

Land gastropods (snails & slugs) of **Los Angeles County**



Why snails?

- Many local species are **endemic** to Southern California
- In fact, land snails are highly endemic around the world.
- They evolve adaptations to relatively small locations.
- Habitat destruction has put many land snails at high risk of extinction, including almost all of the endemic species in Southern California.

Papustyla pulcherrima

Manus Green Tree Snail

- ✧ **Found:** Manus Island, Papua New Guinea
- ✧ **Facts:** green color is natural but is only in outer protein layer of shell
- ✧ **Lifestyle:** tree snail, lives in island rainforests
- ✧ **Conservation status:** **Endangered**
due to over-collection by humans
and habitat (native tree) loss from logging

LACM 178802

Papustyla pulcherrima

(Rensch, 1931)

Manus Id., Admiralty Ids., Bismarck
Arch., Papua New Guinea. 1 JUL 185-31
JUL 1985.

Natural History Museum of Los Angeles County



Achatinella fulgens

O`ahu tree snail

- ✧ **Found:** O`ahu, Hawaii
- ✧ **Facts:** sinistral (left-coiling), 41 species, 30 species extinct
- ✧ **Lifestyle:** tree snail, eats fungus off tree leaves
- ✧ **Conservation status:** **Critically endangered** due to predation by rats, introduced snails, and habitat (native tree) loss



Zonitoides arboreus



Oxychilus sp.



S.L.I.M.E

Snails & slugs

Living

In

Metropolitan

Environments

Goals of SLIME

- Inventory of living snail species in Los Angeles County
- Compare with Museum historical records
- Note introductions and extinctions
- Ask where and why do populations live where they do

What role do snails play in the environment?

Many snails are **decomposers**.

Decomposers consume dead or dying leaves, wood, and fungus. Without snails and other decomposers it would take much longer for nutrients to cycle through the environment: that is, move from living things to the soil, then back into living things again.

Which snails and slugs are considered pests? Why?

Pest snails are those that cause damage to human-grown plants and/or are so abundant that they cause damage to human-created landscapes. **Most pest snails are introduced species and not native.**

Which snails have been introduced to Southern California? How and why?

There are many species of introduced snails, some intentionally and some accidentally.

Here are **three examples:**

***1. Cornu asperum*: brown garden snail:**

This species is raised to be eaten as escargot in parts of Europe. It was intentionally introduced into California in the 1850s to be used for food, apparently escaped, and is now found throughout the state and is common in both urban and rural environments.



***2. Rumina decollata*: decollate snail:**

This species was intentionally released into Southern California citrus orchards to eat *Cornu asperum* (the brown garden snails), which were eating orange, lemon, and other citrus crops. Unfortunately, *Rumina decollata* also eats endemic and endangered species.



3. *Discus rotundatus*: rotund disc snail:

This European species was accidentally released into Southern California (and much of North America) likely through soil or plant stocks. No one knows exactly when it first appeared here, but introduction via the international horticulture trade seems likely because, so far, this species has only been found in gardens, greenhouses, and well-kept parks.



What eats snails?

- Beetles
- Flies (can lay their eggs in them)
 - Spiders
 - Salamanders
 - Frogs
 - Lizards & snakes
 - Moles & shrews
- Raccoons and other carnivorous mammals
 - Many different birds

Where to look for snails and slugs

- **Damp areas**

- Under rocks
- Among leaf litter and woody debris
- In the dirt
- Under plant leaves
- On plants
- Close to water and/or sprinklers
- On or around native plants OR edible garden plants
- Along hikes (some snails are found at higher altitudes)
- In forested areas
- In desert areas (gardens too) with cactus
- In between exposed tree roots
- Sidewalks and crevices, on and between bricks

When is best to look for land snails and slugs?

- **Damp, cool, mornings and evenings are ideal**
- **After rain or watering**
- **Night (for some species)**

**Snails (and one slug) species found in
the NHM Nature Garden**

&

Exposition Park Rose Garden

Land gastropods (snails & slugs) of LA County

Oxychilus sp.

O. alliarius, *O. cellarius*, *O. draparnaudi*
Garlic, Cellar, and Draparnaud's Glass snails: Introduced



O. draparnaudi



O. cellarius



O. alliarius

iNaturalist: Gavin Kingsley

All three species common in urban gardens, greenhouses,
and urban landscapes. *Shell length = 5.5 - 16 mm*

Land gastropods (snails & slugs) of LA County

Zonitoides arboreus

Orchid snails, Quick Gloss snails: Native, secure



Urban gardens, greenhouses, and urban landscapes. Common.
Shell length = 4.5 -6 mm.

Land gastropods (snails & slugs) of LA County

Polygyra cereolus

Southern Flatcoil snails: Introduced



Urban gardens because of horticultural trade. Nature Garden, first record in Los Angeles, 2012. *Shell length = 11 - 18 mm.*

Land gastropods (snails & slugs) of LA County

Vallonia pulchella & *Vallonia costata*

Lovely vallonia, smooth grass snails & ribbed grass snails: Introduced



<https://gastropods.wordpress.com/tag/valloniapulchella/>



<http://www.molluscs.at/gastropoda/terrestrial.html?/gastropoda/terrestrial/valloniidae.html>

Damp soil and leaves of gardens and greenhouses: smooth species common in Los Angeles, ribbed species, less common. *Shell length = under 4 mm.*

Land gastropods (snails & slugs) of LA County

Cornu aspersum (formerly *Helix aspersa*)

European Garden snails: **Introduced**



Common snails in Los Angeles, invasive, destructive pest:
remove when found

Land gastropods (snails & slugs) of LA County

Rumina decollata

Decollate snails: Introduced, invasive

iNaturalist: Siegrun Storer



Invasive, eats introduced *Cornu aspersa* & native snails. Remove when found!

Land gastropods (snails & slugs) of LA County

Slug

Lehmannia valentiana

Greenhouse slug, banded garden slug: Introduced

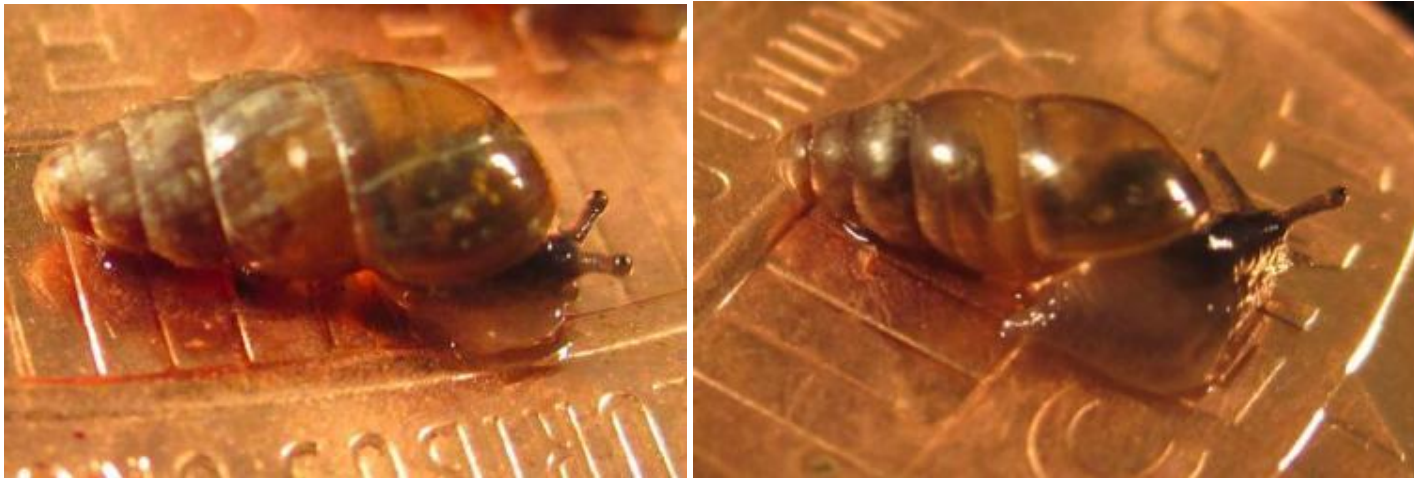


Eats decaying wood and living plants, can be a garden pest

Land gastropods (snails & slugs) of LA County

Cochlicopa lubrica

Glossy pillar snail, appleseed snail: Native, secure



Damp substrates, under leaf litter.
Shell length = 5.5 – 6 mm.

What you could find elsewhere in Los Angeles

Macro: *large enough to easily see by eye*

Land gastropods (snails & slugs) of LA County

Helminthoglypta traskii

Peninsular range Shoulderband snail: Native, imperiled

LACM 174901

Helminthoglypta (Charodontes) traskii

(Newcomb, 1861)

along Los Angeles River N of Griffith
Park, Los Angeles Co., California. Ex:
W.O. Gregg.

Natural History Museum of Los Angeles County

NO. G-7132

NAME

LOC. Ravine near Palos Verdes Drive
East and Picardie Road, Palos Verdes
Peninsula, Los Angeles County,
California. Leg. Chace & Gregg,
January 29, 1955. Wendell O. Gregg

collection LOS ANGELES COUNTY
MUSEUM OF NATURAL HISTORY

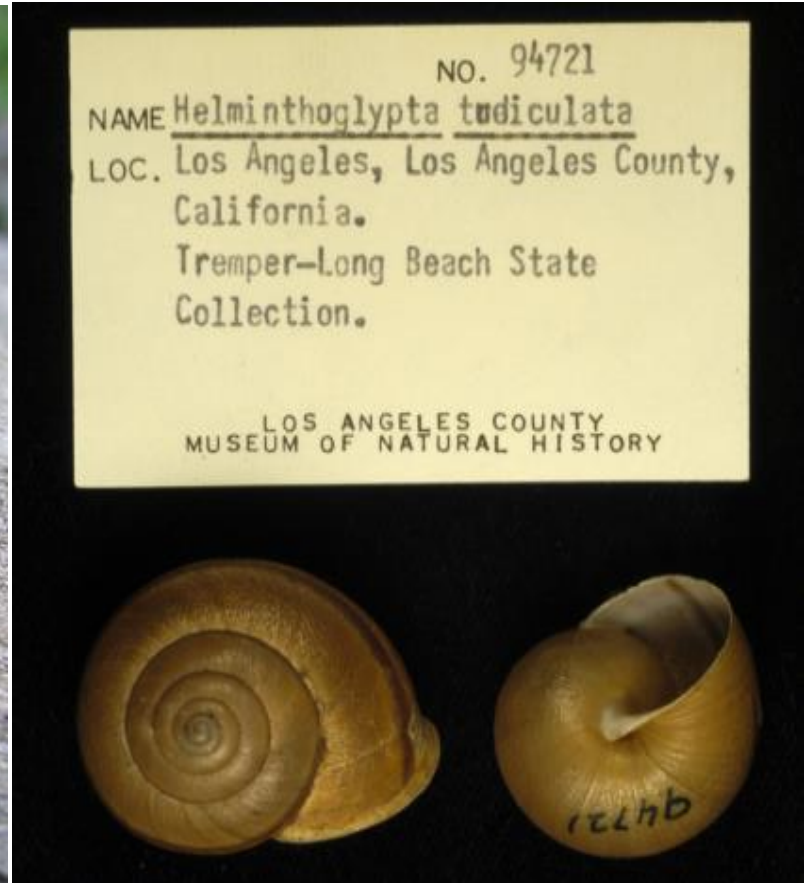


Under logs or rocks: used to be common throughout Los Angeles basin

Land gastropods (snails & slugs) of LA County

Helminthoglypta tudiculata

Southern Shoulderband snail **Native**, **imperiled**



Under logs or rocks: not typically found in urban environments

Land gastropods (snails & slugs) of LA County

Helminthoglypta ayresiana

San Miguel Shoulderband snails, Ayer's snail: Native, critically imperiled



Very rare in Los Angeles basin, mostly restricted to San Miguel Island

Land gastropods (snails & slugs) of LA County

Glyptostoma newberryanum

San Diego Chestnut snail: Native, imperiled



Under logs, cactus, rocks: not typically found in urban environments

Land gastropods (snails & slugs) of LA County

Glyptostoma gabrielense

San Gabriel Chestnut snail: Native, Critically imperiled

NO. A. 6186.52

NAME
LOC. Monrovia, Los Angeles County,
California. Ball collection.

LOS ANGELES COUNTY
MUSEUM OF NATURAL HISTORY



Under logs, cactus, rocks: Pasadena, Dominguez Hills, San Gabriel Valley

Land gastropods (snails & slugs) of LA County

Otala lactea

Milk snail: Introduced



iNaturalist: Jay Keller

Can be found in large colonies, a garden pest

Land gastropods (snails & slugs) of LA County

Theba pisana

White Garden snail, White Italian snail: Introduced & invasive



iNaturalist: Christophe Quintin

Can be found in colonies, common in urban areas, considered a pest:
remove when found.

Land gastropods (snails & slugs) of LA County

Xerarionta kelletii

Catalina cactus snail: Native, imperiled

https://www.flickr.com/photos/landshells_freshwater_gastropods/9319254167/



Micrarionta (Xerarionta) kelletii
(FORBES, 1850)
Etats Unis, 18mm

Known only from Santa Catalina island and the Palos Verde peninsula

Land gastropods (snails & slugs) of LA County

Oxyloma sillimani

Northwest Striate snail, Puget Sound Zonite: Native, imperiled

The specimen figured is a related species, *Oxyloma elegans*. There is very little data about *Oxyloma sillimani* in California.



<http://de.wikipedia.org/wiki/Oxyloma>

Wet substrates like moss near other plants and water, often steam banks.
Shell length = 16 – 20 mm.

Land gastropods (snails & slugs) of LA County

Catinella rehderi

Chrome amber snail: Native, vulnerable

The specimen figured is a related species, *Catinella arenaria*. There is very little data about *Catinella rehderi* in California.



<http://www.arkive.org/sandbowl-snails/catinella-arenaria/>

Damp substrates, under stones or logs.
Shell length = 8.5 – 13 mm.

Land gastropods (snails & slugs) of LA County

Catinella vermeta

Green amber snail, suboval amber snail: Native, secure



Damp substrates, under stones or logs, sometimes on dry hillsides and yucca.
Shell length = 7 – 11 mm.

Land gastropods (snails & slugs) of LA County

Discus rotundatus & *Discus cronkhitei*

Rounded snail, Rotund Disc snail & Forest Disc snail: **Introduced**



<http://www.tuin-thijs.com/dieren-engels.htm>

http://bioweb.uwlax.edu/bio210/2011/check_ryan/

Under logs, rocks, and among leaf litter: not invasive.
Shell length = 5 – 7 mm.

What you could find elsewhere in Los Angeles

Micro: *under 5 mm, often hard to see by eye*

Land gastropods (snails & slugs) of LA County

Nearctula sp. (formerly *Vertigo rowelli*)

Threaded vertigo snail: Native, vulnerable



In forests, tree branches, bark of trees, and leaf litter. *Shell length* = 2.5 – 3 mm.

Land gastropods (snails & slugs) of LA County

Vertigo ovata

Ovate vertigo snails, grassland whorl snail: Native, secure



Often at high altitudes, under damp bark and wet grass, mud, near streams.

Shell length = 2.5 – 3 mm.

Land gastropods (snails & slugs) of LA County

Sterkia hemphilli

California birddrop snail: Native, imperiled

There is very little data
about
Sterkia hemphilli
in California.



<http://www.discoverlife.org/mp/20q?search=Sterkia>

Under damp to dry plant litter.
Shell length = 1.5 – 2 mm.

Land gastropods (snails & slugs) of LA County

Hawaiiia minuscula

Minute gem snail: Native, imperiled

There is very little data
about
Hawaiiia minuscula
in California.



<http://www.discoverlife.org/mp/20q?search=Hawaiiia+minuscula&mobile=close>

Damp soil in gardens and greenhouses: Common. *Shell length = under 3 mm.*

Land gastropods (snails & slugs) of LA County

Punctum conspectum & *Punctum californicum*

Striate spot snail & California or ribbed spot snail: Native, secure

The specimen figured is a related species, *Punctum pygmaeum*. There is very little data about *Punctum conspectum* and *P. californicum*.



Among rocks, logs, and leaf litter. *Shell length* = 2 mm.

Land gastropods (snails & slugs) of LA County

Pristiloma gabrielinum

Waxy tightcoil snail: Native, critically imperiled

The specimen figured is a related species, *Pristiloma arcticum*. There is very little data about *Pristiloma gabrielinum* other than that it lives in the restricted range of the San Gabriel Mountains.



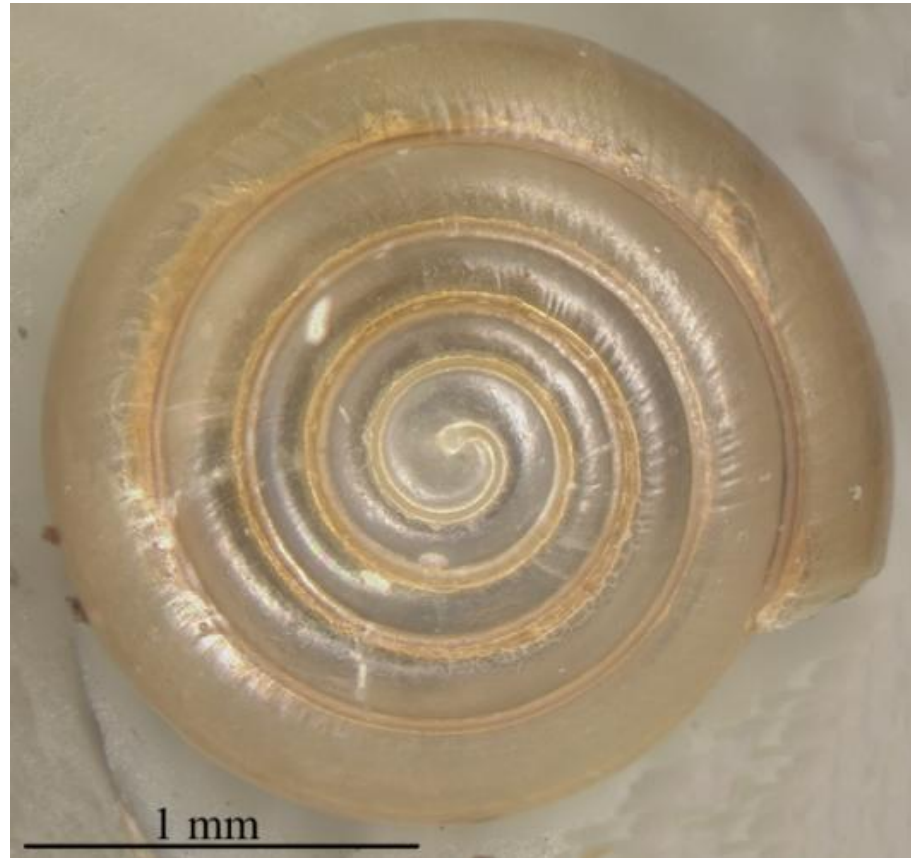
Under logs or leaves: San Gabriel Mountains endemic. *Shell length = under 3 mm.*

Land gastropods (snails & slugs) of LA County

Pristiloma chersinella

Blackfooted tightcoil snail: Native, vulnerable

The specimen figured is a related species, *Pristiloma arcticum*. There is very little data about *Pristiloma chersinella* in California.



Under logs or leaves. *Shell length = under 3 mm.*

Land gastropods (snails & slugs) of LA County

Striatura pugetensis

Northwest Striate snail, Puget Sound Zonite: Native, secure



http://academic.evergreen.edu/projects/ants/tescbiota/mollusc/key/str_pug/str_pug.htm

Damp soil and leaves of gardens and greenhouses: one of smallest species in Los Angeles. *Shell length = about 1.5 mm.*

Land gastropods (snails & slugs) of LA County

Euconulus fulvus

Brown hive snail, Tawny beehive snail, Tawny glass snail: Native, secure



Mountainous regions, near water, under wood or leaf litter.
Shell length = 3 – 3.5 mm.

Land gastropods (snails & slugs) of LA County

Cecilioides aperta

Obtuse awl snail, Pin snail: Native, secure

The specimen figured is a related species, *Cecilioides acicula*. There is very little data about *Cecilioides aperta* in California.



<http://en.wikipedia.org/wiki/Cecilioides>

Damp substrates, under leaf litter.
Shell length = 4 – 5 mm.

References

- <http://www.molluscs.at/gastropoda/terrestrial.html?/gastropoda/terrestrial/enemies.html>
- <http://www.inaturalist.org/>
- <http://www.natureserve.org/>
- <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7427.html>