



# Coqui News

Online at [www.hear.org/kisc/coqui\\_news!](http://www.hear.org/kisc/coqui_news!)

Kauai Invasive Species Committee

Work Notification

September 17-21

## Work update at Lawai infestation site

**Upcoming control work is scheduled to continue the week of September 17, 2007.** Crews will be arriving in the morning and working until around 9:30 pm.

**Field crew work is scheduled for September 17, 18, 19, 20 and 21.**

This past week, herbicide was used to control hau, guinea grass, buffalo grass, and Job's tears on the intake side of the reservoir where sections 13-17 intersect with sections 18-22. A bit of trail cutting was also accomplished in this area to enable access by spray crews through heavily foliated areas.

Citric acid was sprayed in sections 5, 6, 10, 11, 15, and 16. Lime was applied in sec-

tions 3, 5, and 7.

The crew also took some time to visit a reported coqui call in Kalaheo. One frog had been calling for several months. With the help of the homeowner's ladder, the frog was successfully captured and disposed of.

Monitoring was also conducted this past week by Kauai Environmental, Inc. adjacent to the site in Lawai. This company has a contract with the Kauai County Office of Economic Development to monitor work being performed at the infestation site. Their findings will eventually be presented to the county council as a component of the ongoing efforts focused on the eradication of coqui from Kauai.

This coming week citric acid spray work is scheduled to take



Photo of coqui from <http://www.comstation.com/orlando/>

place in sections 10-22. Hydrated lime will target sections 2, 3 and 13.

Vegetation control will also continue in section 3 targeting pothos vine, guinea grass and octopus trees.

POSTED:

Friday, September 14, 2007

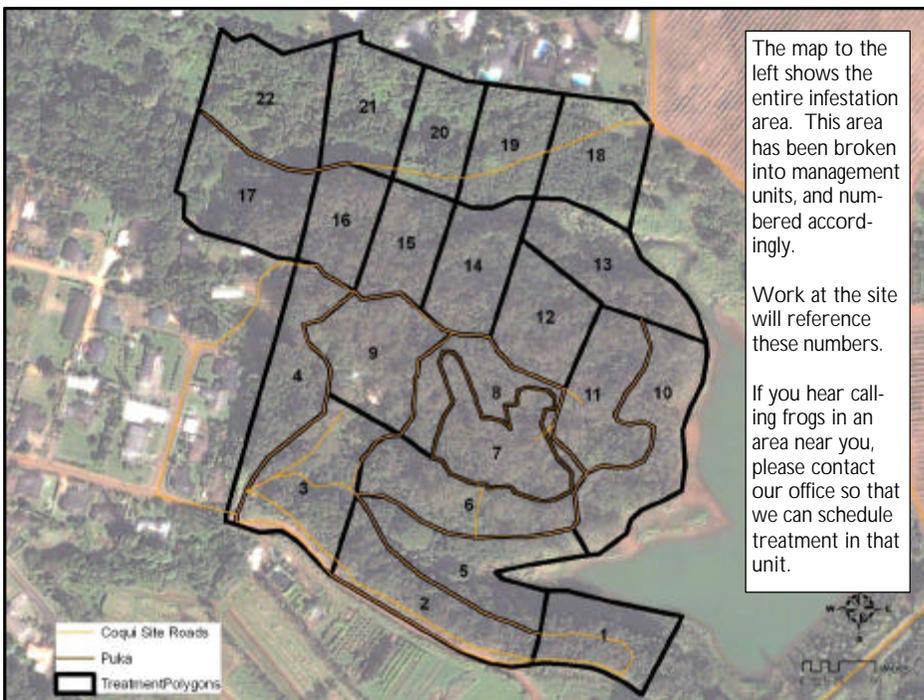
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### Contact Phone Numbers:

- **KISC:** 246-0684  
(from 7:00 am to 4:00 pm)
- **Crew Supervisor:**  
651-8781
- **Hawaii Department of Agriculture:** 274-3069
- **Pest Hotline:** 643-PEST

## Management Area Map



### Tidbit

Some frogs have developed neat ways to fool predators by stripes that appear to *split them in two!* The stripe down the center confuses predators from above by breaking up the outlines of "frog" shape to look like something different. This way, the frog or toad can blend in easier to it's background.



## Coqui and in vitro fertilization

Although much is known about the reproductive biology of pond-breeding frogs, there is comparatively little information about terrestrial-breeding frogs, a highly successful and diverse group. A study conducted by scientists from Tulane University and Stanford University investigated the activation and in vitro fertilization (INV) of eggs of the Puerto Rican *Eleutherodactylus coqui*.

These scientists were hoping that their findings would aid in the conservation effort of *Eleutherodactylus* frogs, the largest vertebrate genus. The development of such techniques would allow additional investigations into the genetic regulation

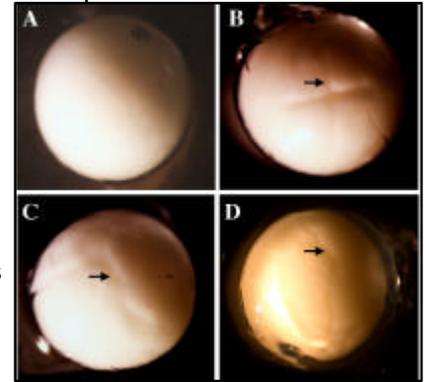
of direct development in these species and would also assist with conservation of declining populations, an important goal considering the fact that many species of *Eleutherodactylus* are declining, and several are already extinct.

Frogs have been favorite model organisms in reproductive and developmental biology for many years, mainly because of the ease with which they can be kept in captivity; their external fertilization; easily visible development in large, transparent eggs; and large numbers and ease of manipulation of their eggs. Consequently, research on frogs has often been in the vanguard of advancement in artificial reproduction techniques, and much is known about a few

model species such as the African clawed frog, *Xenopus laevis* and the North American leopard frog, *Rana pipiens*. Indeed, the first vertebrate cloned from a somatic nucleus was a frog.

Their results demonstrated efficient IVF in an internally fertilizing, terrestrial-breeding frog and may help lay the foundation for future research and conservation possibilities in this unusually large genus of amphibians.

Check out the link below to read more!



Early egg development. **A)** Untouched, unfertilized egg. The surface of the egg under the jelly coat is featureless. **B)** Sperm-activated egg at six hours post-fertilization at the four-cell stage. Note the straight, ordered cleavage pattern (arrow). **C)** Artificially activated egg pseudocleaving. Note the jagged and disorganized cleavage pattern (arrow). **D)** An egg pseudocleaving at 16 hours. This egg was not handled and did not cleave within the first ten hours after deposition. At ten hours it was poked, and started pseudo-cleavage shortly thereafter (arrow).

## Frogs in the Bible

The main reference to frogs in the Bible is in Exodus 8. This chapter begins with a description of the second plague on Egypt in response to Moses' attempt to persuade the hard-hearted Pharaoh to let God's people go.

Pharaoh refused Moses, so God sent a plague of frogs on the land. Large numbers of frogs regularly appeared after the Nile receded in mid-December. They were a symbol of fertility. But in the plague God sent, the frogs swarmed up from the Nile in such numbers that they were

overwhelming. They swarmed into houses, under beds, into ovens and into kneading bowls.

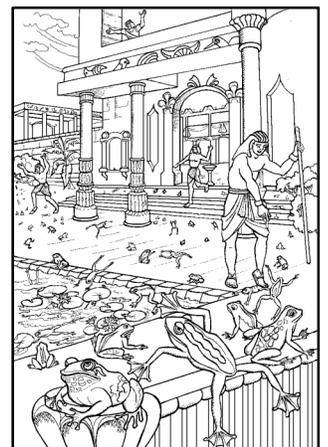
The Egyptian magicians, who tried to replicate the plagues to show their power, made matters worse. Instead of showing they had the power to get rid of the frogs, they only managed to make more frogs appear.

Another biblical reference to frogs is in Revelation 16:13. In this passage, John the Apostle has a vision of three unclean spirits like frogs coming out of the

mouth of the "dragon" (Satan). It does not say the spirits are frogs, but are like frogs — perhaps croaking clamorously as they try to spread their lies and deception one final time.

*Exodus 8:6 Aaron stretched out his hand over the waters of Egypt; and the frogs came up, and covered the land of Egypt.*

Check out <http://creationwiki.org/Frogs> for more info.



A plague of frogs

## Informational Links

Please visit the following sites for more info:

- Work Notification Policy: <http://www.hear.org/kisc/pdfs/200704coquiworknotificationpolicy.pdf>
- <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=514616>
- <http://creationwiki.org/Frogs>
- [http://www.HEAR.org/kisc/coqui\\_news/](http://www.HEAR.org/kisc/coqui_news/)