

Frog and Toad Survey

2022

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Abstract

Survey sites with American bullfrog, Blanchard's cricket frog, boreal chorus frog, green frog, mink frog and pickerel frog were above their long-term averages, since surveys began in 1984. Of the twelve Wisconsin frog species, six showed an increase in percent occurrence in 2022 from the 2021 levels. The number of frog survey routes that were run decreased from 140 in 2021 to 139 in 2022.

Introduction

The Wisconsin Department of Natural Resources (WDNR) has coordinated an annual 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 frog species. One species (Blanchard's cricket frog) is endangered and two species (mink frog and pickerel frog) are included on the Natural Heritage Inventory working list as "special concern". In general, frogs are good indicator species for the quality of 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 or later 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 140 in 2021 to 139 in 2022, although the number of observers increased from 132 in 2021 to 133 in 2022 (Figure 2).

Of the twelve frog species, six showed an increase in percent occurrence in 2022 from 2021 levels. These were the Blanchard's cricket frog, boreal chorus frog, green frog, mink frog, northern leopard frog, and wood frog (Figure 3). Six species were below the previous year's occurrence levels: American bullfrog, American toad, Cope's gray treefrog, gray treefrog, pickerel frog and spring peeper. Population trends, based on the call index, for each frog species can be reviewed in Figure 3.

Literature Cited

Gamble, T., P.B. Berendzen, H.B. Shaffer, D.E. Starkey, and A.M. Simons. 2008. Species limits and phylogeography of North American cricket frogs (*Acris: Hylidae*). *Molecular Phylogenetics and Evolution* 48:112–125.

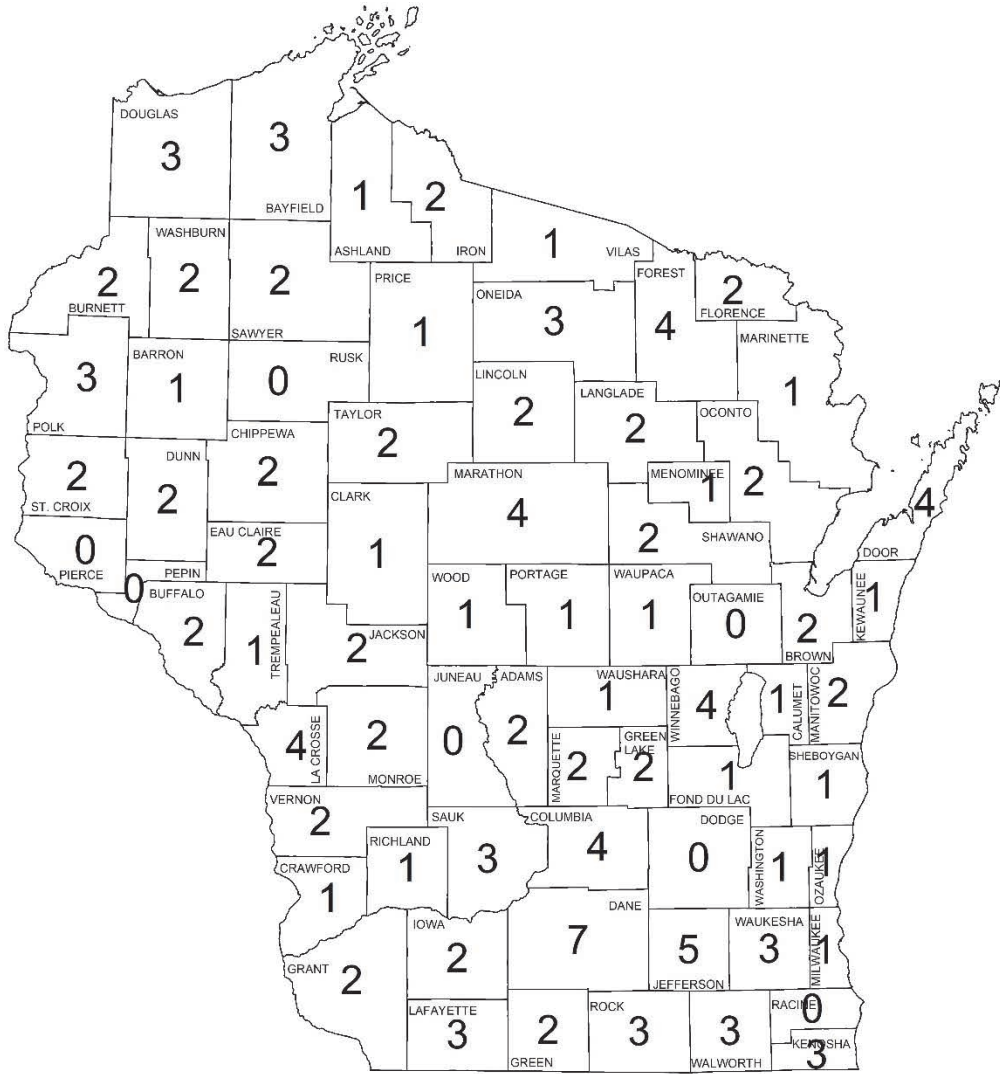


Figure 1. The number of frog survey routes run in each county in 2022.

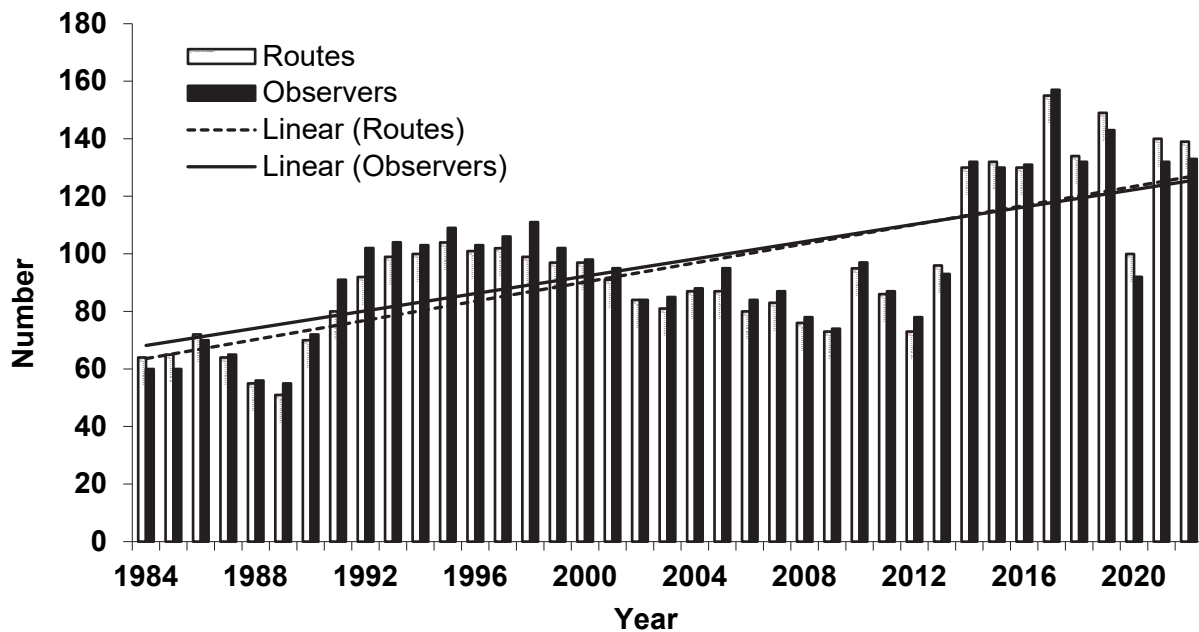


Figure 2. The numbers of observers and frog routes completed, 1984-2022.

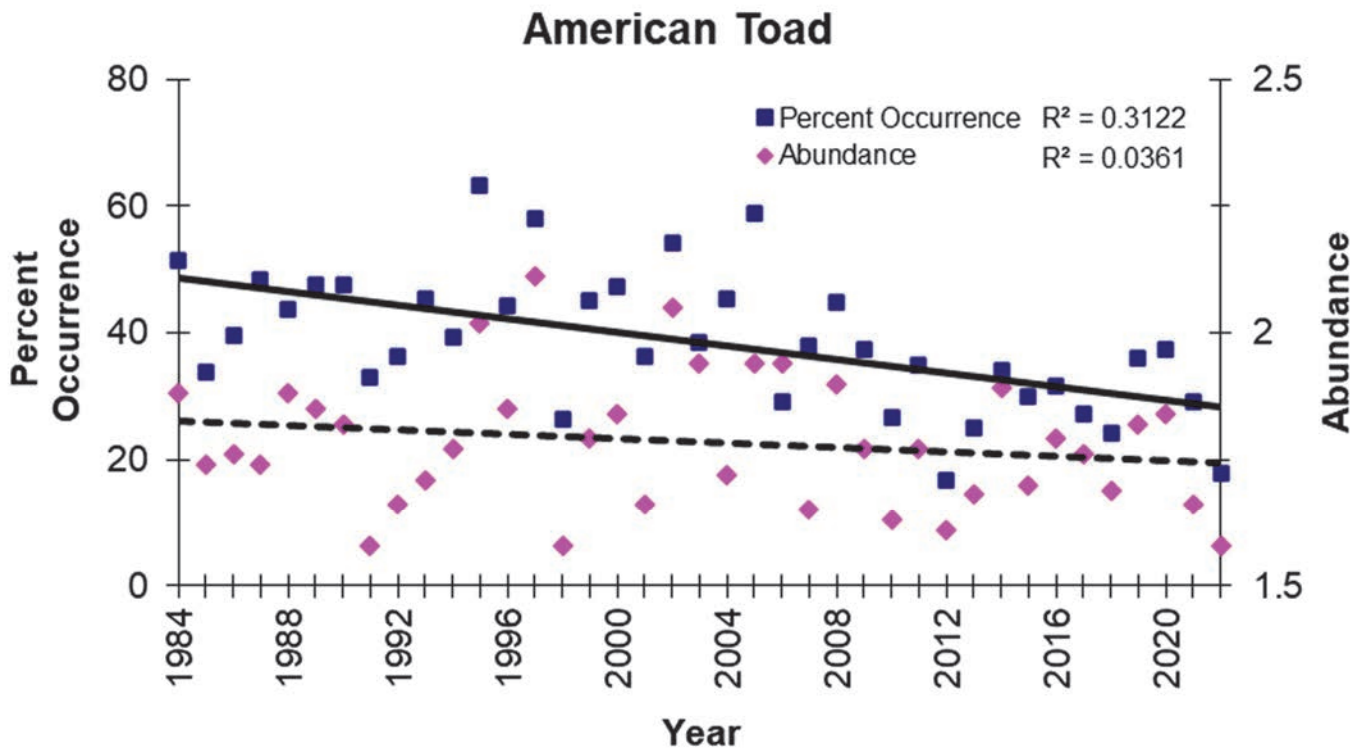
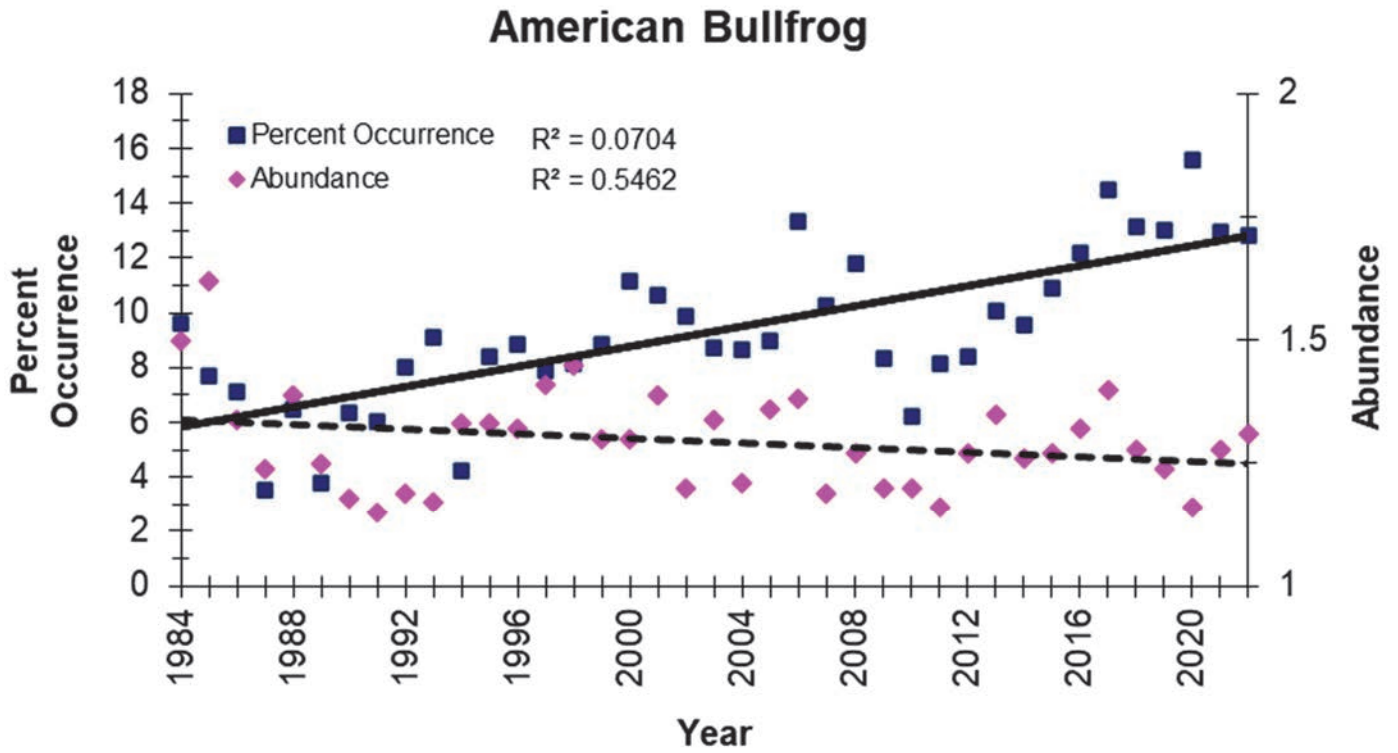


Figure 3. Percent occurrence and abundance of the 12 frog species in Wisconsin, 1984-2022.

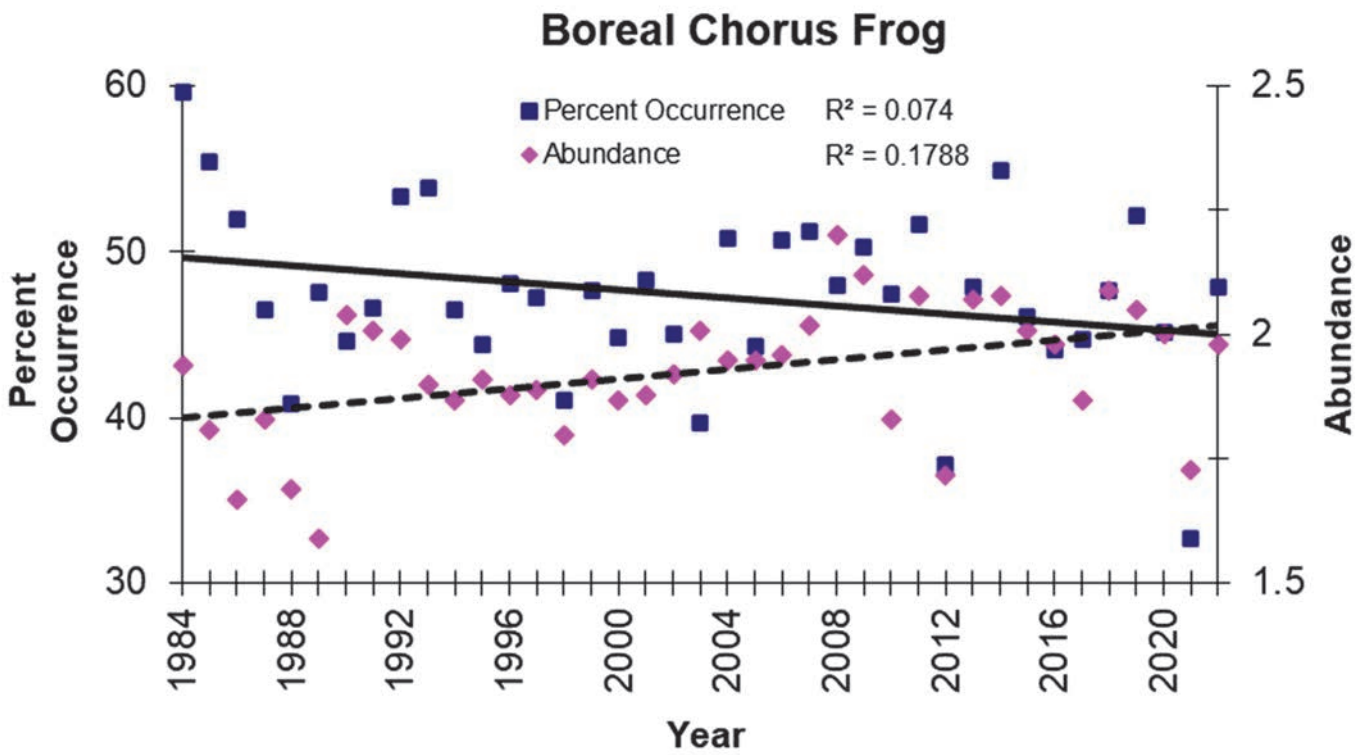
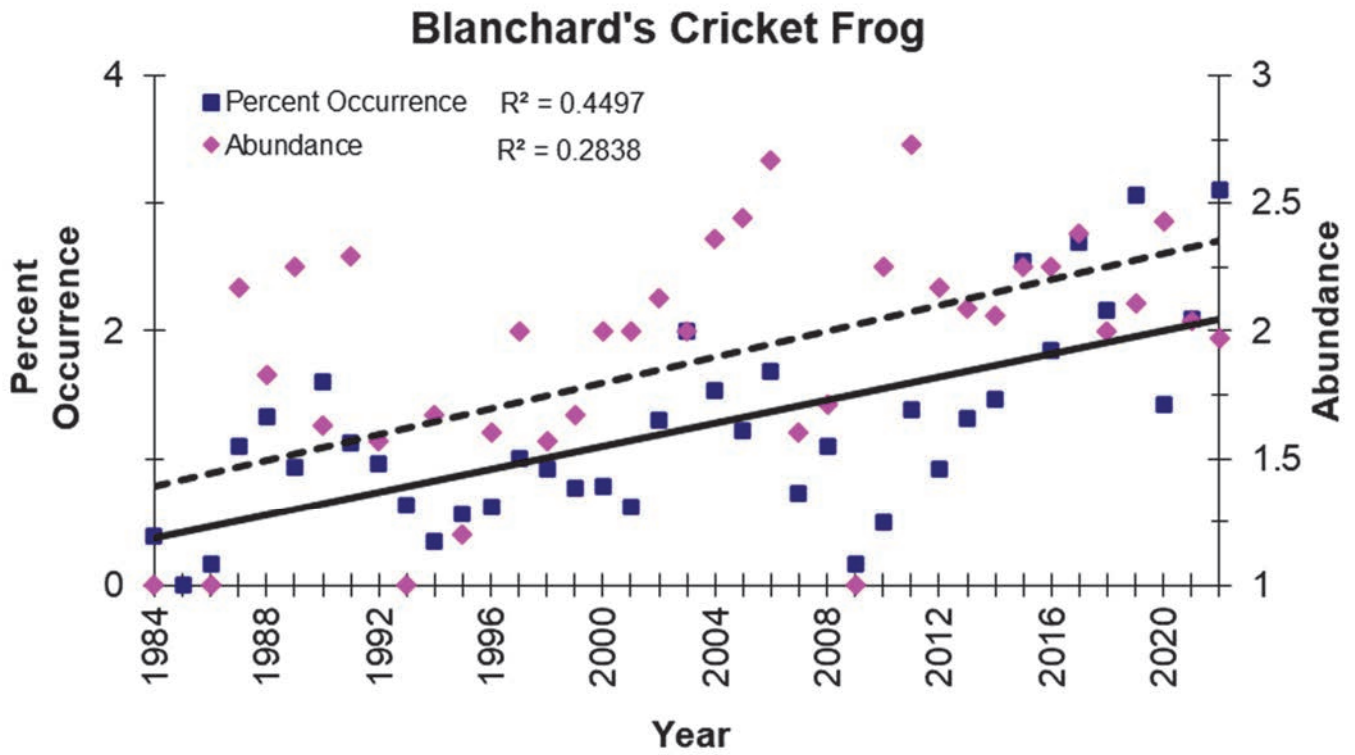


Figure 3. Continued.

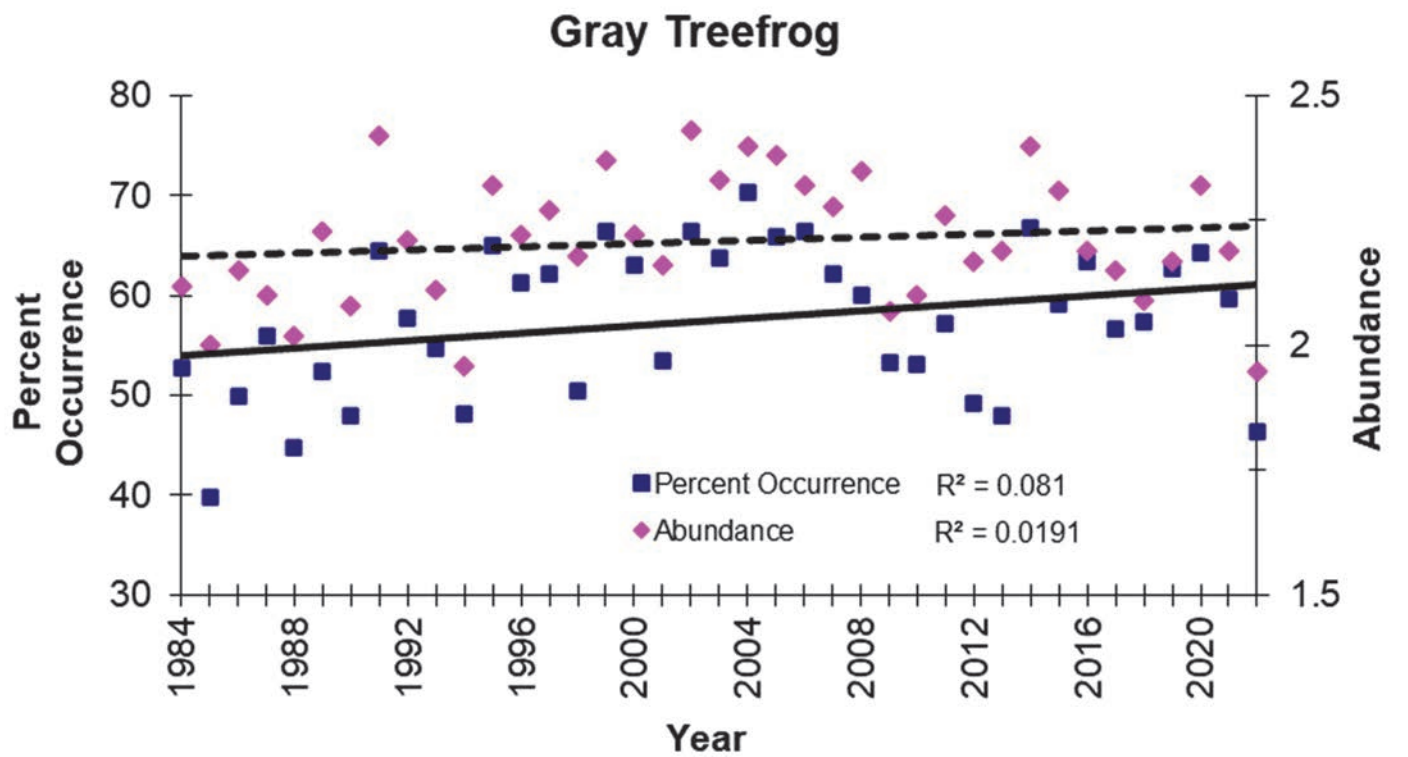
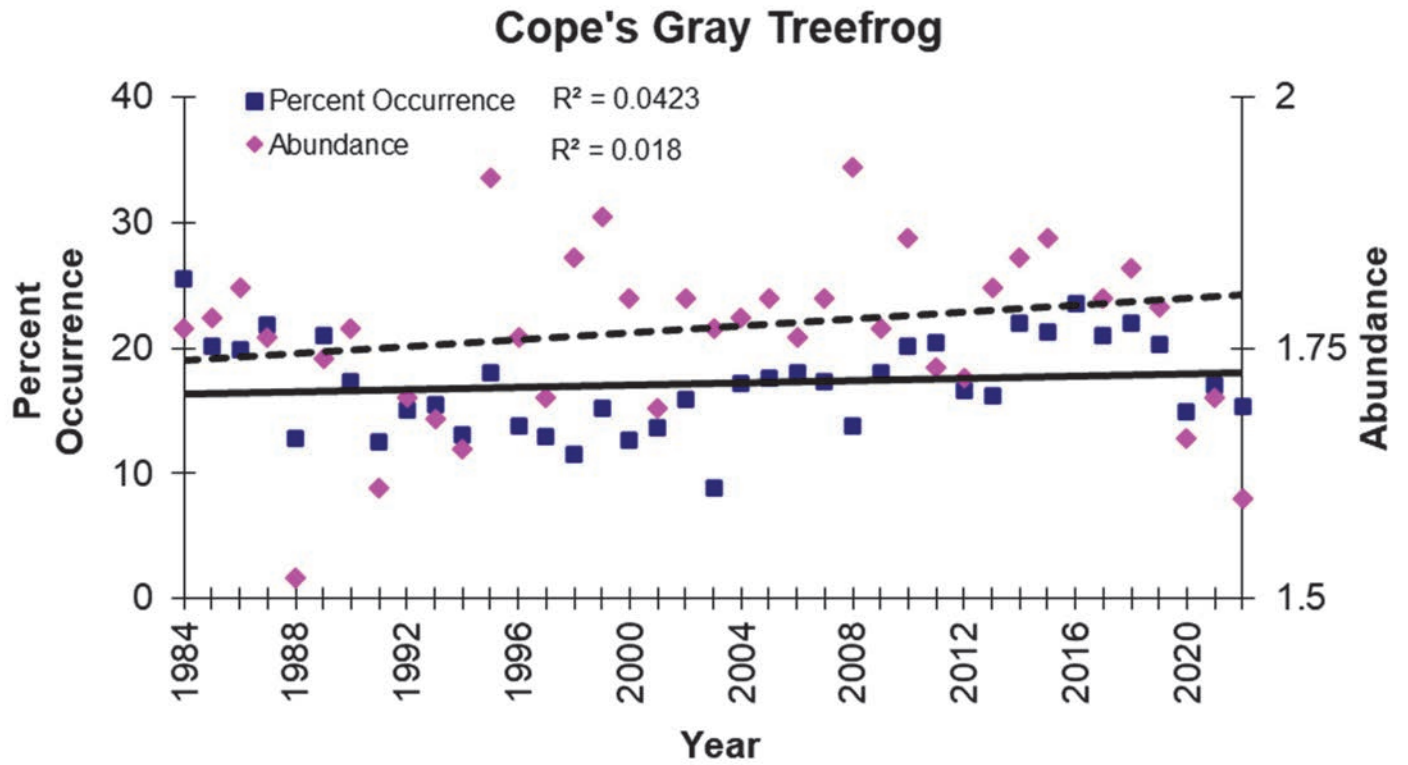


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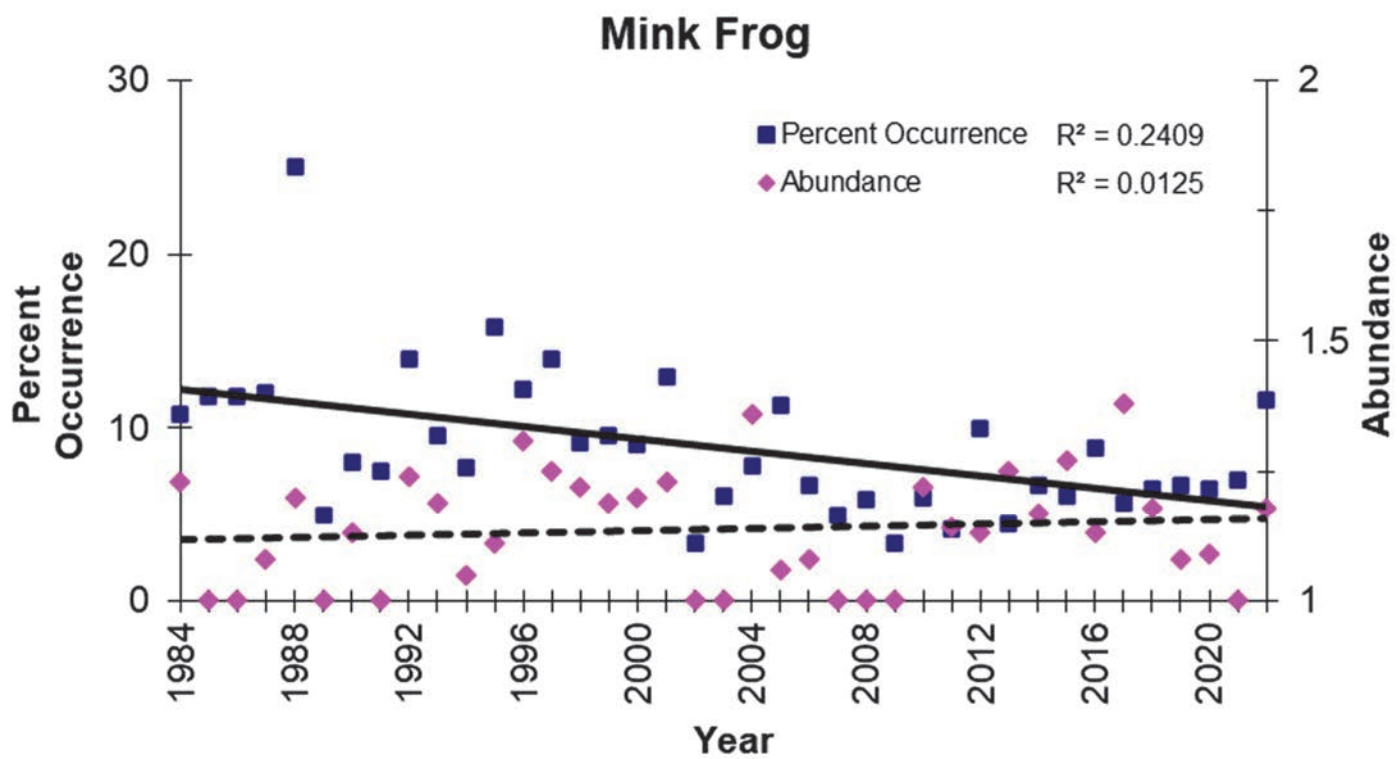
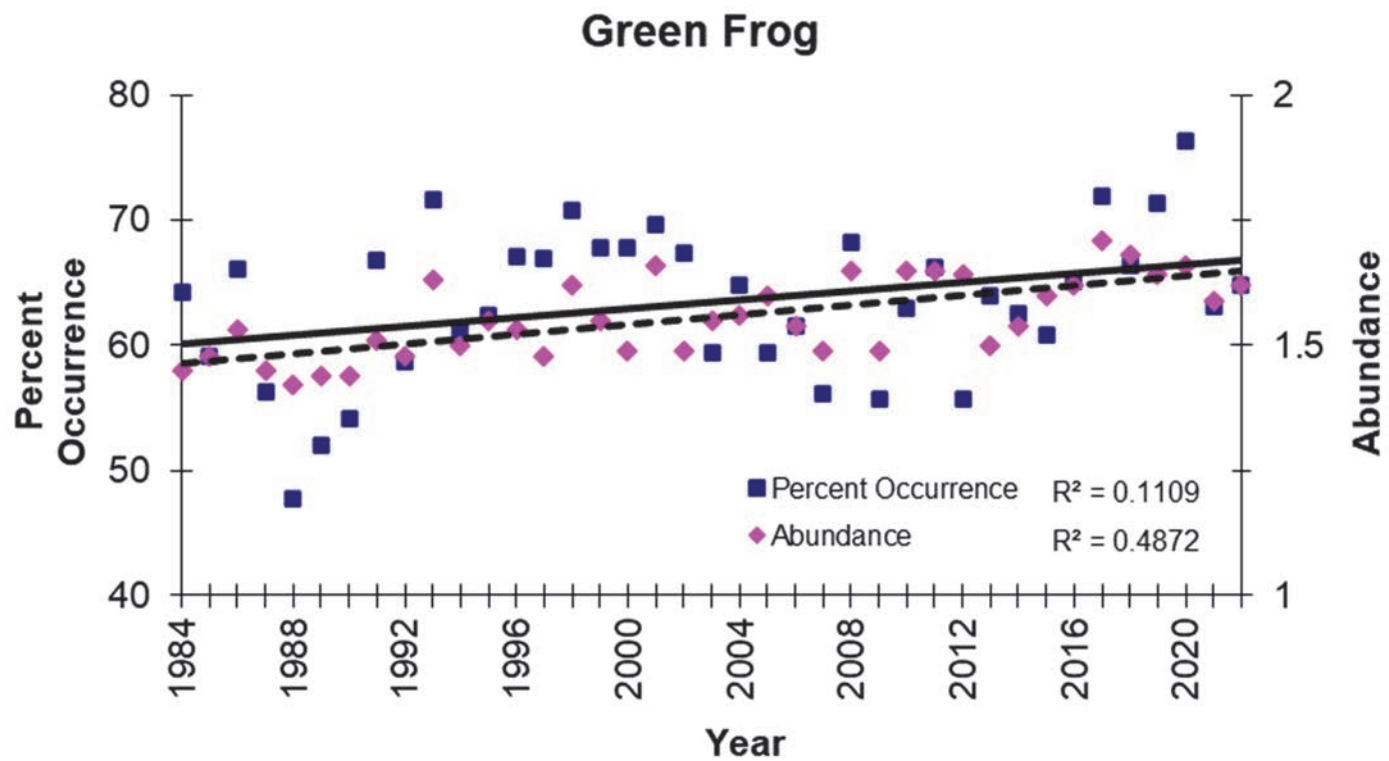
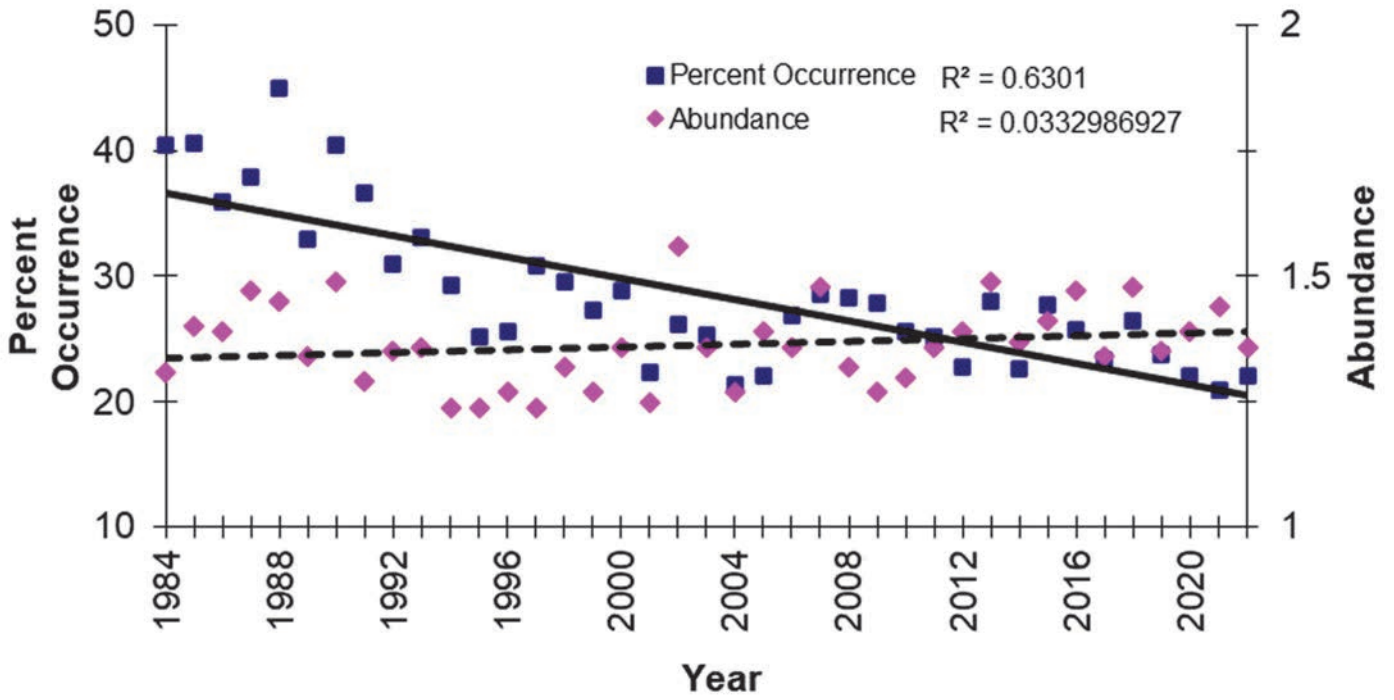


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Northern Leopard Frog



Pickerel Frog

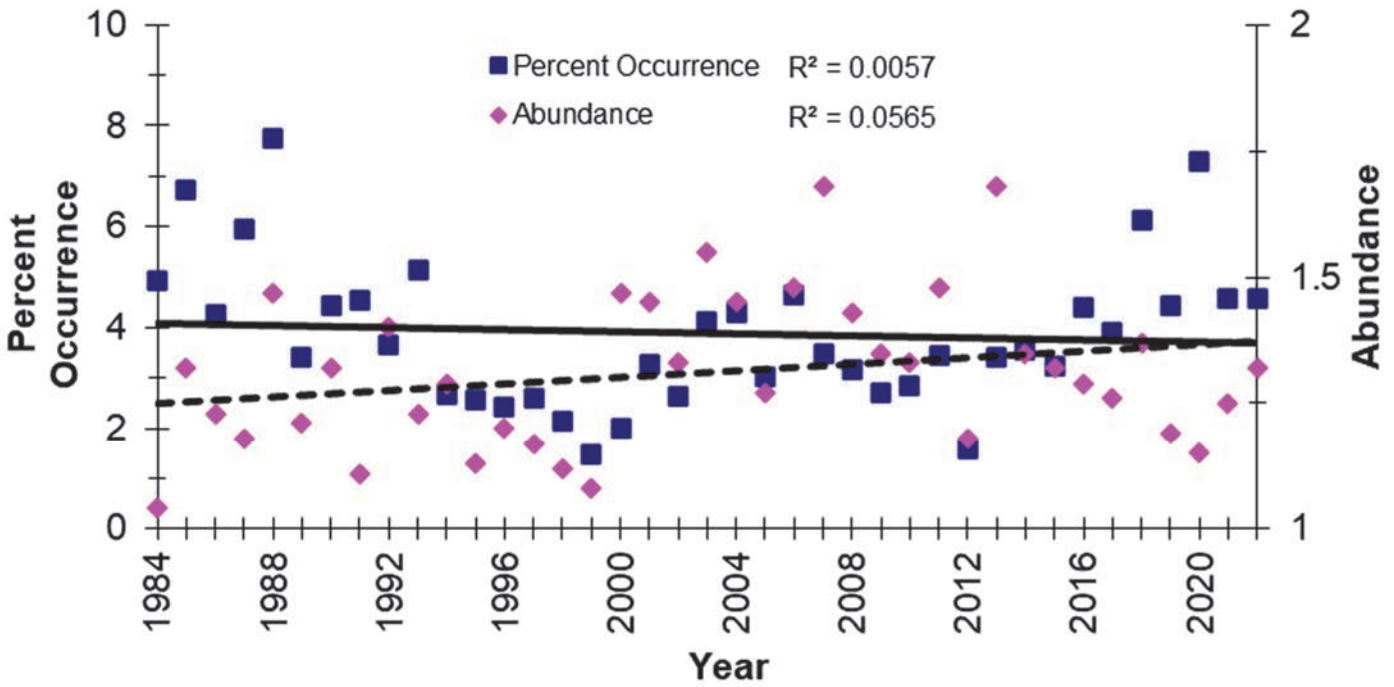


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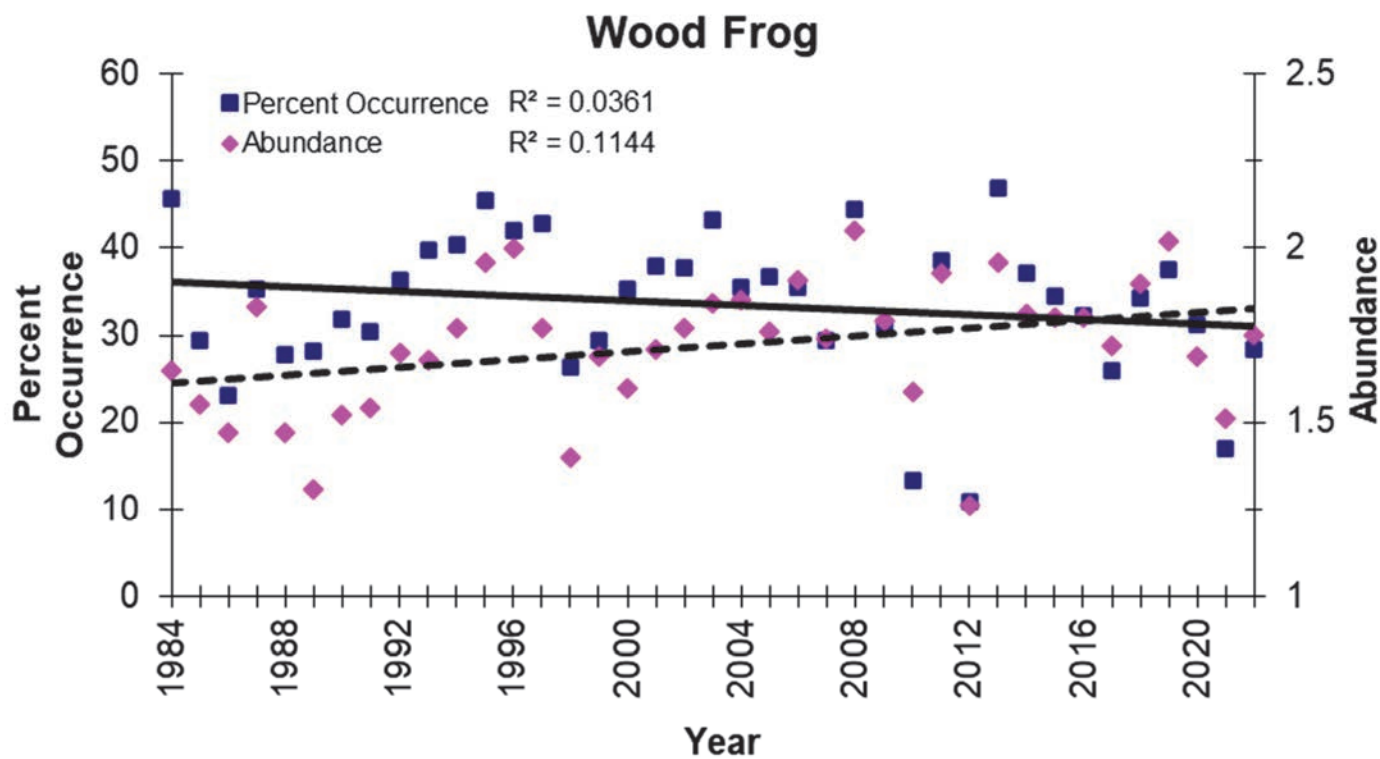
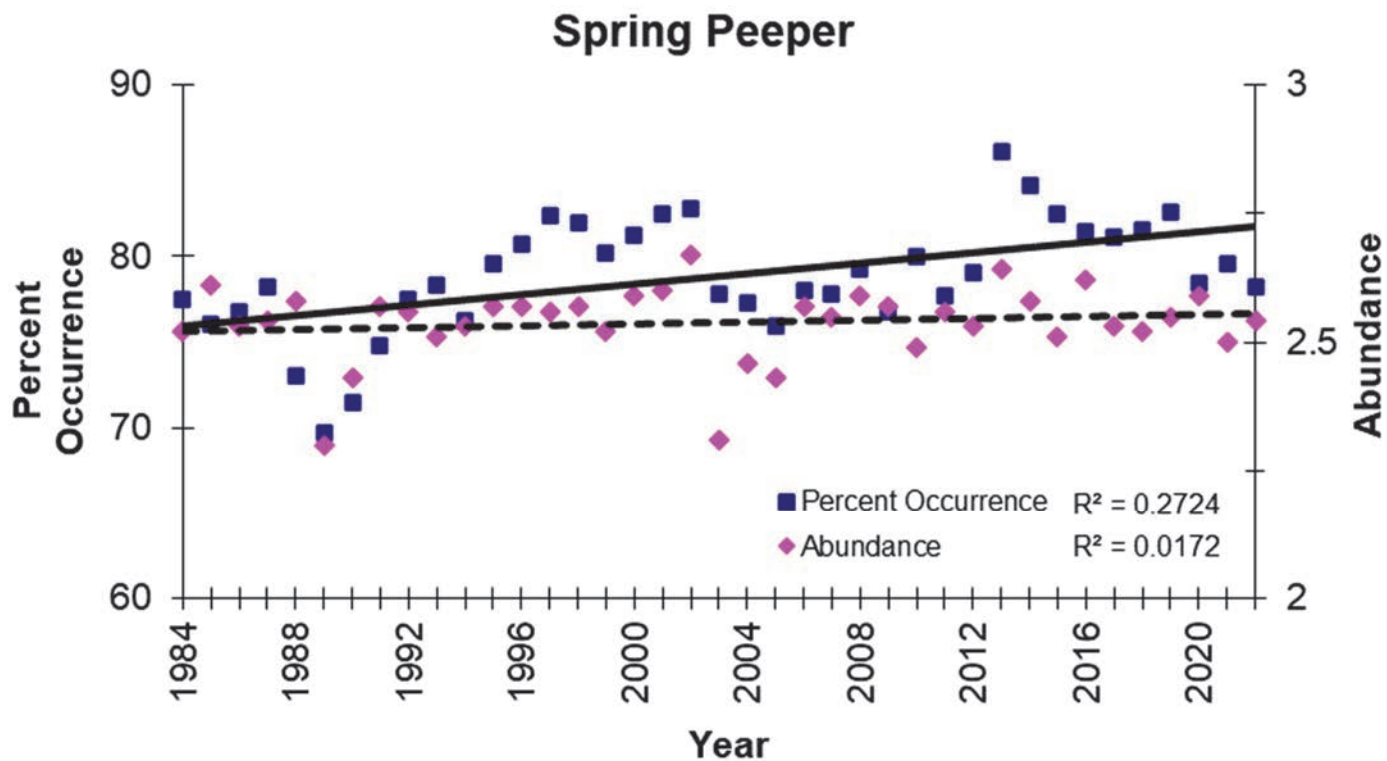


Figure 3. Continued.