A TAILED FROG (*ASCAPHUS TRUEI*) NEST SITE IN NORTHWESTERN CALIFORNIA

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The tailed frog *(Ascaphus truei)* inhabits streams in the Pacific Northwest, Idaho, and Montana (Nussbaum and others 1983). Few nests of *A. truei* have been reported and nest sites and time of oviposition are not well known. Daugherty and Sheldon (1982) determined oviposition occurred in June in Montana populations. Brown (1989) collected females with mature eggs in early July in NW Washington. Adams (1993) discovered a nest with 27 eggs in the Oregon Coast Range in August 1991 that may have consisted of 3 different clutches, based on varying developmental stages. Nest sites of *A. truei* have not been documented previously in California.

On 16 August 1994, we discovered an *A. truei* nest site approximately 15 km N of Trinidad, Humboldt County, California in the McDonald Creek drainage. Twenty-eight eggs were attached to the underside of a boulder (44 X 28 cm) in a pool of a 2nd-order stream (4.3-m wide), 8 km inland from the Pacific Ocean. The pool (40 X 20 X 10 cm) received continuous water flow. The nest site occurred on private forest land in a SW-facing stream with 18% gradient. Water temperature was 15.9°C at 1700 hr. Overstory vegetation was primarily 45 yr-old coast redwood *(Sequoia sempervirens)* and red alder *(Alnus rubra),* with 90% canopy closure (measured with a densiometer). The nest site was 23.5 m below a road culvert and 0.7 m above the stream's confluence with a 3rd-order fish-bearing stream.

We observed the nest from 16 August through 20 September 1994. Three eggs were destroyed when the boulder was turned over, but 25 eggs remained intact in a loose string beneath the boulder. The eggs were cream-colored, each approximately 5 mm in diameter. No potential predators were seen in the pool during the observation period, but 5 larval Pacific giant salamanders *(Dicamptodon tenebrosus)* and 1 adult *A. truei* were found within the 24.2 m stream reach surveyed on 16 August 1994. The tailed frog nest site was located 0.7 m above the downstream end of the surveyed reach.

On 26 August, 8 tadpoles were observed in the pool, and 8 eggs remained attached to the boulder. On 2 September, 23 tadpoles were observed in the pool, and no unhatched eggs remained. Tadpoles were easily counted due to the depth of the pool (10 cm), substrate size (sand <2 mm in diameter), and the clarity of the water. During the observation period varying numbers (8 to 23) of tadpoles were observed in the pool, indicating movement of tadpoles between the natal pool and other regions of the stream. No attempts were made to locate tadpoles outside of the pool.

On 20 September, 5 tadpoles were measured and averaged 20 mm. The tadpoles were dark gray in color, and each had developed the characteristic white tail spot. Three tadpoles were attached to a boulder, indicating functioning oral discs. We filled a plastic container with decaying leaf litter and gravel, punched numerous holes in all sides, and anchored it in the stream with boulders. Two tadpoles were placed in the container for future measurements. On 20 October, no tadpoles were observed around the nest site. The 2 tadpoles in the plastic container were measured (22 mm and 23 mm, respectively) and released.

Oviposition by *A. truei* apparently occurs between late June and early August (Adams 1983, Daugherty and Sheldon 1982). The clutch found in California probably was deposited in late July and consisted of only 1 clutch because of the uniform developmental stage of the eggs upon discovery, the brief period over which hatching occurred, and their attachment to the boulder in 1 continuous string. Mean clutch sizes reported for inland areas range from 63 eggs in Washington (Brown 1975) to 75 eggs in Montana (Franz 1970). Although we do not know if any predation of eggs occurred before their discovery, the clutch size (N = 28) of the California nest is consistent with others reported for coastal *A. truei* (Adams 1993, Noble and Putnam 1931). This supports the hypothesis (Adams 1993) that coastal populations may have smaller clutch sizes than inland populations.

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