3.2.2 Overutilization for commercial, recreational, scientific, or educational purposes:**

No change.

**2.3.2.3 Disease or predation:**

No change.

**2.3.2.4 Inadequacy of existing regulatory mechanisms:**

No change.

**2.3.2.5 Other natural or manmade factors affecting its continued existence:**

No change.

**2.4 Synthesis**

Newcomb's snail (*Erinna newcombi*) is one of four freshwater snail species native to Hawaii in the family Lymnaeidae. The distribution of Newcomb's snail is restricted to approximately ten very small sites located on seven streams in the interior of the island of Kauai. Little quantitative data is available regarding the distribution of subpopulations among these sites, current population sizes, or population variability over time. For example, at least five of these subpopulations have been visited only on a single occasion (e.g., on the event of their discovery) and these populations have never been resurveyed (e.g., Lumahai

and lower Hanalei). These two “known” snail populations lack documentation completely (no field notes, no photographs, no GPS location/position data). In the listing rule, the Lumahai River site was considered the largest population based on a single anecdotal report. Given the extremely rugged terrain of interior Kauai island, these locations would be quite difficult to relocate, and if snails were found it would not be possible to determine if the original population was relocated or if a new neighboring subpopulation was found.

Other locations that were considered known populations in the listing and critical habitat rules have been revisited one or more times but these visits have not revealed snails (e.g., the South Fork of the Wailua River site and upper Hanalei River site). In recent years, snails have only been observed at large flowing springs, such as the Makaleha Spring site, and springs located in lower Kalalau Valley (described below). No snails have been observed at any mainstem stream (non-spring-associated) locations in recent years and numerous questions remain regarding the distribution of Newcomb’s snails and their population dynamics.

As described in the Recovery Plan, quantitative surveys of snails are challenging. Snails inhabit a jumbled and complex three-dimensional cobble and boulder substrate that is covered with shallow turbulent water. Visual observation is difficult because snails are submerged, are small, and are the same black color as the basaltic substrate. A high priority task continues to be to develop a method to adequately enumerate snails so that their population size and population variability over time can be estimated. A pilot program to begin a longer term time-series of a snail population using both artificial substrate and quadrat- or line-transect methods should be developed and implemented.

### 3.0 RESULTS

#### 3.1 Recommended Classification:

- Downlist to Threatened
- Uplist to Endangered
- Delist
  - Extinction
  - Recovery
  - Original data for classification in error
- No change is needed

#### 3.2 New Recovery Priority Number: N/A

**Brief Rationale:**

#### 3.3 Listing and Reclassification Priority Number: N/A

**Reclassification (from Threatened to Endangered) Priority Number: \_\_\_\_\_**

**Reclassification (from Endangered to Threatened) Priority Number: \_\_\_\_\_**

**Delisting (regardless of current classification) Priority Number: \_\_\_\_\_**

**Brief Rationale:**

#### **4.0 RECOMMENDATIONS FOR FUTURE ACTIONS**

- Study factors that threaten the Newcomb's snail. This includes predation by introduced organisms such as the predatory snail *Euglandina rosea*, habitat degradation due to invasive aquatic and terrestrial species, and other biological and physical changes to their habitat.
- Monitor snails at the Hanakapiai Stream to determine the cause of the snail's extirpation. The likely cause of the disappearance of the snails that were documented at that site historically is not known. The characterization of threats to the snails is important to inform recovery planning and implementation.
- Revisit all locations where Newcomb's snails have been reported in the last 20 years and obtain quantitative population data. As time and resources allow, this survey program should be augmented to include visits to unsurveyed areas likely to harbor snails, and also revisiting of areas that historically had snails but where they are now thought to be extirpated.

The results of these surveys will allow the Service and natural resource partners, including the State of Hawaii's Division of Aquatic Resources, local governments, and non-governmental entities, to plan and implement recovery actions for the snail. This information will allow more thorough review and analysis of potential impacts to Newcomb's snails due to future water resource development impacts such as new or expanded hydropower development and potential effects of natural resource management activities such as control of feral ungulate populations and watershed protection and restoration efforts.

#### **5.0 REFERENCES**

Boynton, D. and K.R. Wood. 2007. *Erinna newcombi* Adams and Adams (Mollusca: Lymnaeidae): a rediscovered population in Hanakoa, Kaua'i, Hawai'i. Bishop Museum Occasional Papers 96:52–54. [Note: the photograph accompanying the published note did not depict a Newcomb's snail; however, an errata note was submitted for publication with the correct photograph (K. Woods, pers. comm., July 18, 2008)]

[USFWS] U.S. Fish and Wildlife Service. 2002. Endangered and threatened wildlife and plants; designation of critical habitat for Newcomb's snail; final rule, HI. Federal Register 67(18):54025-54056.

[USFWS] U.S. Fish and Wildlife Service. 2006. Recovery plan for the Newcomb's snail (*Erinna newcombi*). U.S. Fish and Wildlife Service, Portland, OR. 52 pages.

**Signature Page**  
**U.S. FISH AND WILDLIFE SERVICE**  
**5-YEAR REVIEW of Newcomb's snail (*Erinna newcombi*)**

**Current Classification:**     T    

**Recommendation resulting from the 5-Year Review:**

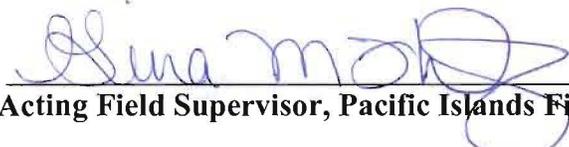
- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change needed

**Appropriate Listing/Reclassification Priority Number, if applicable:** \_\_\_\_\_

**Review Conducted By:**

Gordon Smith, Fish and Wildlife Biologist  
Joy Hiromasa, Fish and Wildlife Biologist  
Marilet A. Zablan, Recovery Program Leader and acting Assistant Field Supervisor for  
Endangered Species  
Gina Shultz, Deputy Field Supervisor

Approved: \_\_\_\_\_

  
Acting Field Supervisor, Pacific Islands Fish and Wildlife Office

Date

29 July 2009