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## Telemetry

Owls can spend most of their time in a small area of their home range and rarely visit other parts. To track owls and determine point locations inside their home ranges at different times of the night, researchers attach small battery-powered transmitters that emit low-powered signals via a small antenna. Through radio-tracking researchers can also determine home range shape and size, and how often owls use certain parts of their home range compared to others. Researchers glue small acrylic-covered transmitters to the central tail feathers, or tie them to the back of an owl with a string harness that fits like a vest – a wing goes through a right and left loop, and the radio is tied and glued behind the neck and midway between where the wings emerge. This point between the wings is the centre of gravity for an owl and a radio attached there will not impede flight. Built into the harness is a weak link that sits over the breastbone; made of a single thread, it is designed to break if the transmitter or harness tangles in foliage (see Figure 8.1). The radio detaches if it snags on bushes or thorns, and this is important because Boobooks hunt birds and insects in bushes, and in the forest canopy.

Radios used with Boobooks weigh about 5.4 g and the harnesses about 1.0 g, making 6.4 g of added weight, 2.4 per cent of the body weight of a 270 g male Boobook, and 1.9 per cent of the body weight of a 340 g female Boobook. Batteries last 10 to 12 months. These radios give a regular beep heard through a receiver and earphones attached to a directional hand-held antenna. The beep is louder when the antenna is pointed towards the owl, and weaker or silent when it is pointed away. The signal can bounce in hilly or wooded country and this reflection or refraction of the signal can create false bearings, so you need to walk or drive to