

Of course, Lisa Gould's departure for North Carolina to be closer to her family will be a huge loss to Rhode Island, but she has shown us by her example how to do what needs to be done and has helped provide us with several strong institutions through which to carry on her work. We can look forward to the first Lisa Lofland Gould Native Plant Program in the spring.

Rhode Island Collections: URI Marine Animal Sounds in the Macaulay Library's

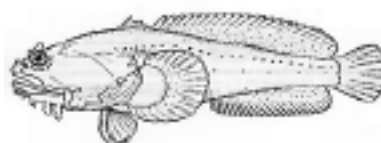
B Y R O B E R T D . K E N N E Y

When I arrived as a new graduate student at the University of Rhode Island's Graduate School of Oceanography (GSO) in September 1978, I expected to start on a thesis research project on marine mammal vocalizations. My thesis advisor, Howard E. Winn (1926–1995), was a world authority on marine animal sounds (e.g., Winn 1964) and had published some of the early work on Humpback Whale songs (Winn and Winn 1978). I came to URI with some experience in marine acoustics, having spent four years in the Navy during an extended break in my undergraduate education—listening to Soviet submarines, and the occasional whale, while flying patrols high above the North Atlantic. But research funding in Howard's lab took a sharp turn in another direction, and I ended up studying whale ecology instead of whale acoustics.

When Dr. Winn joined the GSO faculty in 1966 from the University of Maryland, there was already a vigorous acoustic research program underway here. GSO's predecessor institution, the Narragansett Marine Lab, had been founded in the 1930s by Charles J. Fish (1899–1978) and his wife Marie Poland Fish (1902–1989). Marie Fish was an expert on fish sounds, a topic that was of great interest to the Navy with the advancing development of sonar. After World War II, she and electronics engineer William H. Mowbray had been funded by the Office of Naval Research to record and catalog fish sounds. After 20 years of recording, they published the classic compilation of descriptions and sonograms of sounds from 153 species of North Atlantic fishes (Fish and Mowbray 1970). Another collaborator in that lab was Paul J. Perkins, who retired from the Navy as a chief sonarman in 1962 and came to work as a technician for Marie Fish. The group eventually expanded their research from

fish sounds to marine mammal sounds (e.g., Perkins et al. 1967). Marie Fish retired and Howard Winn continued the acoustic research program, with Paul Perkins remaining on as his technician into the early 1980s. You might still come across Paul dropping a hydrophone into Narragansett Bay or the Narrow River (Perkins 2001), or recording bird songs almost anywhere in South County.

The stars and planets all aligned in 2001. The Library of Natural Sounds at the Cornell Laboratory of Ornithology (now called the Macaulay Library) had received some sizeable grants to locate, conserve, digitize, and archive existing collections of acoustic recordings of fishes and marine mammals. Rodney Rountree from the University of Massachusetts was developing his own research program on sound-producing fishes, and was inquiring about the Fish & Mowbray and Winn collections. I was being forced to deal with several thousand tape recordings as Howard Winn's former office, lab, and storage spaces were being re-assigned. Although many of Marie Fish's original recordings had been lost in a fire at the Bay Campus in 1959, some remained with Howard's extensive collection. There were boxes and loose tapes stacked in my lab, in the campus storage barn, and in a trailer that was neither heated in winter nor air-conditioned in summer, so the surviving recordings were in danger of serious degradation. Then GSO assistant dean Ken Hinga bumped into Paul Perkins in town, and Paul told him that the original reel-to-reel tapes of all the sounds included in Fish & Mowbray had been stored in a vault on the Bay Campus. Ken checked into it—30 years later, the tapes were still there. Finally, the Pell Library staff came upon an unopened case of Fish & Mowbray books that they were going to throw away.



Oyster toadfish (*Opsanus tau*) are extremely vocal and were studied extensively by Howard Winn and several of his graduate students. (drawing by Louella E. Cable from Bigelow & Schroeder 1953)

Ken Hinga funded a student to copy all of the Fish & Mowbray tapes (just try finding a good reel-to-reel tape deck these days) into computerized sound files and then onto CD's. The 2-CD sets were put up for sale to recover the costs, along with that last remaining case of books. The CD's can still be purchased (<http://www.gso.uri.edu/fishsounds>), although the books are long gone. Rod Rountree convinced Rhode Island Sea Grant to fund a small project to “rescue” the GSO sound collection (Rountree et al. 2002). We brought Paul

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Perkins out of retirement (his third one, because he'd gone back to work at the Naval Undersea Warfare Center after leaving GSO) to catalog all of the recordings that we could find. When he finished, all of the tapes, including the Fish & Mowbray originals, were packed up and shipped to Ithaca. Macaulay Library staff then set to work conserving the sometimes-fragile recordings and making permanent digital copies for archival.

Macaulay Library, with the world's largest collection of animal sound recordings, is in the process of expanding their coverage of fishes, amphibians, and mammals. All of the surviving fish and marine mammal sounds that were recorded over more than 50 years by Marie Fish, Bill Mowbray, Paul Perkins, Howard Winn, and all their students and collaborators are now permanently archived as a significant component of Macaulay's Marine Collection. Assistant Curator Shelagh Smith and two other full-time staff members are responsible for the Marine Collection. According to the first issue of their "Marine Collection Newsletter," as of last spring it included 4,131 specimens and 667 hours of recordings from 57 marine mammal species and 202 fish species. The beta version of the Marine Collection website can be accessed at <http://www.animalbehaviorarchive.org>. In addition to searching the archive and playing the sounds, you can access on-line spectrogram and waveform visualization tools. Their long-term plan is to provide unlimited free access to the collection for registered research users.

The "Marine Collection Newsletter" is distributed via email; at present only the first issue (of three to date) is on-line (<http://mlsource.ornith.cornell.edu/marine/newsletters/MCNIssue1.pdf>). Email Shelagh Smith (sas223@cornell.edu) to be added to the mailing list. Anyone who would like to contribute collections of animal sounds should contact Shelagh by email or by telephone (607-254-2492). The Library will lend a 160-gigabyte external hard drive to facilitate transfer of large digital collections. (See "Weaving the Web" on page 20 for more about on-line sound resources from the Macaulay Library and other sources.)

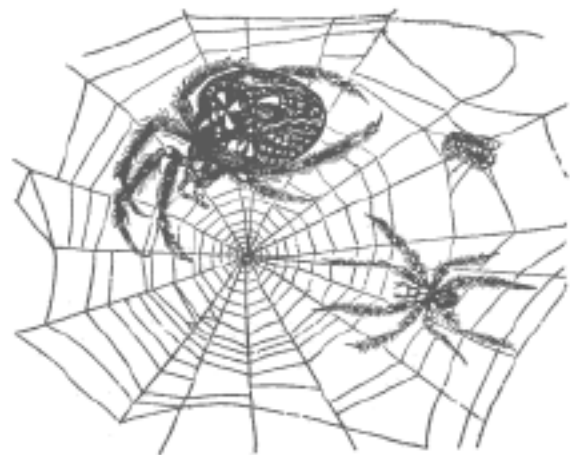
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Weaving the Web: Electronic Resources



Animal Sounds: The Macaulay Library at the Cornell Laboratory of Ornithology houses the world's largest collection of animal sound recordings, with more than 160,000 individual recordings, plus a growing collection of videos. The collection has historically focused on birds, and now includes about two-thirds of the world's bird species and an increasing number of fish, amphibian, and mammal species (see the "Rhode Island Collections" article on page 19 for more about their Marine Collection). The entire collection is available for use for educational, research, or commercial purposes; users are charged a nominal fee that offsets some of the costs of curation. On the website you can search the collection, play sample recordings and videos, download sounds of some common birds, and shop for audio field guides. <http://www.birds.cornell.edu/macaulaylibrary/>