RANA AURORA DRAYTONII (California Red-legged Frog). **BEHAVIOR.** This frog was recently listed by the U.S. Fish and Wildlife Service as Threatened (Fed. Reg. 23 May 1996. 61(101):25813–25833). Organizations wanting to create or modify wetlands may need to control movements of frogs to reduce incidental mortality during construction, or to prevent breeding attempts in unsuitable habitats. The Cambria Community Services District, in anticipation of federal protection, wanted to prevent red-legged frogs from breeding in four newly constructed sewage percolation ponds adjacent to San Simeon and Van Gordon creeks, San Luis Obispo County, California, USA. To exclude frogs, the District attached a 1.2 m high plastic barrier (Tensar Polygrid Windbreak) to the outside of a 1.8 m high chain-link fence surrounding the 6.8 ha compound during the summer of 1995.

In January 1996, two radio-tagged frogs (Rathbun and Murphey 1996. Herpetol. Rev. 27:187–189) that we had been following outside the compound near Van Gordon Creek appeared in the only percolation pond with water. During a night survey of the pond on 14 March, we saw or heard at least 10 adult frogs, and captured two calling males (No. 1, 94 g, 99 mm SUL [snout-urostyle length] and No. 2, 84.5 g, 95 mm SUL). We found three gaps in the frog barrier at ground level (associated with gates and pipes entering the compound) where the frogs could have entered; they also could have climbed or jumped over the barrier.

To determine if frogs could pass over the barrier, we designed a simple test. We built a three-sided plywood enclosure on the outside of the Tensar/chain-link fence, ca. 20 m from the watered percolation pond. The walls were buried ca. 15 cm and were ca. 1 m high. The enclosure was tightly attached to the fence so that there were no gaps, and the top was covered with one-inch mesh (2.5 cm) chicken wire to exclude predators. We left a gap between the chicken wire and the Tensar barrier of 45 cm; if the frogs made it to the top of the barrier they could easily go through the chain-link fence into the compound. The vegetation was cleared from the inside of the test enclosure, water dishes were provided, and cement construction blocks were put in for cover.

On 18 March at ca. 1500 h, we radio-tagged frog Nos. 1 and 2 and introduced them into the enclosure. We observed them for ca. 5 h. During this time, they jumped and clung to the barrier, but they did not get higher than ca. 30 cm. When we checked on 19 March at 1730 h, we found frog No. 1 in the watered percolation pond. On the night of 18 March we captured, radio-tagged, and released two adult females in the pond (No. 3, 167 g, 119 mm SUL and No. 4, 144 g, 113 mm SUL). In addition, we caught another male (No. 5, 99 g, 100 mm SUL); he was radio-tagged and released into the test enclosure on 20 March at 1200 h. At 1000 h on 21 March, frog No. 2 was back in the percolation pond, and at 1000 h the next day frog No. 5 was found in the pond. The three male frogs passed over the frog barrier within three days.

For operational reasons, the percolation pond was drained between 16–28 April 1996, when frog Nos. 1–5 were present. On 24 April we found the damaged radio of frog No. 1 at the base of the fence, inside the compound, suggesting that he was eaten by a predator. Radio contact with frog No. 2 was lost on 27 April. Frogs 3 and 5 were found dead and desiccated at the base of the fence on the inside of the compound on 2 May and 26 April. Female frog No. 4 left the pond on 24 April and was found outside the compound, near Van Gordon Creek, on 27 April.

We do not know whether the frogs that entered or left the compound passed through the ground-level gaps in the barrier or passed over it; our experiment demonstrated that they are able to climb or jump the Tensar/chain-link barrier from the outside. Based on frog mortality we documented, it is possible that *R. a. draytonii* was unable to climb the Tensar/chain-link barrier from the inside. Our experiment demonstrates the necessity of designing, testing, and installing barriers carefully, and the possibility that barriers may cause mortality.

We thank the Cambria Community Services District, San Simeon State Park, and California Department of Transportation for their support and cooperation. Brian Hatfield, Dan Holland, and Mark Jennings reviewed early drafts of the manuscript. This work was done under Permit No. 9593 from the California Department of Game and Fish.

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