

combat, standing on their hind legs grappling with each other, scratching one another with thumb and chest spines, and finally each amplexant male grabbed the opponent by its ventrolateral region and threw it back over its head. In both cases the amplexant male then returned to amplex the female. Bloody wounds were clearly visible in the chest and lateral regions of the males involved in the combats, reinforcing the role of these spines as secondary sexual characters for use in male-male combat (Heyer 2005. *Arq. Zool.* 37:269–348). The combat behaviors observed here are similar to those described previously for *L. pentadactylus* during a similar explosive breeding event (Rivero and Esteves 1969. *Breviora* 321:1–14). Other congeners display additional calls besides their advertisement call. For example, *L. labyrinthicus* emit encounter calls probably to avoid combat with approaching males (Silva et al. 2008. *CH* 2008:1–6).

Explosive breeding of *L. savagei* is rarely seen and the interactions described here suggest that during reproductive events males of this species can display additional calls (besides their advertisement calls) that may function as encounter or aggressive calls that drive male-male combat when competing for a female. Further research is required to define the function and acoustic characteristics of these calls.

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LITHOBATES SYLVATICUS (Wood Frog). HABITAT USE. *Lithobates sylvaticus* is the second most widely distributed anuran in North America (Martof and Humphries 1959. *Am. Midl. Nat.* 61:350–389), and its habitat use reflects the environmental variation that exists across its geographic range (Semlitsch et al. 2009. *BioScience* 59:853–862). Although *L. sylvaticus* post-breeding habitat selection has been described in Missouri (Rittenhouse and Semlitsch 2007. *J. Herpetol.* 41:645–653) and Maine (Baldwin et al. 2006. *J. Herpetol.* 40:442–453; Blomquist and Hunter 2010. *Ecoscience* 17:251–264), these studies did not report the species' use of glacial erratics, or boulders. We conducted our study in Maine's Nahmakanta Public Reserved Land (45.68210°N, 69.12940°W, WGS84; 407–530 m elev.), which is located in the Quebec/New England Boundary Mountains ecoregion.

We used radio telemetry to monitor 71 *L. sylvaticus* adults between 0635 and 1820 h during 12 May 2011–05 April 2013. Thirty-one frogs were monitored in 2011, 29 in 2012, 10 during 2011–2012, and one during 2011–2013. We observed seven (2011) and 12 (2012) frogs on boulders (maximum diameter > 2 m) during weekly relocations, and four (2012) frogs on large rocks (maximum diameter < 2 m). Most frogs were found on boulders only once or twice, however, one frog was found on multiple boulders during seven of 17 relocations during 13 July–15 October 2012. Boulders typically were covered with polypody ferns (*Polypodium* spp.), mosses, or lichen and leaf litter and downed woody debris. Boulders often had steeply-sloped sides (estimated > 70°) and ranged in height from 0.6 m to 2.1 m.

Boulders provide a unique microhabitat in the study landscape. Frogs on boulders were embedded in moist moss and lichen, which likely promoted thermoregulation and moisture retention via increased moisture availability and decreased solar radiation. We relocated one frog in small pools of water formed in the depressions at the base of boulders during three relocations and within 5 m of these pools during five other relocations. These depressions held water throughout much of the summer.

Boulders may also provide refuge from predators. We commonly observed radio-tagged frogs bounding for rock and boulder crevices. Boulders are a microhabitat alternative to forest substrate litter for *L. sylvaticus* during the post-breeding period in Maine's montane landscapes. This unique landscape feature provides a moist refuge from predators not previously reported in habitat use and selection studies for this species.

Funding was provided by Maine's Sustainability Solutions Initiative, supported by National Science Foundation award EPS-0904155 to Maine EPSCoR at the University of Maine; the U.S. Geological Survey, Maine Cooperative Fish and Wildlife Research Unit; and, the Department of Wildlife, Fisheries, and Conservation Biology at the University of Maine. This is Maine Agricultural and Forest Experiment Station publication no. 3397.

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LITORIA CHLORIS (Red-eyed Tree Frog). PREDATION. Frogs are important prey items for many vertebrate and invertebrate species but predation by crustacea, such as freshwater crayfish, has rarely been reported in Australia (Pyke et al. 2013. *Herpetol. Notes* 6:195–199). In a review of the invertebrate predators of amphibians, crustacean predators included crabs and occasionally crayfish (Toledo 2005. *Herpetol. Rev.* 36:395–400; Wilson and Williams 2014. *Toxicon* 82:9–17). Here we note the predation of *Litoria chloris* (Red-eyed Tree Frog) by *Euastacus spinifer*, a freshwater spiny crayfish.

Litoria chloris is an arboreal hylid found across the subtropical to temperate forests of the east coast of Australia. Little is known of their ecology but it is suspected that they spend most of their lives foraging and living within the canopy of coastal rainforest and wet sclerophyll forests. As with many other arboreal hylid and rhacophorid anuran species, these frogs descend to the ground following heavy rain events to breed in ephemeral water bodies such as ponds, ditches, and pools (Anstis 2013. *Tadpoles and Frogs of Australia*. New Holland Publishers, Sydney. 829 pp.).

At 2230 h on 11 December 2014, following heavy rain (ca. 25 mm in less than 24 h), one such breeding event occurred in the Myall River State Forest near Bulahdelah, New South Wales, Australia. Along a 2-km stretch of unsealed road we



FIG. 1. *Euastacus spinifer* predating upon *Litoria chloris*.