

STATUS SUMMARY OF FROG PROBLEM IN HAWAII

16 March 2001

Pestiferous Caribbean frogs of the genus *Eleutherodactylus* were introduced into Hawaii around 1988, reach extremely high densities (>8000/acre), and are causing or expected to cause numerous problems for native ecosystems, quality of life, and the nursery export industry in Hawaii (Kraus et al., 1999). Given the numerous realized and potential problems the frogs pose, efforts by DLNR and USDA staff for the past four years have been directed toward: 1) tracking the spread of the frogs in Hawaii, 2) identifying an effective toxicant that can be safely used to kill the frogs, and 3) alerting the public and the nursery industry about the risk the frogs pose and the need to restrict their spread.

Frogs are currently known from one population on Kauai, 5-6 on Oahu, 35-40 on Maui, and >150 (65 verified by staff, >75 unverified but likely) on Big Island. Most populations are currently of very limited extent, and frequently of limited numbers, but populations on the order of tens of thousands occur in some sites on Big Island. The number of populations has expanded dramatically in the past 2-3 years, largely as a consequence of continued statewide dispersal in potted nursery materials originating from infected nurseries, but also due to some intentional movement of frogs by rogue individuals on the Big Island. Despite the large number of currently known populations, the limited areal extent of most of these suggests that many, and perhaps most, can be eradicated if an effective toxicant is identified and funding is available to mount control operations. Furthermore, it is important to stress that it currently appears relatively easy to ensure that Kauai, Oahu, Molokai, and Lanai not become infested with frogs because frog populations are still either absent or very few on those islands.

Laboratory trials of over 30 chemicals have identified concentrated caffeine solution as a potentially valuable control tool for frogs. No other chemical was effective at killing frogs in the laboratory at legally acceptable levels. Field tests confirming caffeine efficacy are ongoing and early results are positive. The State is preparing an application with EPA to register caffeine for emergency use (U.S. EPA Sec. 18 registration) as a ranicide in Hawaii sometime this summer. In order to obtain this registration, the State may be required to ensure that a control program for the frogs is operational. This control need cannot be met under the existing HDOA or DLNR budgets; hence, assistance is sought from impacted agricultural and conservation stakeholders, and funds must be provided by the Legislature in order to allow control operations to proceed. A meeting was convened in late January to inform key affected stakeholders and to obtain their support for emergency-use registration of caffeine.

At this time, there is no legally-condoned way to kill these frogs, except by hand capture.