

Frog and Toad Survey 2008

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Abstract

Survey sites with northern cricket frog, American bullfrog, chorus frogs (analysis combined for these two species), American toad, gray treefrog, green frog, spring peeper, and wood frog were above their long-term averages. Of the 12 anuran species, seven showed an increase in percent occurrence in 2008 from the 2007 levels. The number of frog survey routes that were run decreased from 83 in 2007 to 76 in 2008. This number falls well short of our goal of two routes per county.

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 (northern cricket frog) is endangered and three species (boreal chorus frog, American bullfrog, 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 naming convention of five species; bullfrog to American bullfrog, Blanchard's cricket frog to northern cricket frog, eastern American toad to American toad, eastern gray treefrog to gray treefrog, and northern spring pepper to spring peeper.

Methods

Survey routes are distributed statewide, with a goal of two survey routes in each county of Wisconsin. 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 less than eight miles per hour. 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 song. 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 to 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 83 in 2007 to 76 in 2008. Observers decreased from 87 in 2007 to 78 in 2008 (Fig. 1). The number of routes run in each county is still well below our goal of two per county (Fig. 2).

Of the 12 anuran species, seven showed an increase in percent occurrence in 2008 from 2007 levels. These were the northern cricket frog, American bullfrog, American toad, green frog, mink frog, spring peeper, and wood frog (Fig. 3). The chorus frogs and gray treefrog were above the long-term mean, but down from the 2007 occurrence levels. The Cope's gray treefrog, northern leopard frog, and pickerel frog were below the previous year's occurrence levels and the long-term mean. Population trends, based on the call index, for each anuran species can be reviewed in Figure 3.

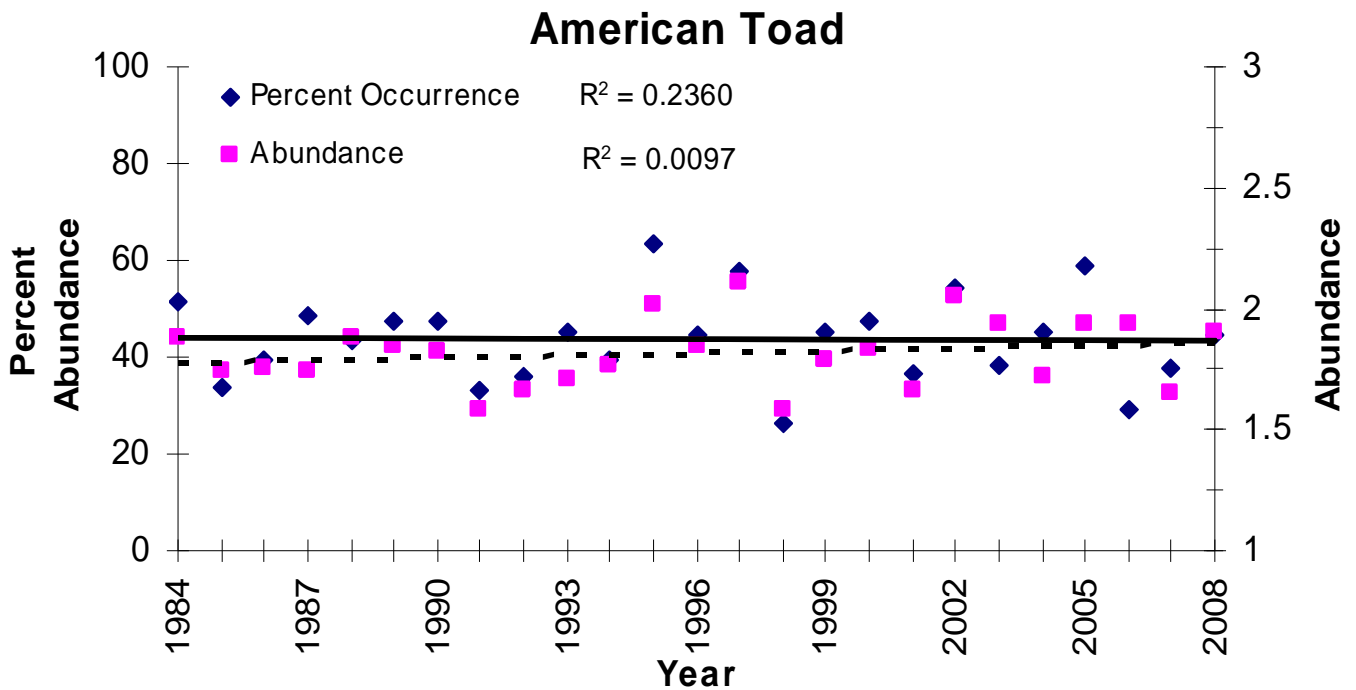
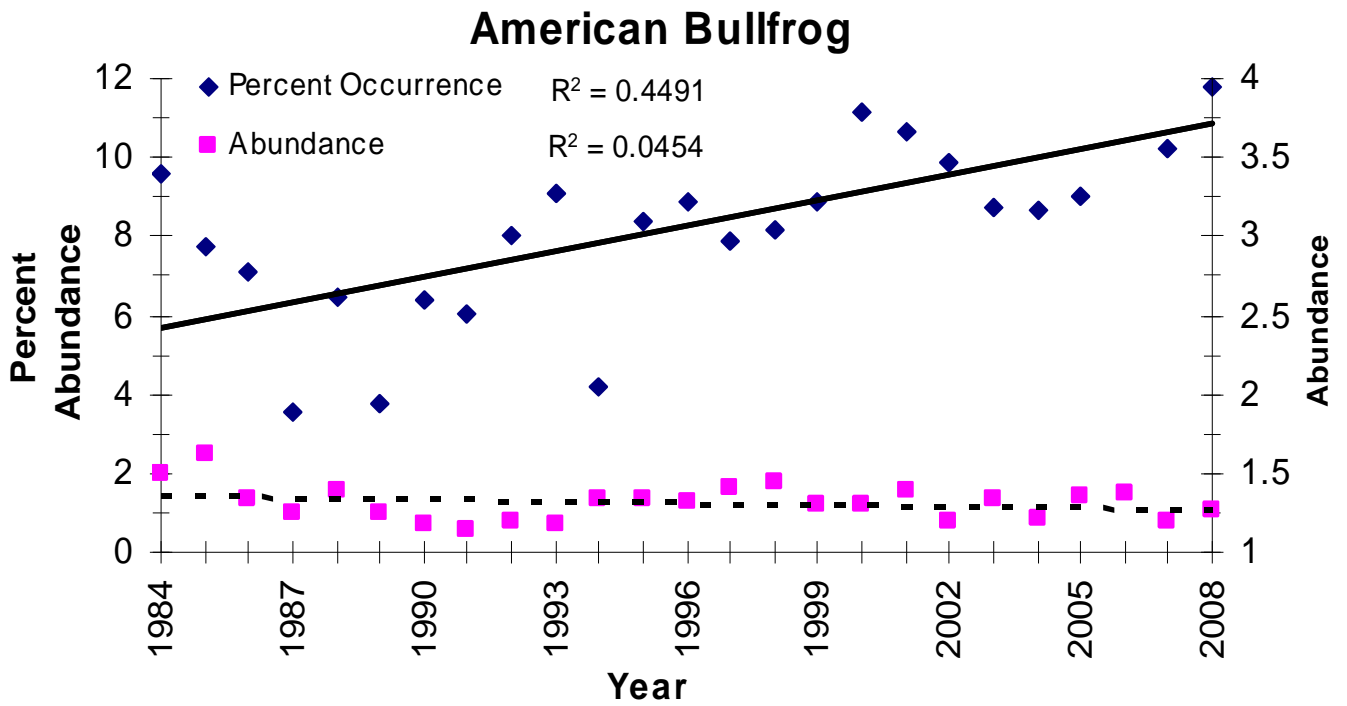


Figure 3. Percent occurrence and abundance of the 12 anuran species in Wisconsin, 1984-2008.

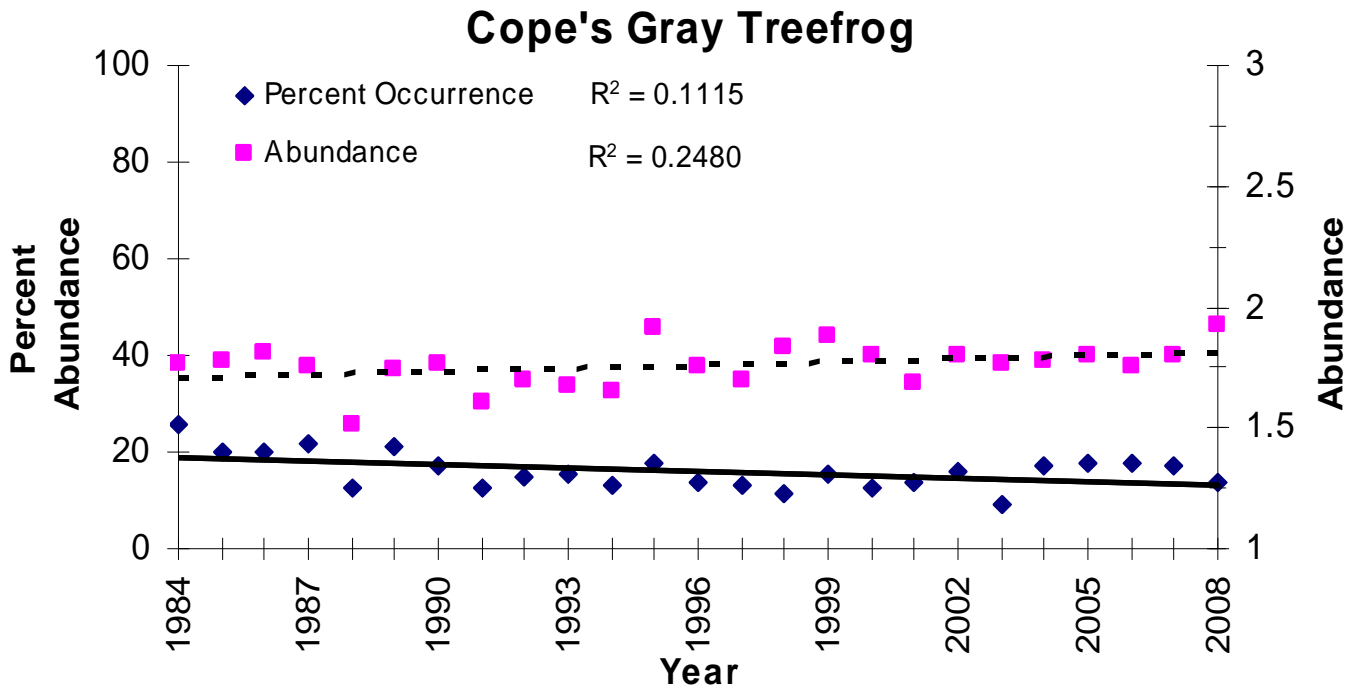
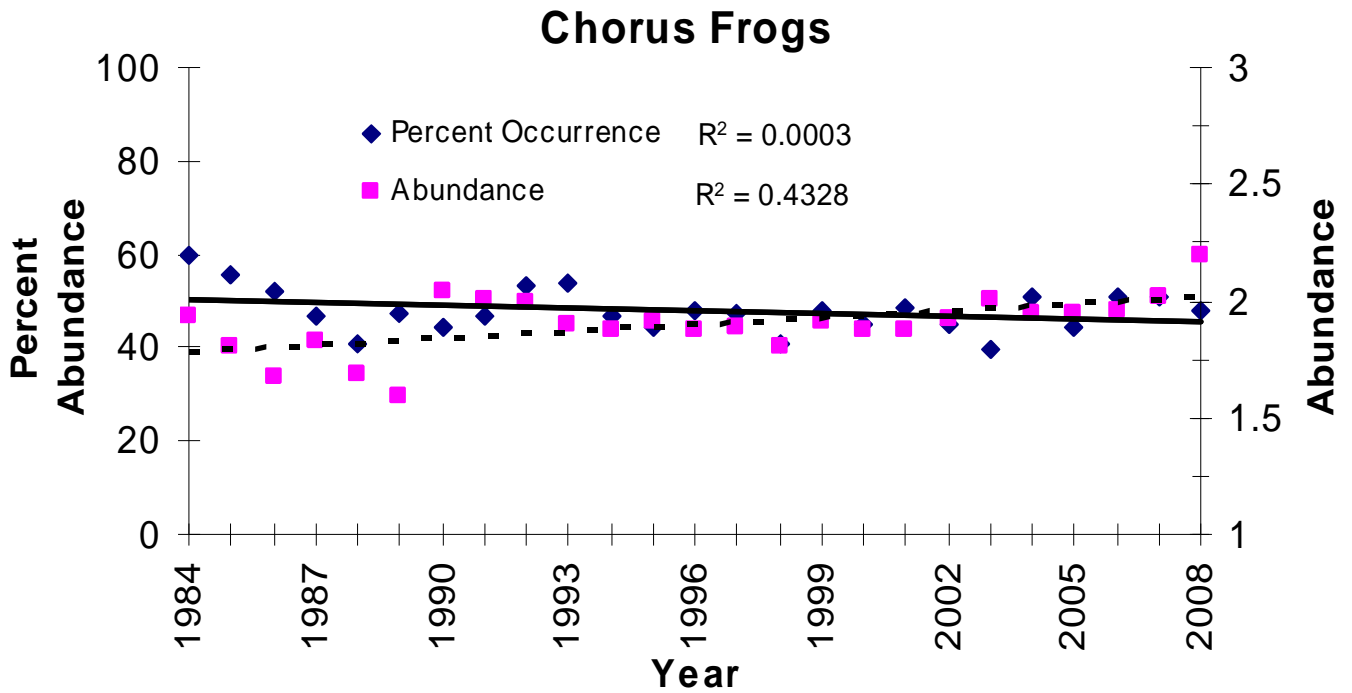


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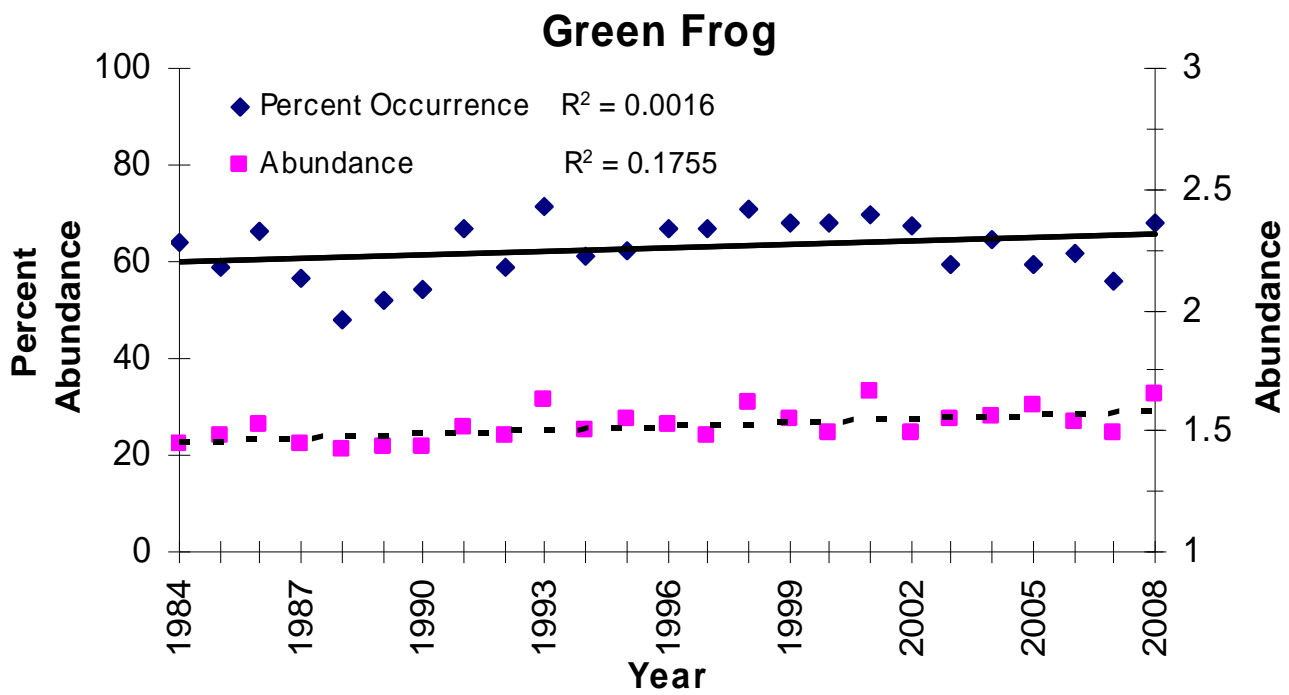
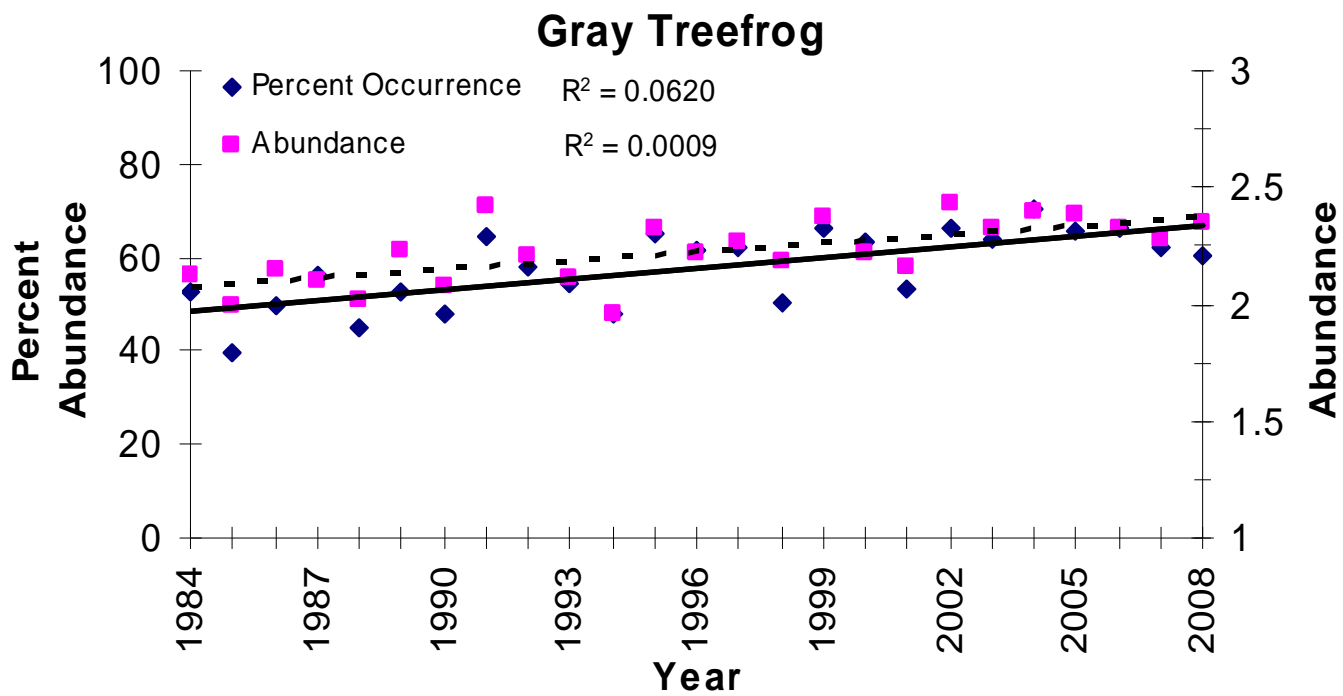


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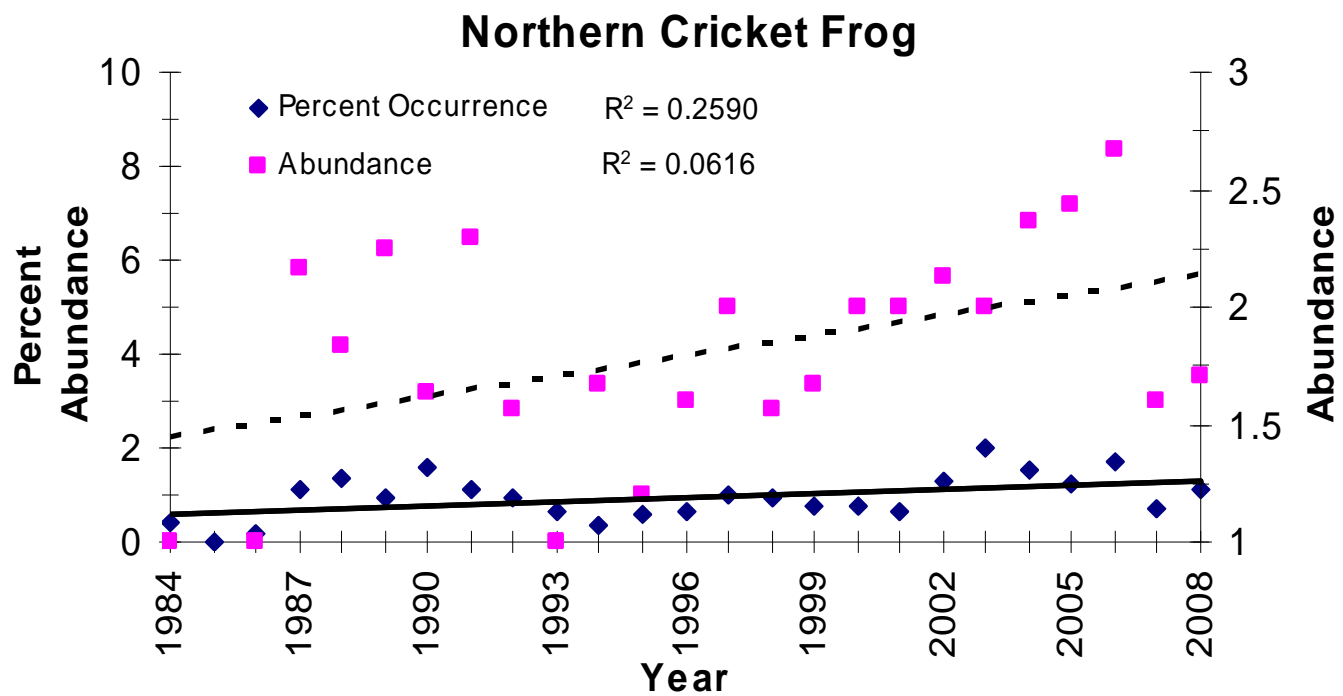
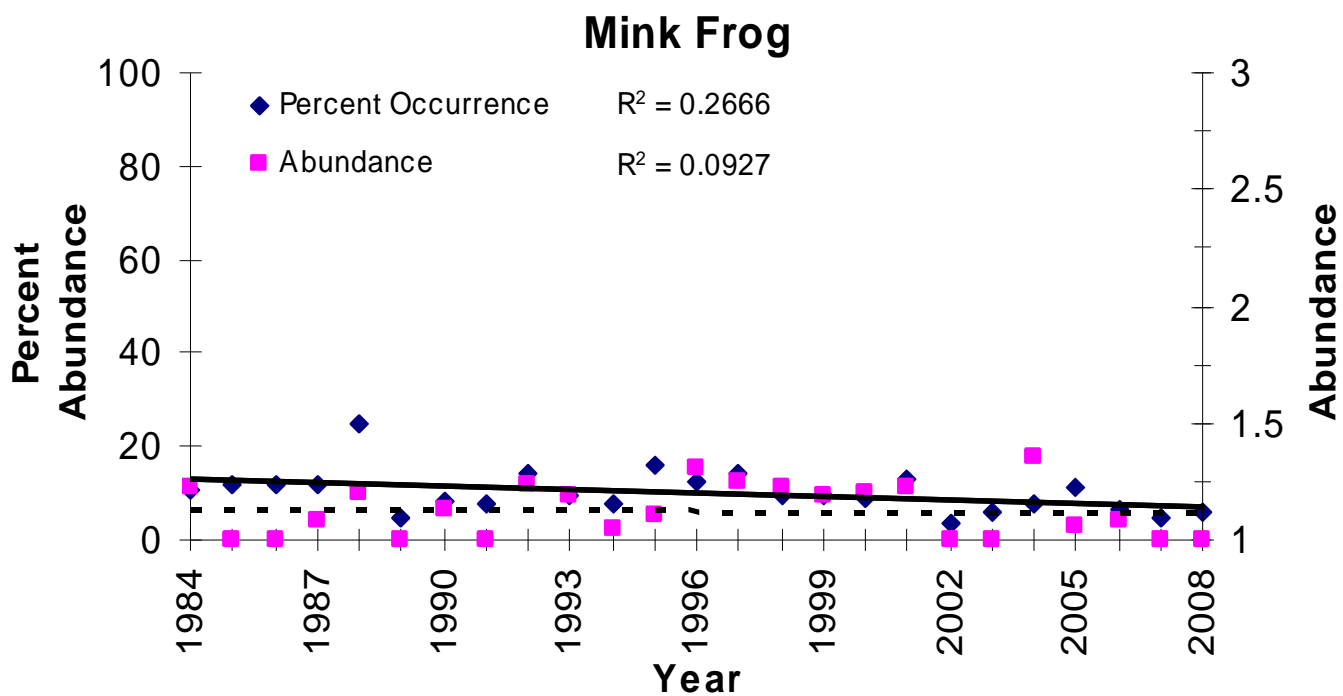


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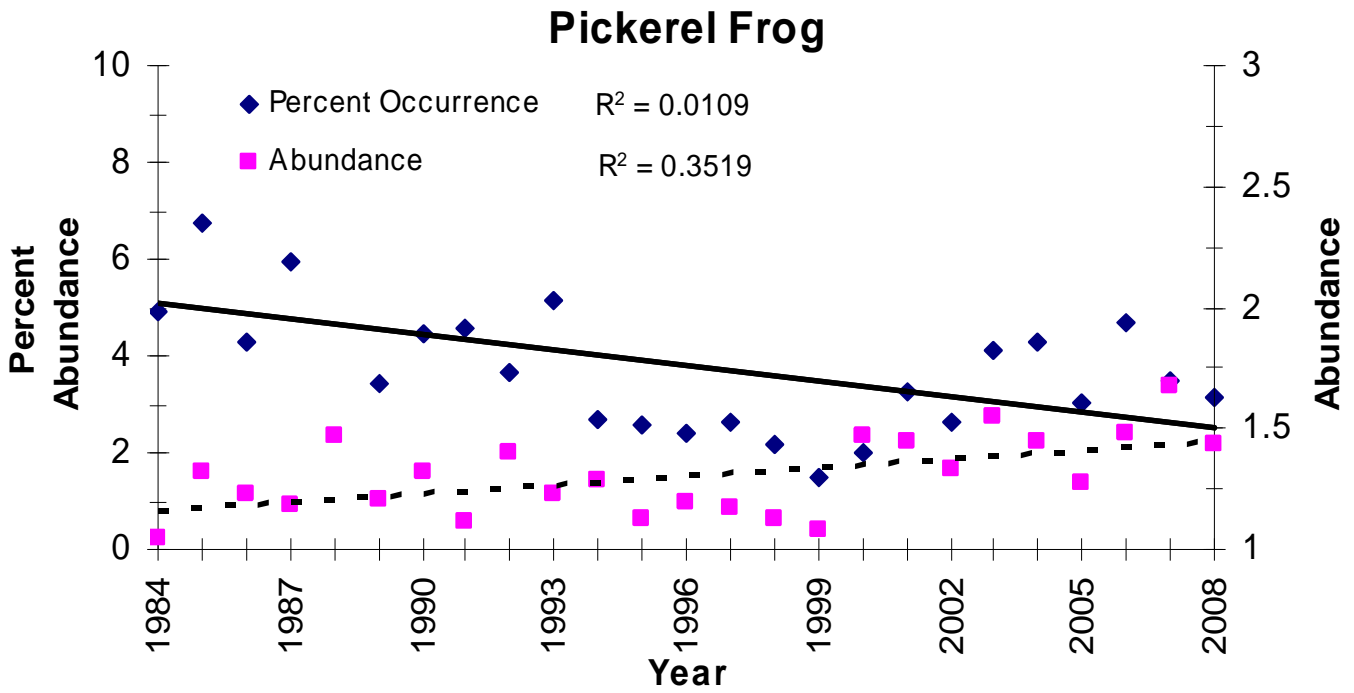
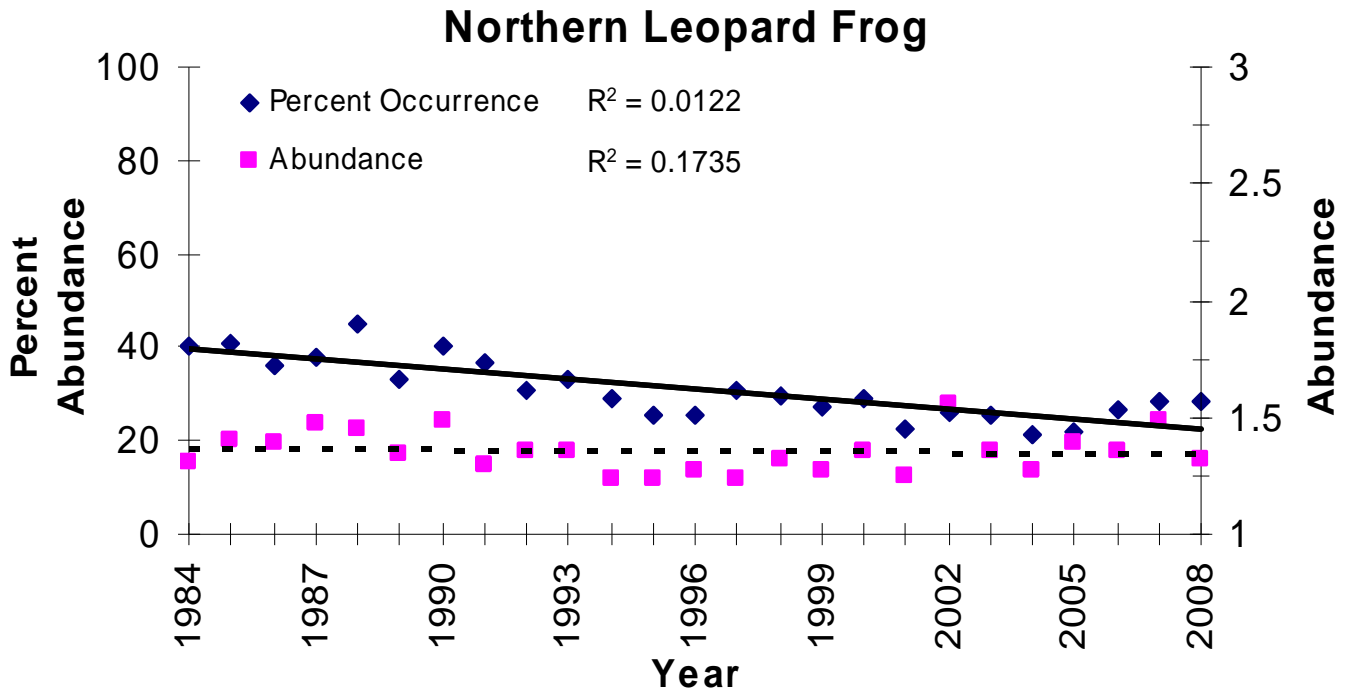


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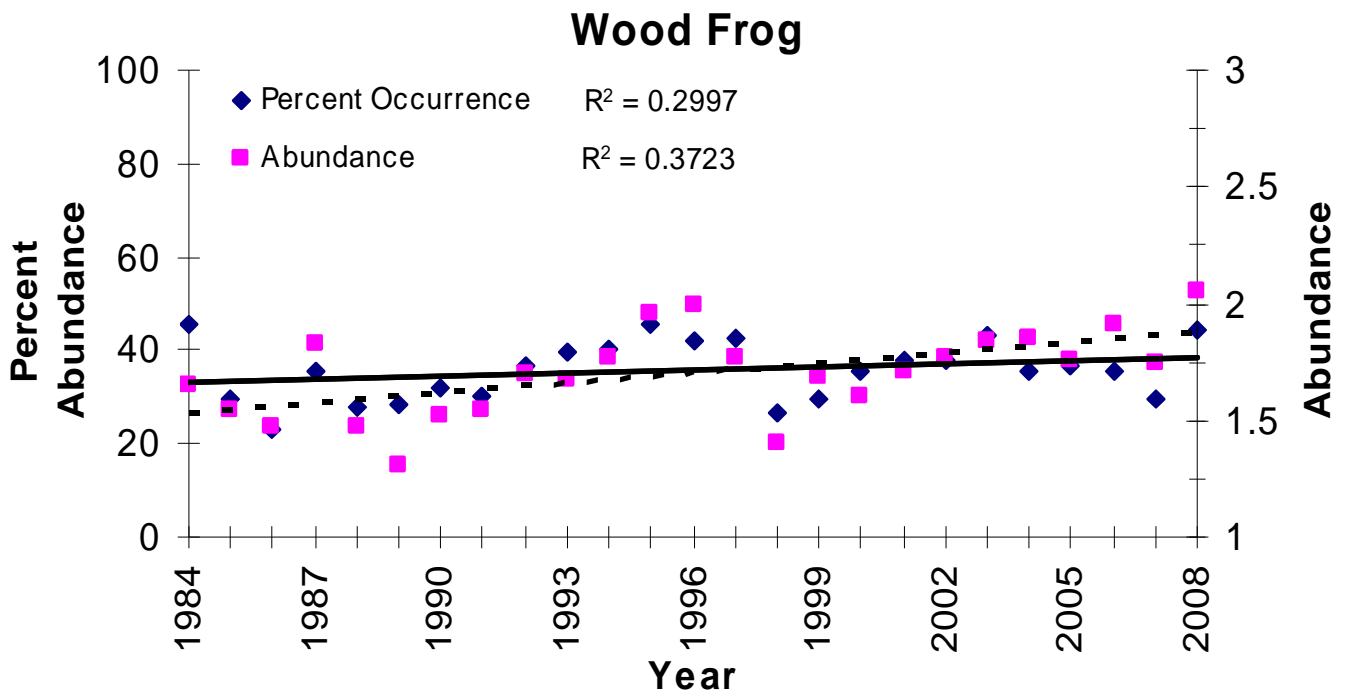
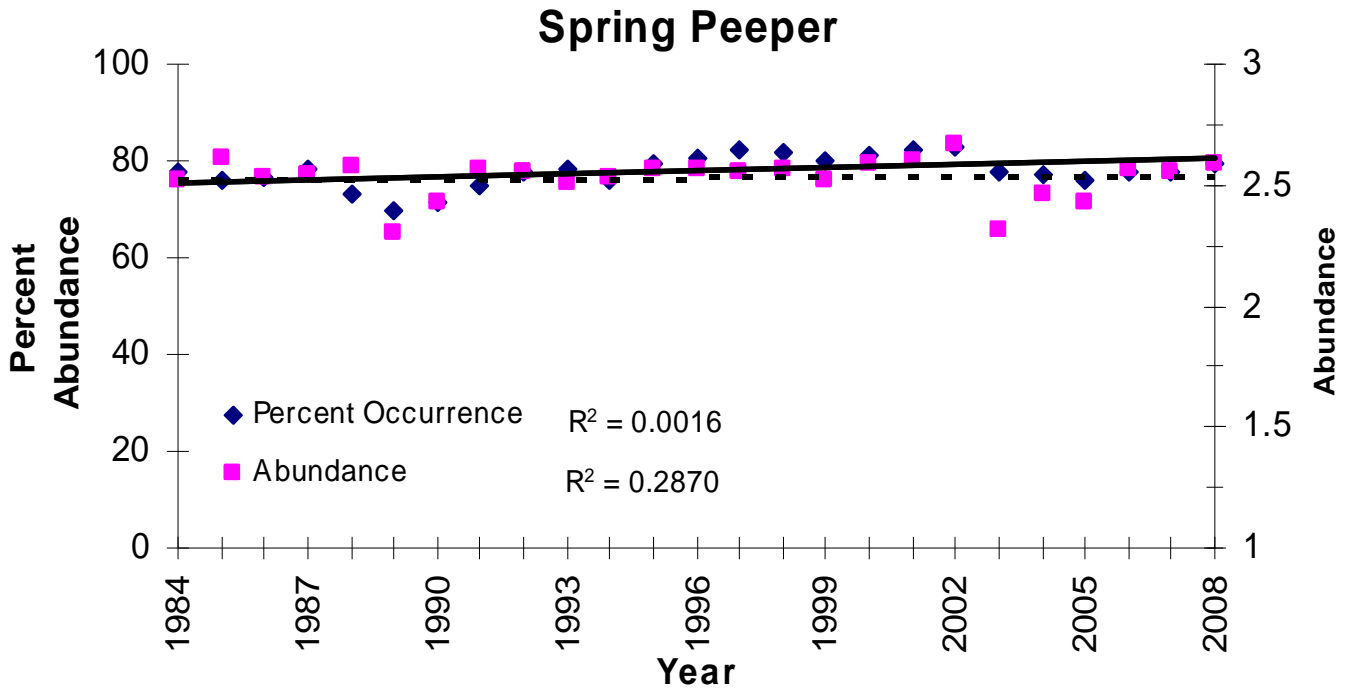


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