Caution needed in use of playbacks to census bird populations

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VOCAL RESPONSE TO playbacks of taped bird calls has been used as a method of determining population numbers of several species (Bohl 1965; Stirling and Bendell 1966; Dow 1970; Braun *et al.* 1973; Glaun 1974; Bennett 1978; and others). Although several studies have shown such a method to produce results comparable to those obtained by more laborious census techniques, responses to playbacks can distort results in some cases. In a recent example, Springer (1978) showed a distortion in sex ratios in census results from playback experiments with Great Horned Owls (*Bubo virginianus*). In two sets of results, female owls represented 80 and 100 percent of non-responders, thereby incorrectly increasing (and distorting) the proportion of males in the population.

Seasonal variation in response to playbacks contributes another possible distortion factor. Recently, I studied responses by male Blue Grouse (*Dendragapus obscurus*) to playbacks of various conspecific calls on Vancouver Island, British Columbia (McNicholl 1978). In these experiments, vocal response to the "whinny" female call (Stirling and Bendell 1966) was negative in March, gradually increased in April, peaked in May, and declined again in June and July (Fig. 1). Response to male song ("hooting") was also seasonal, with no response in March, response vocally only in mid April, and response both vocally and by aggressive approach in late April and May (Fig. 1). These experiments were conducted with individually known (color banded) territorial males as subjects. However, during the period in which response by territorial adults was vocal only, birds thought to be yearlings and non-territorial adults were found singing within the territories of resident males. At this time, such birds responded vocally to the "whinny" call, but at times when hooting would provoke attack by resident males, such birds did not respond vocally except to sing quietly near the playback if the resident male did not arrive. Thus, early in the season (mid- to late April) playbacks of "whinny" calls could result in more birds hooting than were resident in a given area. Results in May would produce figures comparable to the actual number of resident males. Results in early April or late in the season would result in numbers lower than the number of resident males present.

Harju (1974) also found a variable response to the "whinny" in males of an inland race of the Blue Grouse. Similarly, Braun *et al.* (1973) and Glaun (1974)

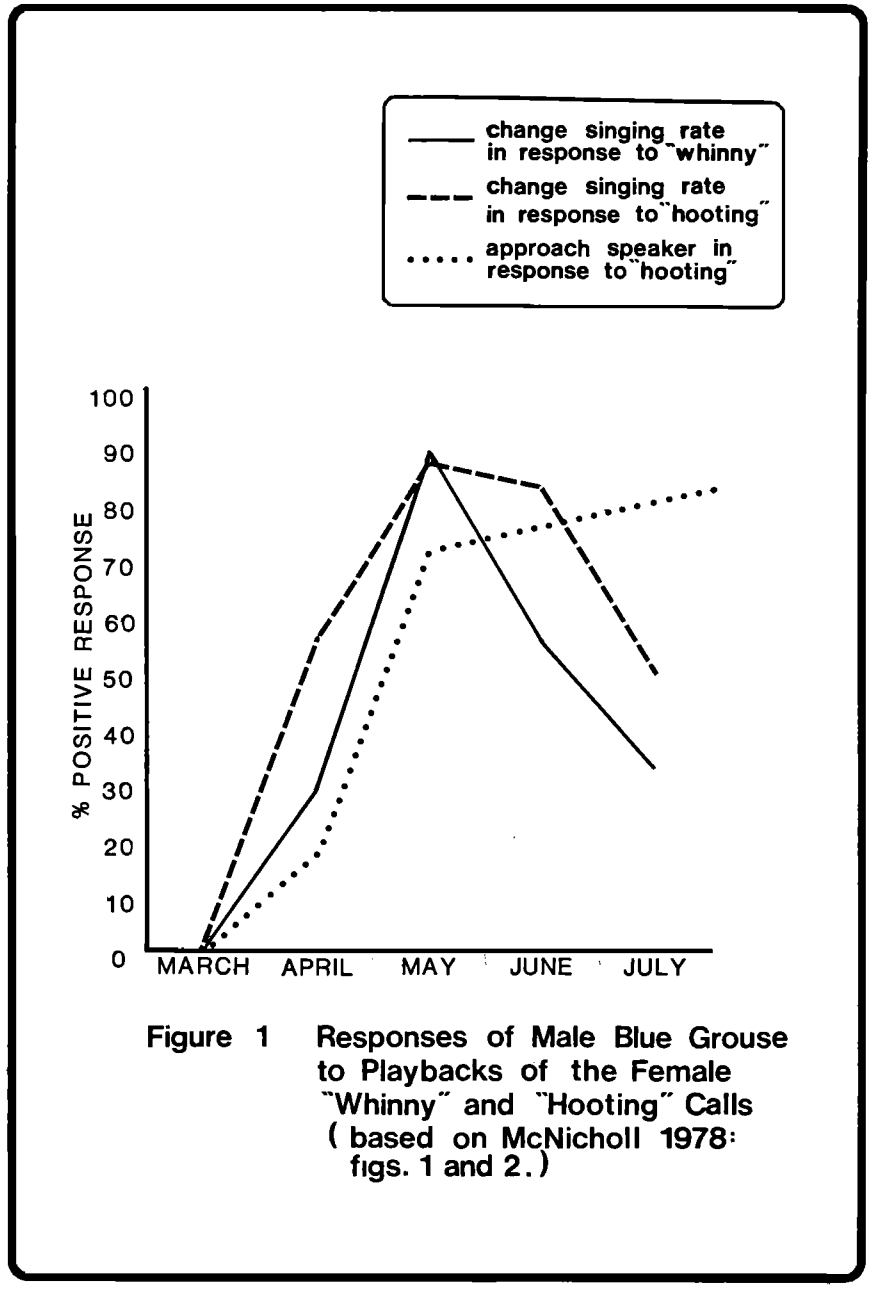

Figure 1 Responses of Male Blue Grouse to Playbacks of the Female "Whinny" and "Hooting" Calls (based on McNicholl 1978: figs. 1 and 2.)

found seasonal variation in responses to calls of White-tailed Ptarmigan (*Lagopus leucurus*) and rails respectively.

Thus, playbacks can be very useful in censusing bird populations, but seasonal variation in response must be determined before results of such experiments can be assessed properly.

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Sooty Tern nest found near Cape Lookout, N. C.

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ON JUNE 16, 1978, while surveying colonial waterbird nesting colonies, we found a single Sooty Tern (*Sterna fuscata*) and its nest on Morgan Island in the estuary north of Cape Lookout, N. C. We located the nest by watching until the bird flew down to it.

In 1978, Morgan Island consisted of a dome of relatively bare spoil material (approx. two hectares) enclosed by a sand dike and a surrounding, low-elevation fringe of marsh and shrub vegetation. Several thousand Royal Terns (*Thalasseus maximus*) and a few hundred Sandwich Terns (*S. sandvicensis*) nested on the dike and dome and several thousand Laughing Gulls (*Larus atricilla*) nested in the marsh fringe. The Sooty Tern nest was not among those of the other terns, but was located in the marsh fringe among nests of the Laughing Gulls.

Like many of the Laughing Gull nests, the Sooty Tern nest was not visible from directly above, as it was placed beneath a clump of *Spartina patens;* however, unlike the relatively well-constructed gull nests, it consisted only of a very slight depression with a few dried *Chenopodium ambrosioides* leaves loosely arranged around it. There was one egg. It was similar in size to those of the Laughing Gulls, and in general appearance, except that the background color was much lighter.

Fussell and Hader returned to the colony June 25, but found the nest apparently depredated. Fragments of the egg shell were found one m from the nest and no adult bird was seen during the 15-min stay. No Sooty Tern was seen during visits to the island in July.

This is the first confirmed nesting of the Sooty Tern in North Carolina, and, along the East Coast of the United States, the only confirmed nesting north of the Dry Tortugas, approx. 1300 km SSW. However, Sooty Terns have been observed in the nesting season at Morgan Island (or nearby Rat Island, a spoil island 1.5 km S) on previous occasions [*Chat* 23:63 (Morgan Island); 25:63 (Morgan Island); 36:114 (Morgan Island, but cited as Shackleford Bank); 41:15 (Morgan Island, but cited as Cape Lookout); 42:18 (Rat Island, but cited as near Beaufort)]. Probable nesting was indicated for the first record, which was in 1959.

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