## Highlights of Jug Bay Surveys

- Species diversity, activity periods, and habitat use of frogs and toads at the Sanctuary are as expected and have remained stable.
- The occurrence of all species of frogs and toads identified during calling surveys has been verified by capture in traps or encounters during visual searches, such as the annual Great Herp Search.
- The best place to hear intense and diverse calling activity throughout the season is the Beaver Pond, upstream from the mouth of Two Run Creek. Next best is at the north end of the Marsh Boardwalk, although it is less reliable.
- Individuals of one species, the Eastern Spadefoot Toad *Scaphiopus holbrooki*, have been captured (frequently) and heard calling (very infrequently), but not during a formal calling survey. These toads are explosive breeders, and their annual activity may only last 24 to 48 hours. The rest of the year they are quiet and rarely, if ever, casually encountered.
- Both subspecies of Gray Treefrog *Hyla versicolor* and *H. chrysoscelis* have been heard during surveys, with the former being the most numerous and active.
- The Green Frog *Rana clamitans*, which is the most widespread frog in the Sanctuary and possibly the most abundant, is heard calling over a longer period than any other amphibian.
- Second in distribution and abundance is the American Toad *Bufo americanus*. These highly adaptive animals use a variety of habitats.
- One recent addition to the Sanctuary's amphibian list, heard on surveys and captured on film, is the Green Treefrog *Hyla cineria*. This species, first heard and seen in July 1998, has been heard each year since. Prior to that time, it was known to breed further south in the Cattail marshes along the Patuxent River, but there were no records of this frog in the immediate Jug Bay area.
- One species we are still looking, and listening, for is the Southeastern chorus frog *Pseudacris triseriata*. This species is primarily found on the Eastern Shore, but early this year at Franklin Point Park, another Anne Arundel County park on the Chesapeake Bay, I heard them calling, and found eggs.

# Snore, Quack, Plunk

## *Beauty (and Truth) in Ear of Beholder*

by Mike Quinlan

In this area, most amphibian activity begins in early spring, when many animals migrate to vernal pools and permanent water bodies to mate and lay eggs. Much like birds, frogs and toads have vocalizations that are unique to each species. Usually only the males call; they do so to establish territory, to advertise their strength and vigor as potential mates, and to attract females. This calling activity, which normally takes place at night when the temperature is above 40˚F, is often triggered by the first warm spring rain.

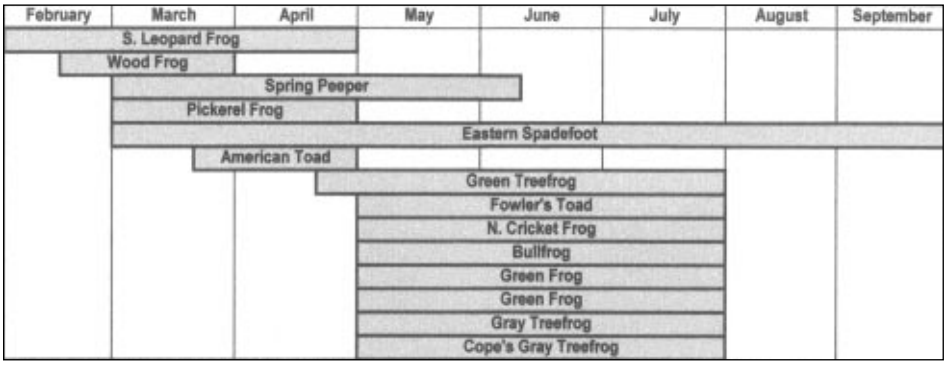
Since amphibians are susceptible to pollution and habitat degradation, their relative abundance, distribution, and activity can provide good indications of environmental health. With frogs and toads, such information can be gathered rapidly and easily by conducting calling amphibian surveys. We can identify species, activity period, and distribution (habitat), as well as estimate abundance by just listening to their calls. By comparing our results with long-term data sets on each species, we can detect changes that have occurred over time. This may, in turn, indicate where problems exist and lead to further research to determine possible causes.

We initiated Frog and Toad Calling Surveys at the Sanctuary in the spring of 1998, and have conducted them on a regular basis during spring and summer each year since then. Our program was initially modeled after surveys conducted as part of the Marsh Monitoring Program of the Long Point Bird Observatory in Ontario, Canada. We have gradually brought our surveys in line with those conducted under the North American Amphibian Monitoring Program (NAAMP), which is coordinated by the Patuxent Research Refuge. We follow the same protocol, but the geographic scope of our survey route is much less than that of the standard NAAMP calling amphibian survey route.

# Opportunities

Each spring, Karyn Molines conducts a Frog and Toad Identification Workshop. People who attend the workshop learn about the habits, physical characteristics, and calls of the various species found at the Sanctuary. Frog and Toad Calling Surveys are usually conducted every other Friday, March through August, starting after sunset and lasting for approximately two hours. We welcome your participation. Call the Sanctuary for upcoming dates.

### Calling Phenology of Frogs and Toads in Maryland




based on Harris, H.S., 1975. Bulletin of the Maryland Herpetological Society 11(3), with some changes by Don Forester