

PEER-EDITED

NOTES

**MYOTIS BAT MORTALITY CAUSED BY THE PLANT
FULLER'S TEASEL (*DIPSACUS FULLONUM*)****PETER OMMUNDSEN***Salt Spring Island Community Bat Program, 456 Scott Point Drive, Salt Spring Island, British Columbia, Canada V8K 2R2,
e-mail: inquire@capewest.ca*

Abstract.—Knowledge of the risks of invasive plants to bats can inform bat stewardship practices. This note reports the deaths of a Long-eared Bat (*Myotis evotis*) and a California Myotis (*Myotis californicus*) caused by the plant Fuller's Teasel (*Dipsacus fullonum*).

Key Words.—bats; British Columbia; conservation; invasive plants; teasel

Bat populations in North America have been seriously impacted by White Nose Syndrome (a fungal infection), and bats worldwide face a multitude of other threats, including pesticides, habitat loss, wind farms, heat stress, harassment from humans, and invasive species (Frick et al. 2020). In response, bat conservation programs have encouraged bat-friendly communities (British Columbia Community Bat Program. 2018. Bat-friendly communities: a guide for managing and enhancing bat habitat in British Columbia. British Columbia Community Bat Program, Canada. 60 p. Available from <https://www.bcbats.ca/images/BC-Bat-friendly-Communities-Guide-2018.pdf> [accessed 10 June 2020]) that promote bat stewardship education and habitat protection strategies that can be applied by everyday citizens. One such strategy is to remove objects near bat roosts that may cause entrapment, such as open barrels of water, open pails, old tires, barbed wire coils, mouse traps located on high ledges, and ornamental and exotic plants that are spiny or adhesive. Examples of plants entrapping bats include Desert Rock Nettle (*Eucnide urens*) trapping a California Leaf-nosed Bat (*Macrotus californicus*; Stager 1943), rose thorns trapping a Brown Big-eared Bat (*Plecotus auritus*; Venables 1944), Spanish Moss (*Tillandsia usneoides*) strangling a Seminole Bat (*Lasiurus seminolus*; Dunaway 1960), cacti impaling the California Myotis (*Myotis californicus*; Gronau 2006) and the Serotine Bat (*Eptesicus serotinus*; Merzlikin 2017), adhesive spines of tick trefoil (*Desmodium* sp.) entangling the Diminutive Serotine Bat (*Eptesicus diminutus*; Jacomassa et al. 2017), thorns of Buckthorn (*Prunus spinosa*) trapping the Noctule (*Nyctalus noctula*), and sticky Horse Chestnut buds (*Aesculus hippocastanum*) snaring the Brown Big-eared Bat (*Plecotus auritus*; Merzlikin 2017). Burdock (*Arctium* spp.) has trapped the Little Brown Bat (*Myotis lucifugus*; Lyon 1925; Verts 1988), Eastern Red Bat (*Lasiurus borealis*; Johnson 1933), Long-eared Bat (*Myotis evotis*; Hendricks et al. 2003), Silver-haired Bat (*Lasionycteris*

noctivagans; Norquay et al. 2010), and pipistrelles (*Pipistrellus* sp.; Merzlikin 2017).

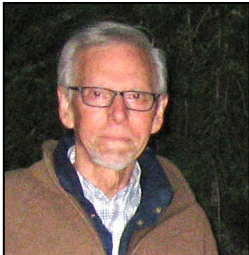
I report here a case in which the plant Fuller's Teasel (*Dipsacus fullonum*) caused the death of two bats, a Long-eared Bat and a California Myotis, on Salt Spring Island, British Columbia, Canada. Teasel is an introduced Eurasian biennial flowering plant that inhabits roadsides and meadows in British Columbia (Douglas et al. 1999). The egg-shaped capitulum, or flower head inflorescence, can be several centimeters in length and includes an array of protruding spines formed from involucre and receptacular bracts. The teasel plants were situated within 20 m of a bat roost, and I observed the two dead bats together on teasel capitula in September 2018, with spines penetrating the patagia at multiple sites. The Long-eared Bat may have contacted the teasel while gleaning an insect. Faure and Barclay (1994) observed that this bat species while gleaning did not produce a feeding buzz and often did not employ echolocation, a lack of which would impair the ability of the bat to resolve the teasel spines. The California Myotis is an aerial hawk that flies close to vegetation (Krutzschn 1954) and may have used the teasel as a perch.

The presence of two bats of different species together is not unexpected as netted bats have been observed to emit distress calls that appear to attract other species (Dechmann and Safi 2005). I have observed the presence of teasel near a number of large bat colonies, and, unfortunately, the cultivation of teasel is promoted by conservation organizations as a means of attracting birds. While the overall risk to bats is unknown, it may be prudent to remove teasel from areas of high bat density, such as in the vicinity of large bat roosts.

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LITERATURE CITED

- Dechmann, D.K., and K.Safi. 2005. Studying communication in bats. *Cognition, Brain, Behavior* 9:479–496.
- Douglas, G.W., D.V. Meidinger, and J. Pojar (Eds.). 1999. *Illustrated Flora of British Columbia*. Volume 3: Dicotyledons (Diapensiaceae Through Onagraceae). British Columbia Ministry of Environment, Lands & Parks and British Columbia Ministry of Forests, Victoria, Canada.
- Dunaway P.B. 1960. Seminole Bat strangled by Spanish Moss. *Journal of Mammalogy* 41:400.
- Faure, P.A., and R.M.R. Barclay. 1994. Substrate-gleaning versus aerial-hawking: plasticity in the foraging and echolocation behaviour of the Long-eared Bat, *Myotis evotis*. *Journal of Comparative Physiology A* 174:651–660.
- Frick, W.F., T. Kingston, and J.A. Flanders. 2020. A review of the major threats and challenges to global bat conservation. *Annals of the New York Academy of Sciences* 1469:5–25.
- Gronau, C.W. 2006. Cactus traps California Myotis in British Columbia. *Wildlife Afield* 3:14–15.
- Hendricks, P., J. Carlson, and C. Currier. 2003. Fatal entanglement of Western Long-eared Myotis in Burdock. *Northwestern Naturalist* 84:44–45.
- Jacomassa, F.A., S.M. Pacheco, J.M. Miranda, and K.P. de Oliveira. 2017. Bats found entangled in natural and artificial traps. *Mammalia* 82:65–67.
- Johnson, P.B. 1933. Accidents to bats. *Journal of Mammalogy* 14:156–157.
- Krutzsch, P.H. 1954. Notes on the habits of the bat, *Myotis californicus*. *Journal of Mammalogy* 35:539–545.
- Lyon, M.W., Jr. 1925. Bats caught by Burdocks. *Journal of Mammalogy* 6:280.
- Merzlikin, I. 2017. Cases of bat deaths associated with plants. *Proceedings of the Theriological School* 15:136–138.
- Norquay, K.J., A.K. Menzies, C.S. McKibbin, M.E. Timonin, D.E. Baloun, and C.K. Willis. 2010. Silver-haired Bats (*Lasionycteris noctivagans*) found ensnared on Burdock (*Arctium minus*). *Northwestern Naturalist* 91:339–342.
- Stager, K.E. 1943. California Leaf-Nosed Bat trapped by desert shrub. *Journal of Mammalogy* 24:396.
- Venables, L.S.V. 1944. Letter to the editor. *Journal of Mammalogy* 25:320.
- Verts, B.J. 1988. Two bats caught on a plant. *Murrelet* 69:36–38.



PETER OMMUNDSEN is a Regional Coordinator with the British Columbia Community Bat Program. He studied Wildlife Biology at the University of British Columbia, Vancouver, Canada, and was employed for 32 y with the Wildlife and Environmental Science Programs at Selkirk College, Castlegar, British Columbia, Canada. (Photographed by Arlene Ommundsen).