Abstract

Survey sites with American bullfrog, Blanchard’s cricket frog, Cope’s gray treefrog, green frog, pickerel frog, spring peeper, and wood frog were above their long-term averages. Of the 12 Wisconsin anuran species, seven showed an increase in percent occurrence in 2018 from the 2017 levels. The number of frog survey routes that were run decreased from 155 in 2017 to 134 in 2018.

Introduction

The Wisconsin Department of Natural Resources (WDNR) has coordinated a volunteer frog and toad survey since 1984. The survey arose from concerns about declines in populations of some frog species and was endorsed and expanded by the WDNR Surveys Committee in 1990. Wisconsin has 12 anuran species. One species (Blanchard’s cricket frog) is endangered and two species (mink frog and pickerel frog) are included on the Natural Heritage working list as "special concern". In general, anurans are considered to be good indicator species for the habitats where they are found. In 2008, the Society for the Study of Amphibians and Reptiles changed the common names of five species; bullfrog to American bullfrog, northern cricket frog to Blanchard’s cricket frog, eastern American toad to American toad, eastern gray treefrog to gray treefrog, and northern spring peeper to spring peeper. Additional species had scientific name changes as well. Recent genetic sampling in cricket frogs of the genus Acris documents the Blanchard’s cricket frog (Acris blanchardi) as a distinct and separate species and not a subspecies of the northern cricket frog (Acris crepitans; Gamble et al. 2008).

Methods

Survey routes are distributed statewide, with a goal of two survey routes in each county of Wisconsin (Figure 1). Survey routes consist of 10 sites which are monitored three times yearly, 8-30 April, 20 May-5 June, and 1-15 July. Surveys are started at dusk on evenings with wind velocities of seven miles per hour or less. Water temperature is recorded at each stop where possible. The occurrence of each frog species is determined at each site by presence or absence of their call. The abundance of each species is ranked by the relative number of calling individuals. Stops with species calling in which individuals can be counted and there is no overlap in calls has an abundance rank of 1. When calls of individuals can be distinguished but there is some overlapping of calls the abundance rank is 2. When calls are constant, continuous and overlapping (full chorus), the abundance rank is 3. Percent occurrence is determined for each species specific geographic range and peak calling periods. Survey data are analyzed using the Statistical Analysis System (SAS). The calling index for each species was summed to provide an index to the route population each year. These route populations are regressed on time to create a species population trend.
**Results**

The number of survey routes decreased from 155 in 2017 to 134 in 2018. Observers decreased from 157 in 2017 to 132 in 2018 (Figure 2). In 2018 start dates were delayed for the first run due to later than normal spring weather; southern routes ran from 8 April - 7 May, and northern routes 8 April - May 14.

Of the 12 anuran species, seven showed an increase in percent occurrence in 2018 from 2017 levels. These were the Cope's gray treefrog, gray tree frog, mink frog, leopard frog, pickerel frog, spring peeper, and wood frog (Figure 3). Two species were below the previous year’s occurrence levels and long-term mean; American toad, and boreal chorus frog. Population trends, based on the call index, for each anuran species can be reviewed in Figure 3.

**Literature Cited**

Figure 1. The number of frog survey routes run in each county in 2018.

Figure 2. The numbers of observers and frog routes completed, 1984-2018.
Figure 3. Percent occurrence and abundance of the 12 anuran species in Wisconsin, 1984-2018.
Figure 3. Continued.
Figure 3. Continued.
Figure 3. Continued.
Figure 3. Continued.
Figure 3. Continued.