

Frog and Toad Survey 1998

By Brian Dhuey, and Bob Hay

Abstract

The number of frog survey routes decreased to 99 in 1998 from 102 in 1997. The number of sites with Spring Peeper, Cricket Frog, Green Frog, and Bull Frog present were at or above their long-term averages. Abundance of Wood Frog, Chorus Frog, Cope's Gray Tree Frog, Eastern Gray Tree Frog, American Toad, Leopard Frog, Pickerel Frog, and Mink Frog fell from their long term means.

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 2 species (bullfrog 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.

Methods

Survey routes are distributed statewide, with a goal of 2 survey routes in each county of Wisconsin. Survey routes consist of 10 sites which are monitored 3 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 8 miles per hour. Water temperature is recorded at each stop where possible. The presence or absence of each frog species is determined at each site by 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 run decreased, from 102 in 1997 to 99 in 1998. Observers increased from last years level of 102 in 1997 to 108 in 1998 (Fig. 1). The number of routes run in each county is still well below our goal of 2 (Fig. 2). Additional routes will not be added until it is determined if the Wisconsin Survey is compatible with the new North American Amphibian Monitoring Program (NAAMP).

1998 should have been an above normal year for amphibian recruitment due to above-average rainfall in both spring and summer. Of the 12 anuran species, only 4 showed a increase in percent occurrence in 1998 from 1997 levels. These were the Spring Peeper, Cricket Frog, Green Frog, and Bull Frog (Fig. 3). All other frog species were below the previous year's mean.

Population trends, based on the call index, for each anuran species can be reviewed in Figure 3.

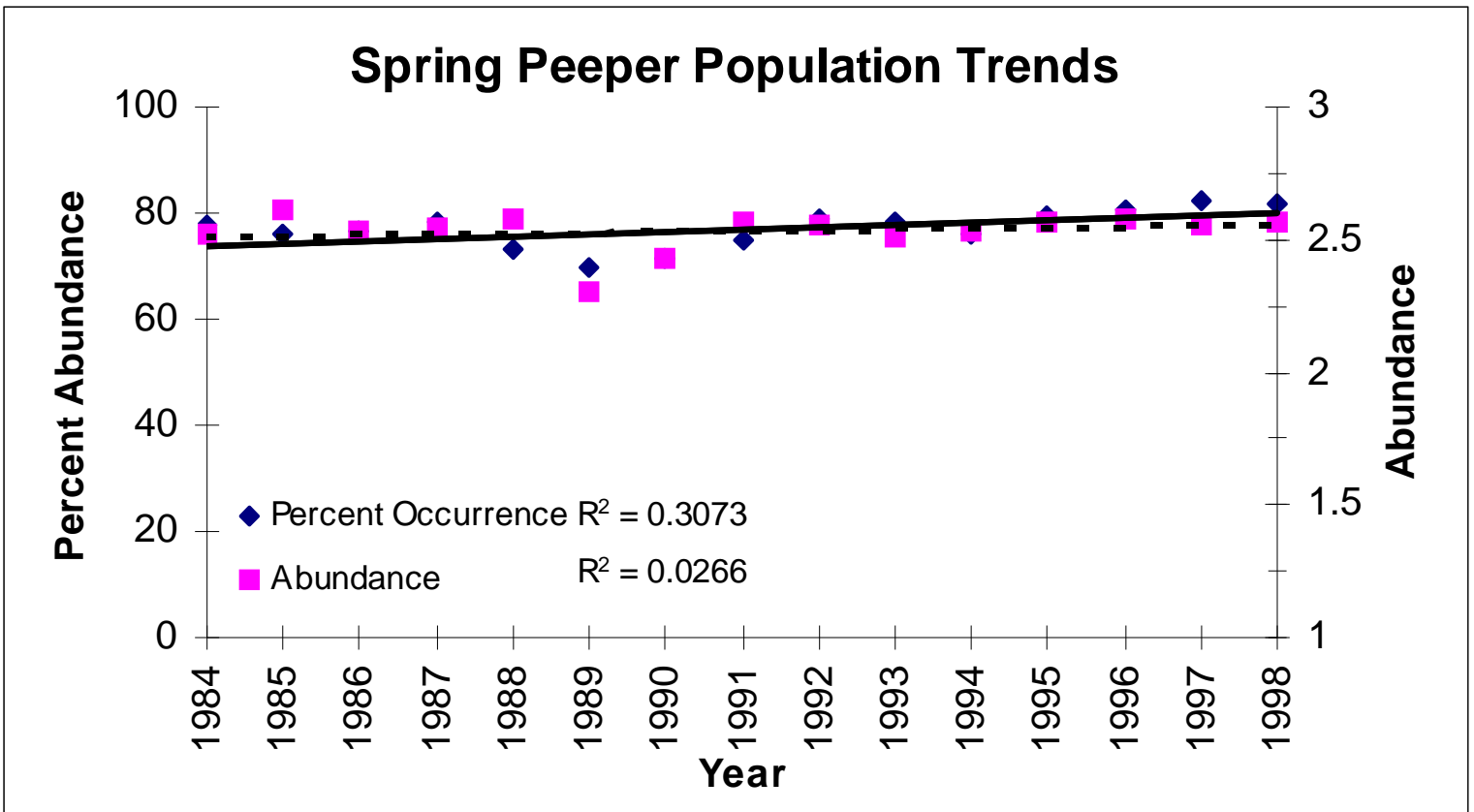
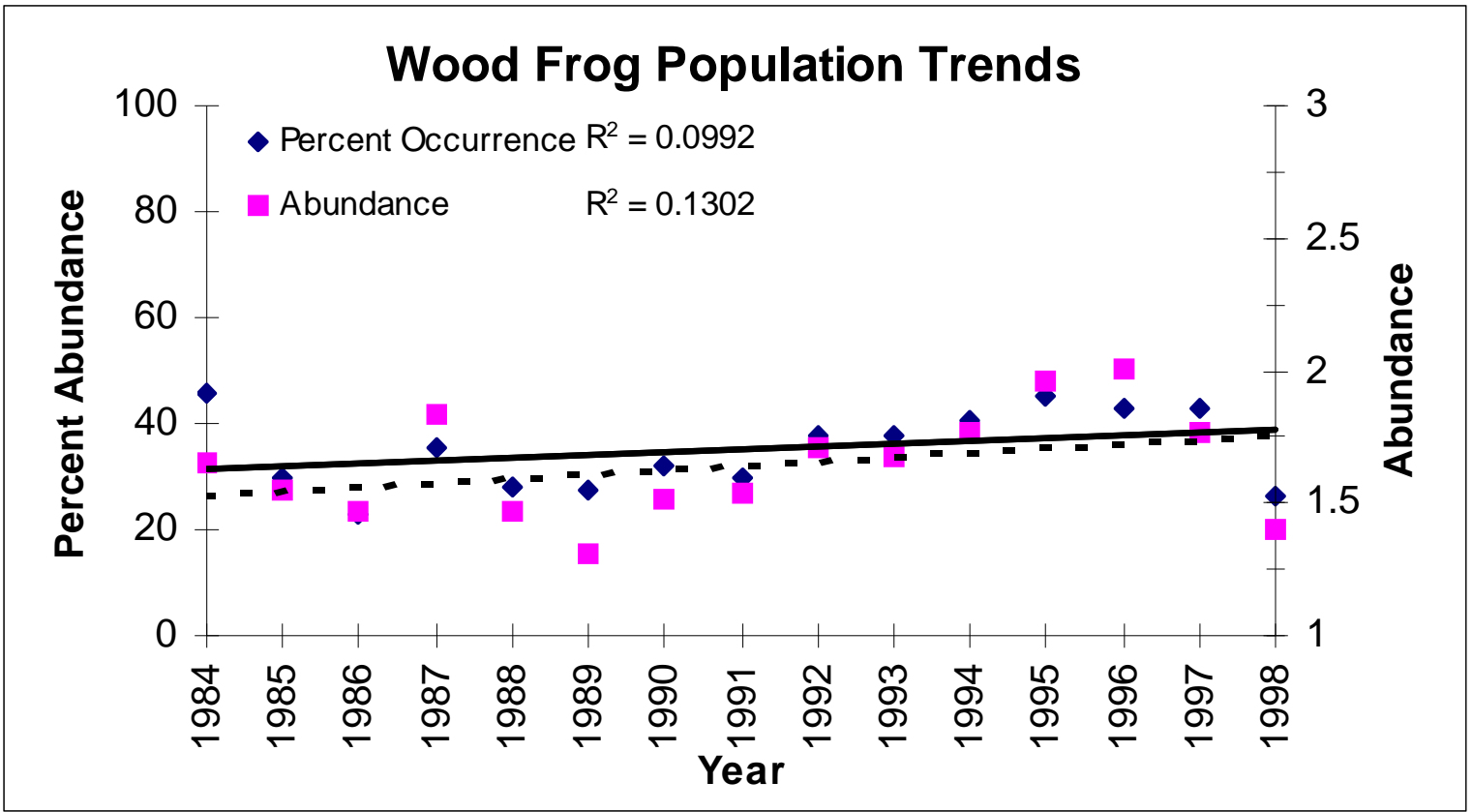


Figure 3. Percent occurrence and abundance of the 12 anuran species in Wisconsin, 1984-98.

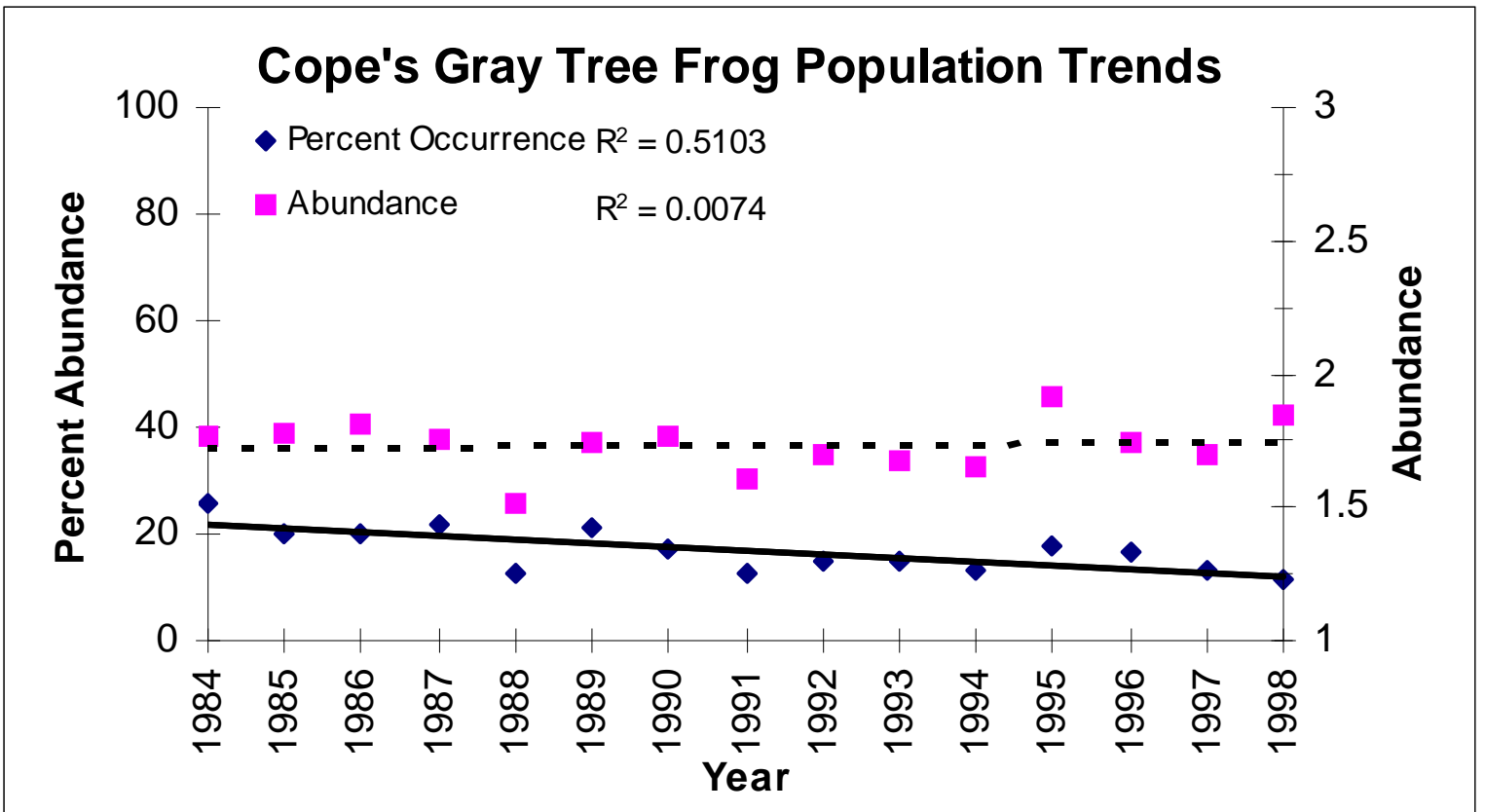
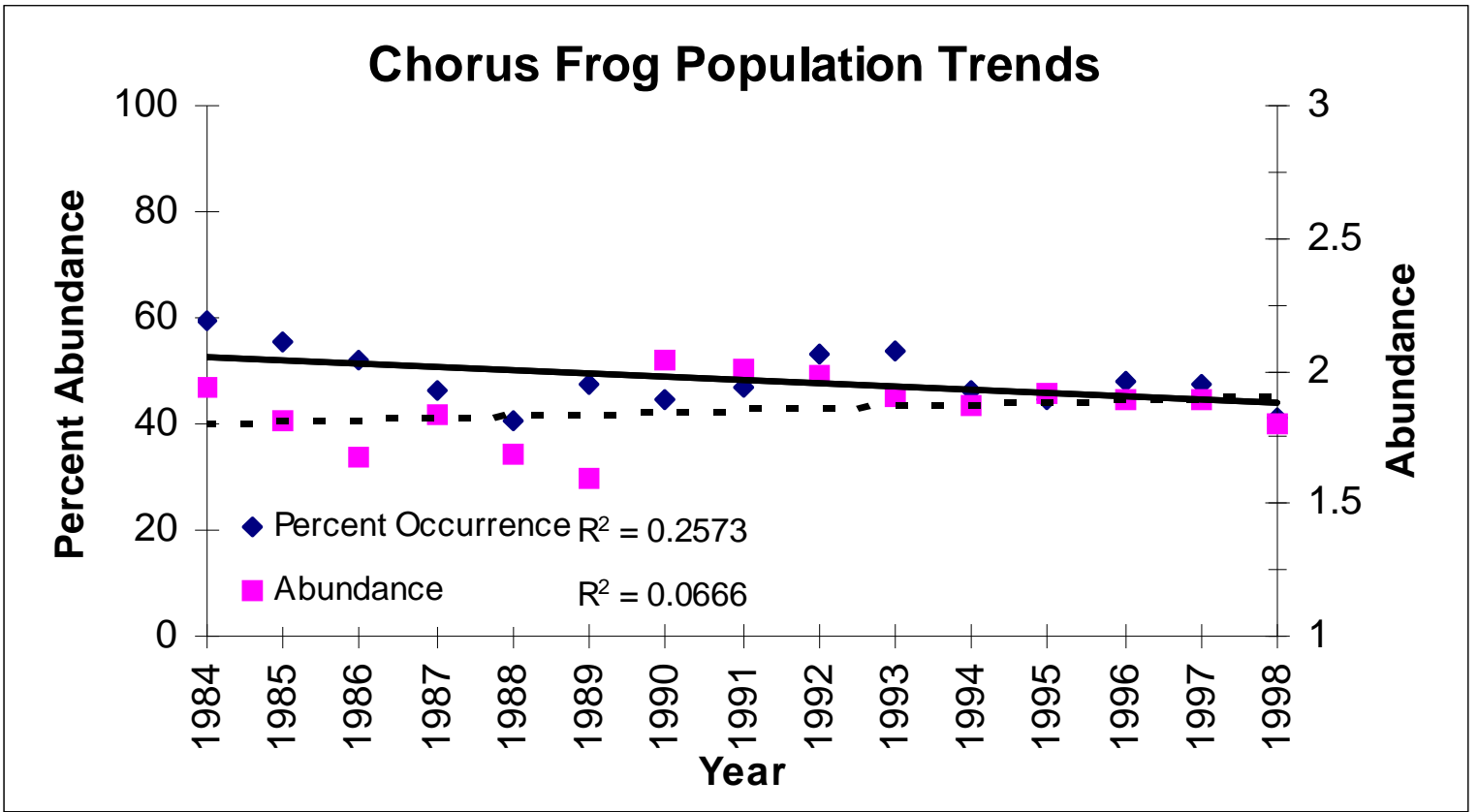


Figure 3. Continued.

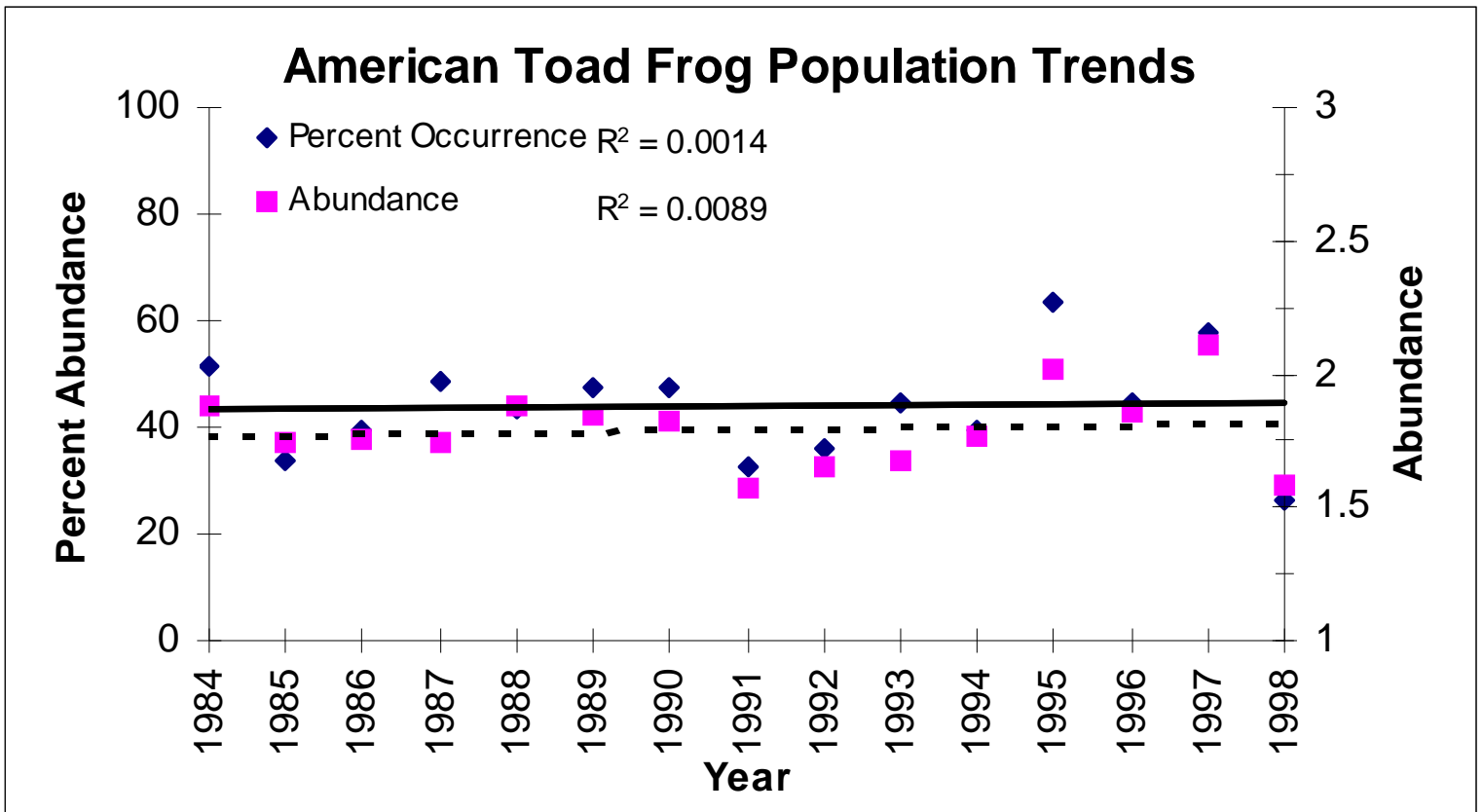
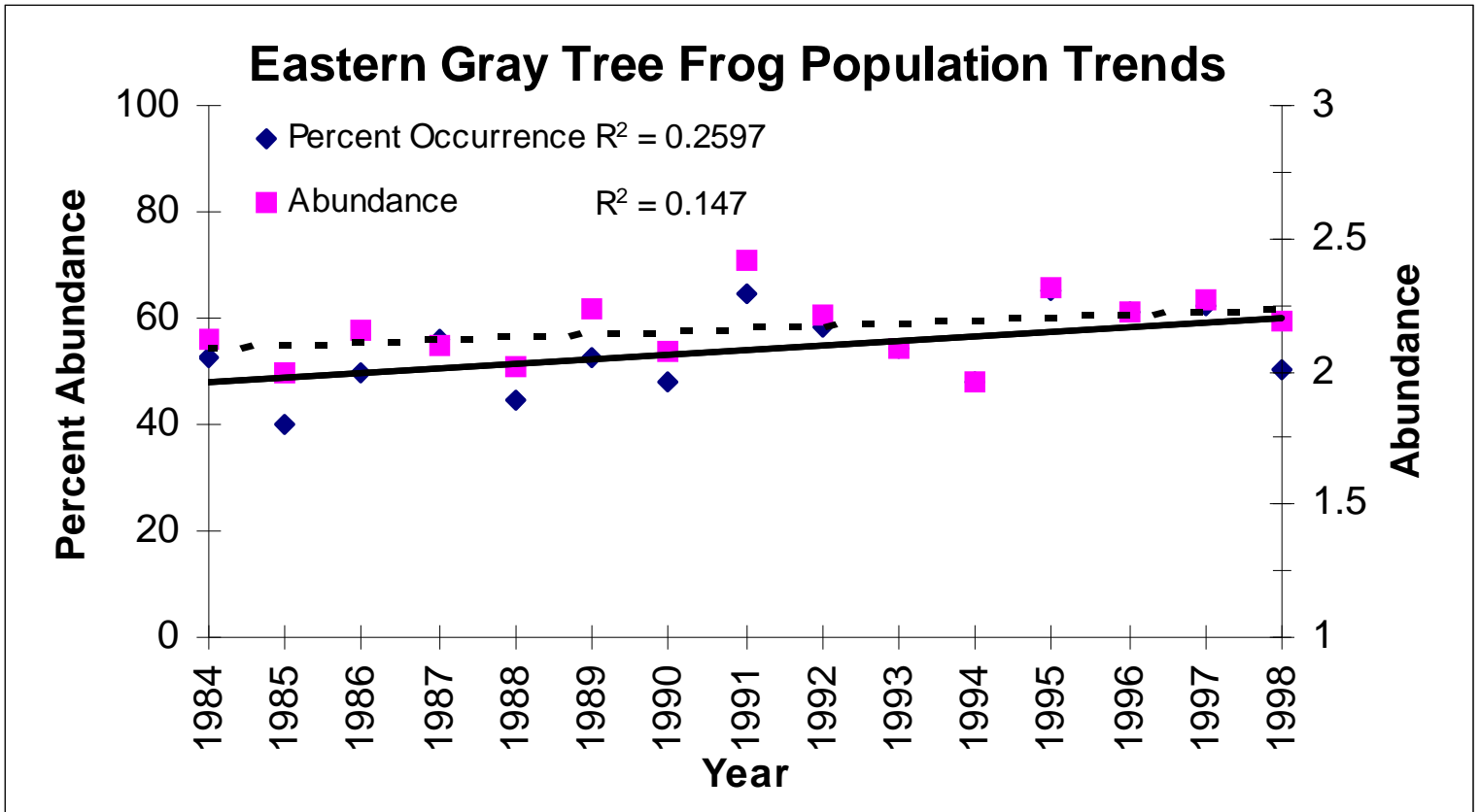


Figure 3. Continued.

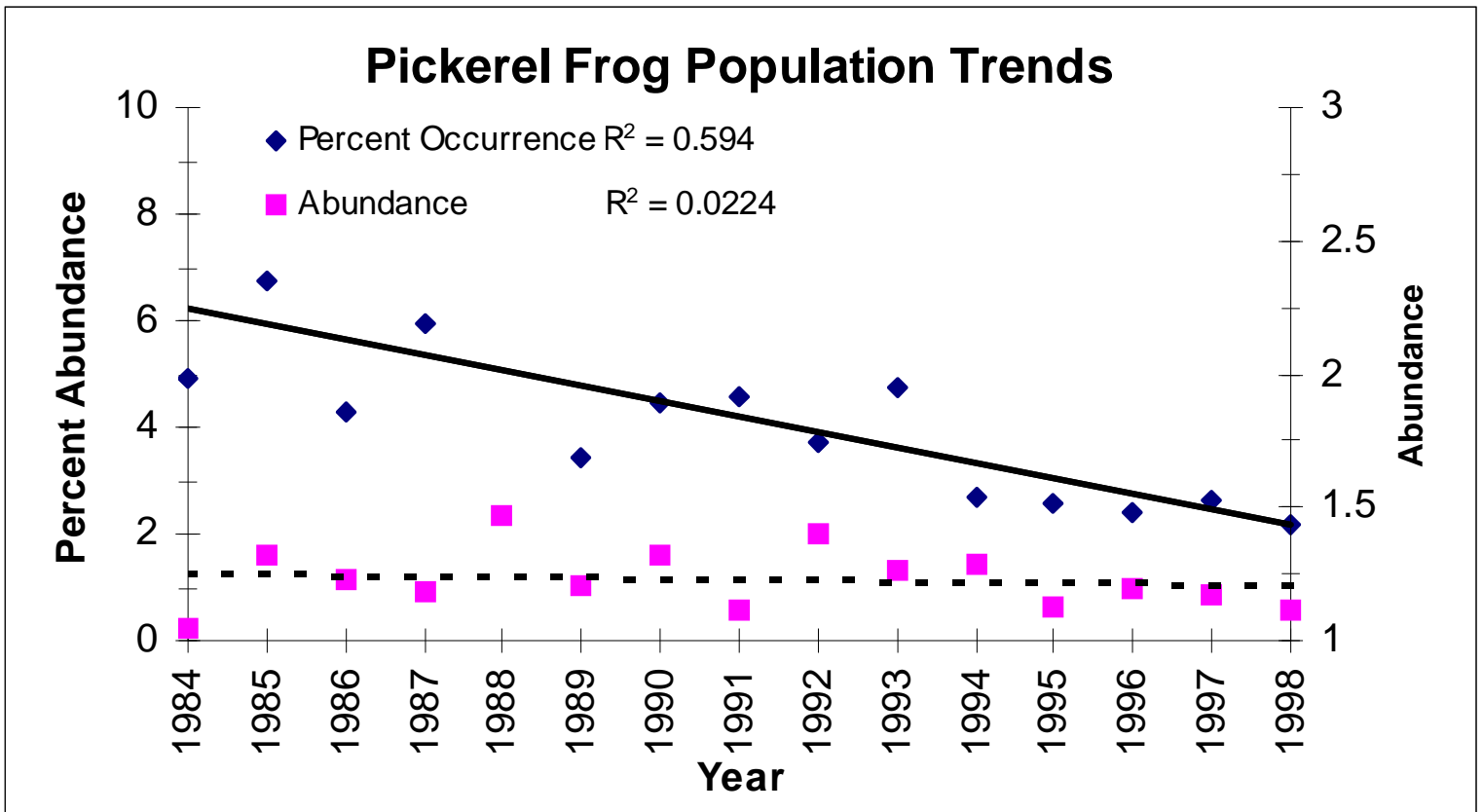
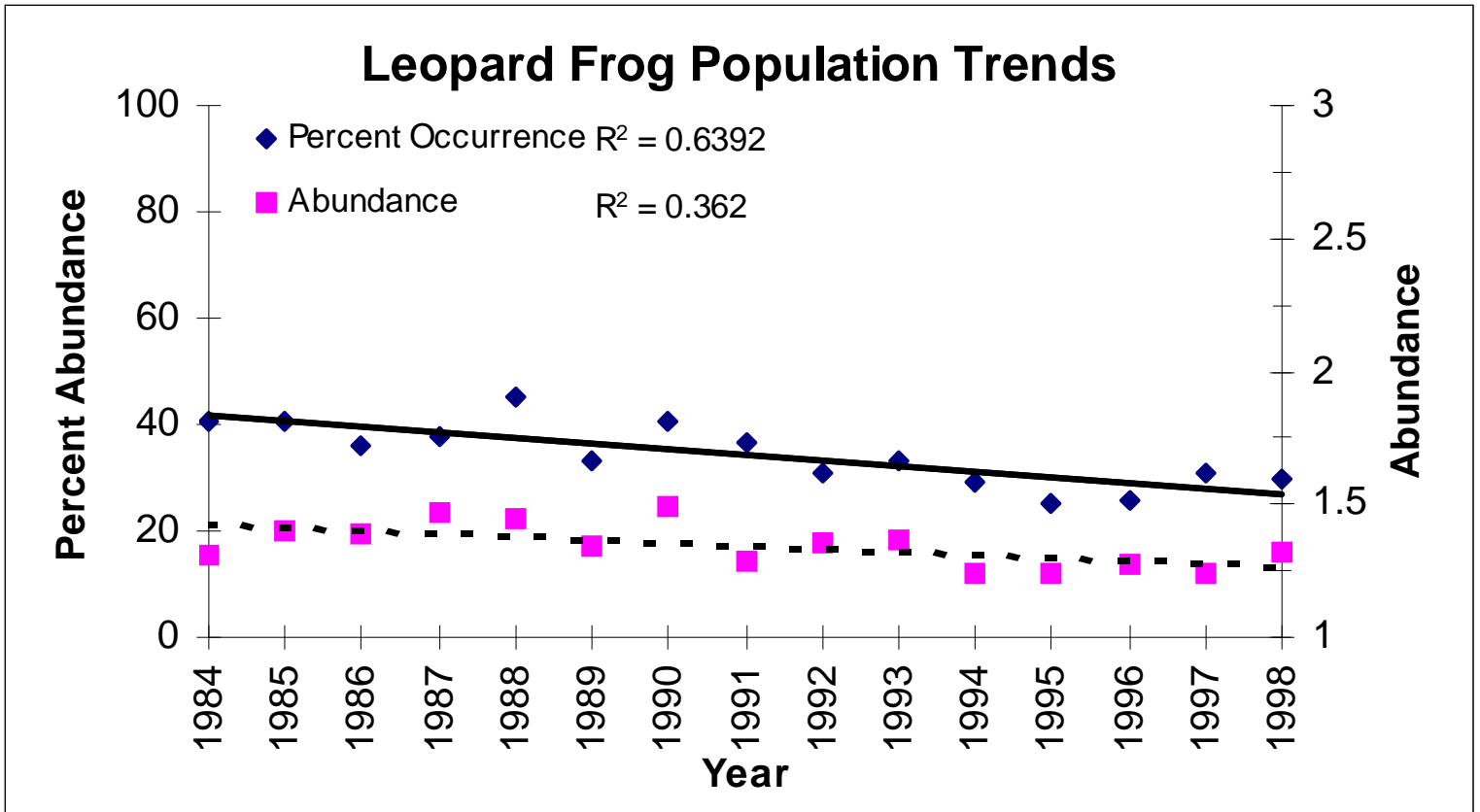


Figure 3. Continued.

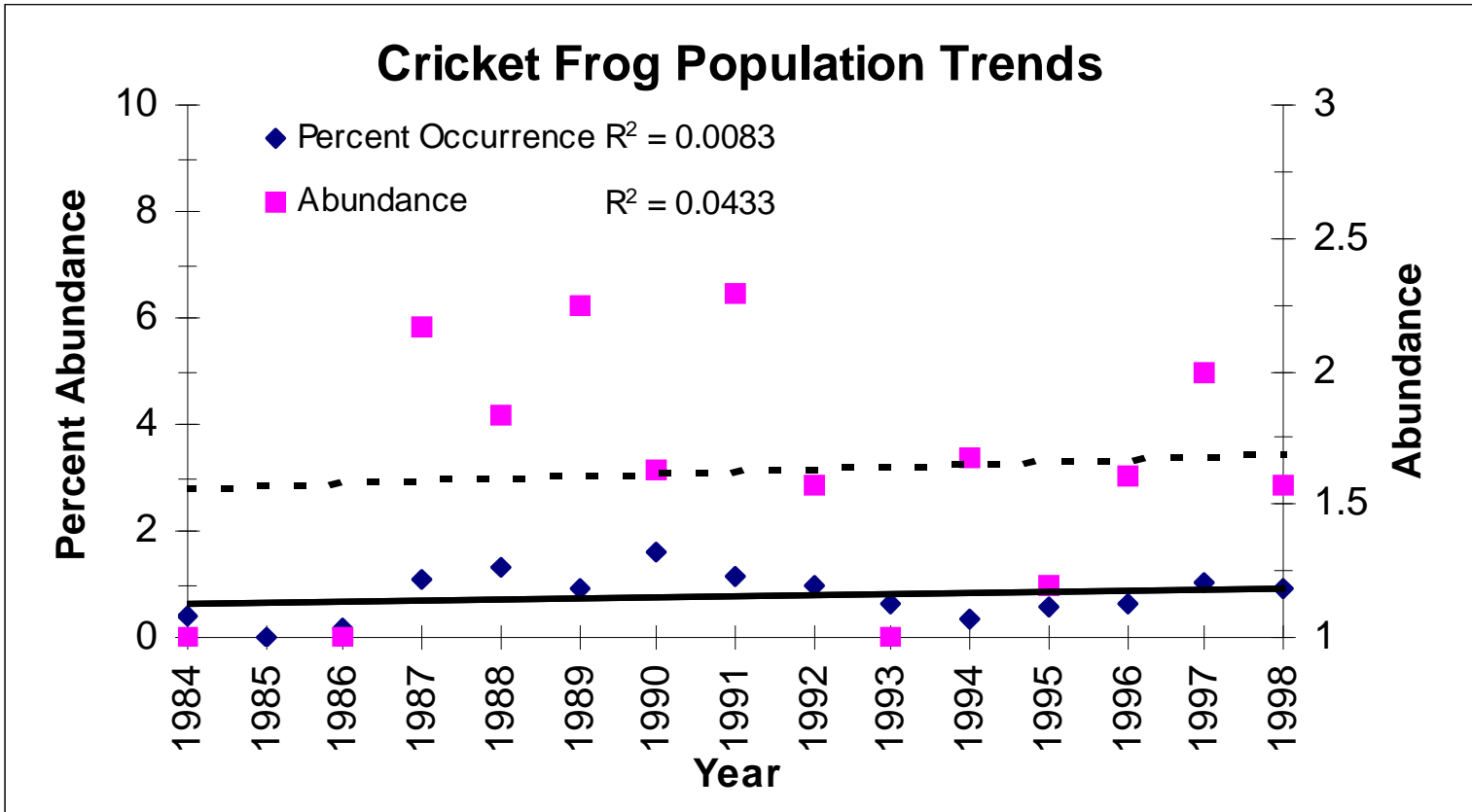
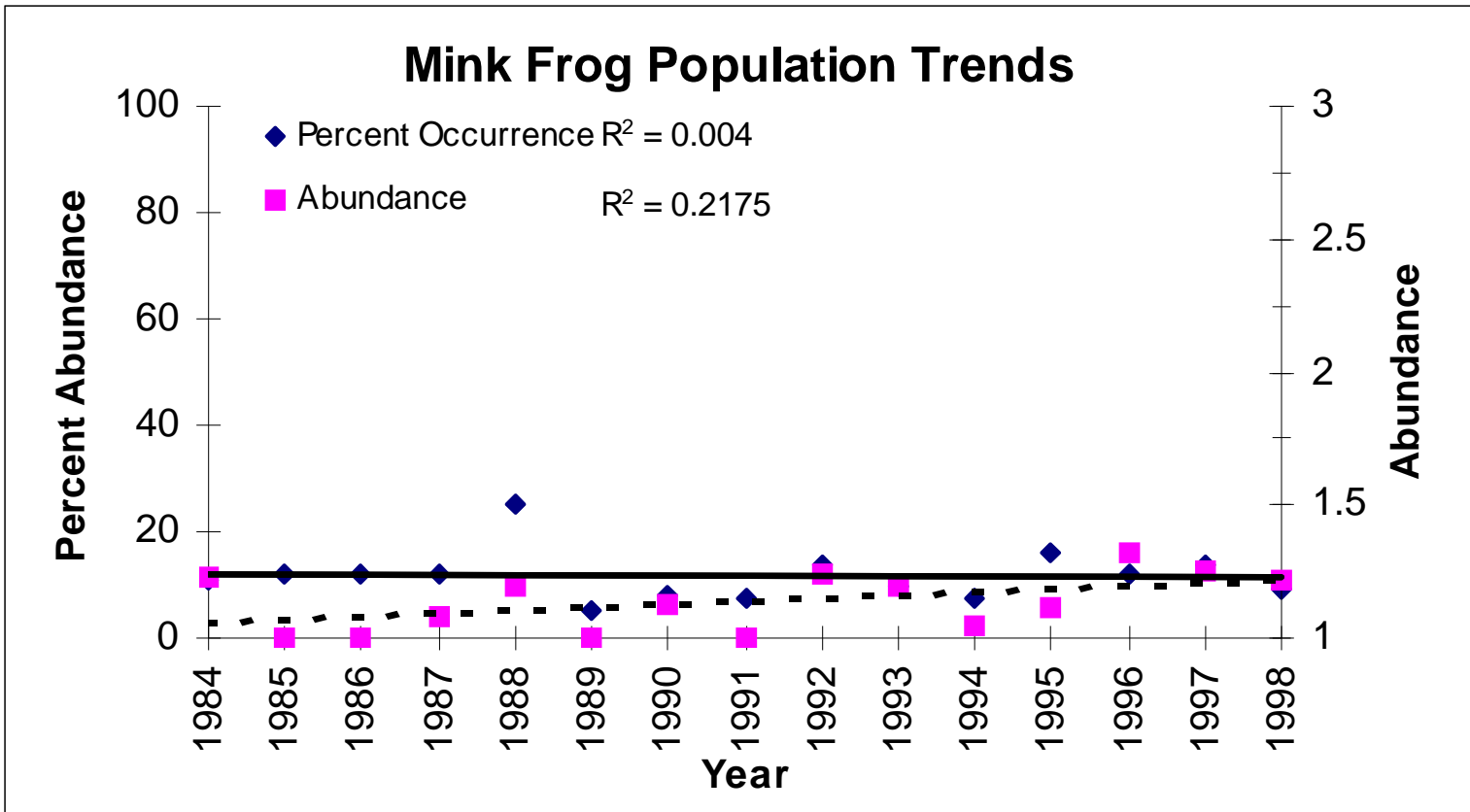
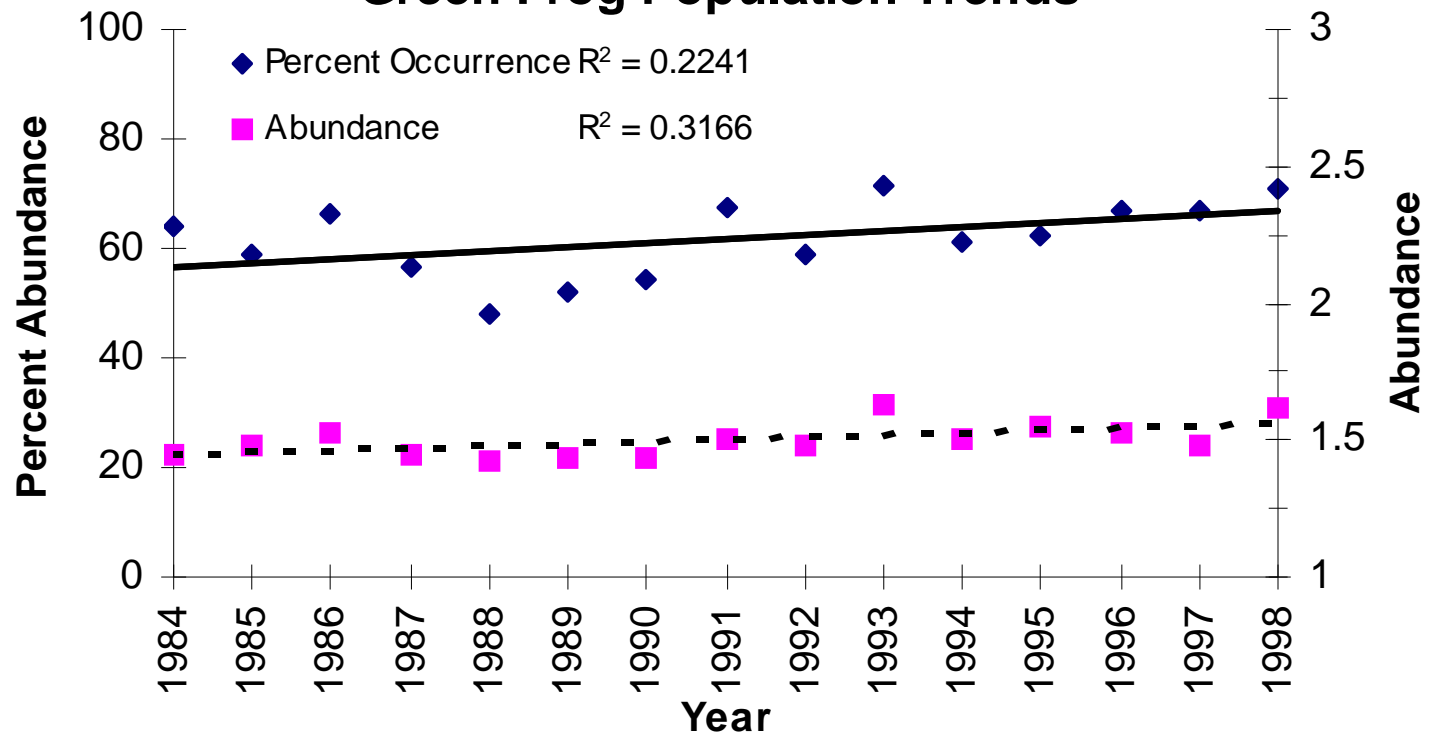


Figure 3. Continued.



Green Frog Population Trends



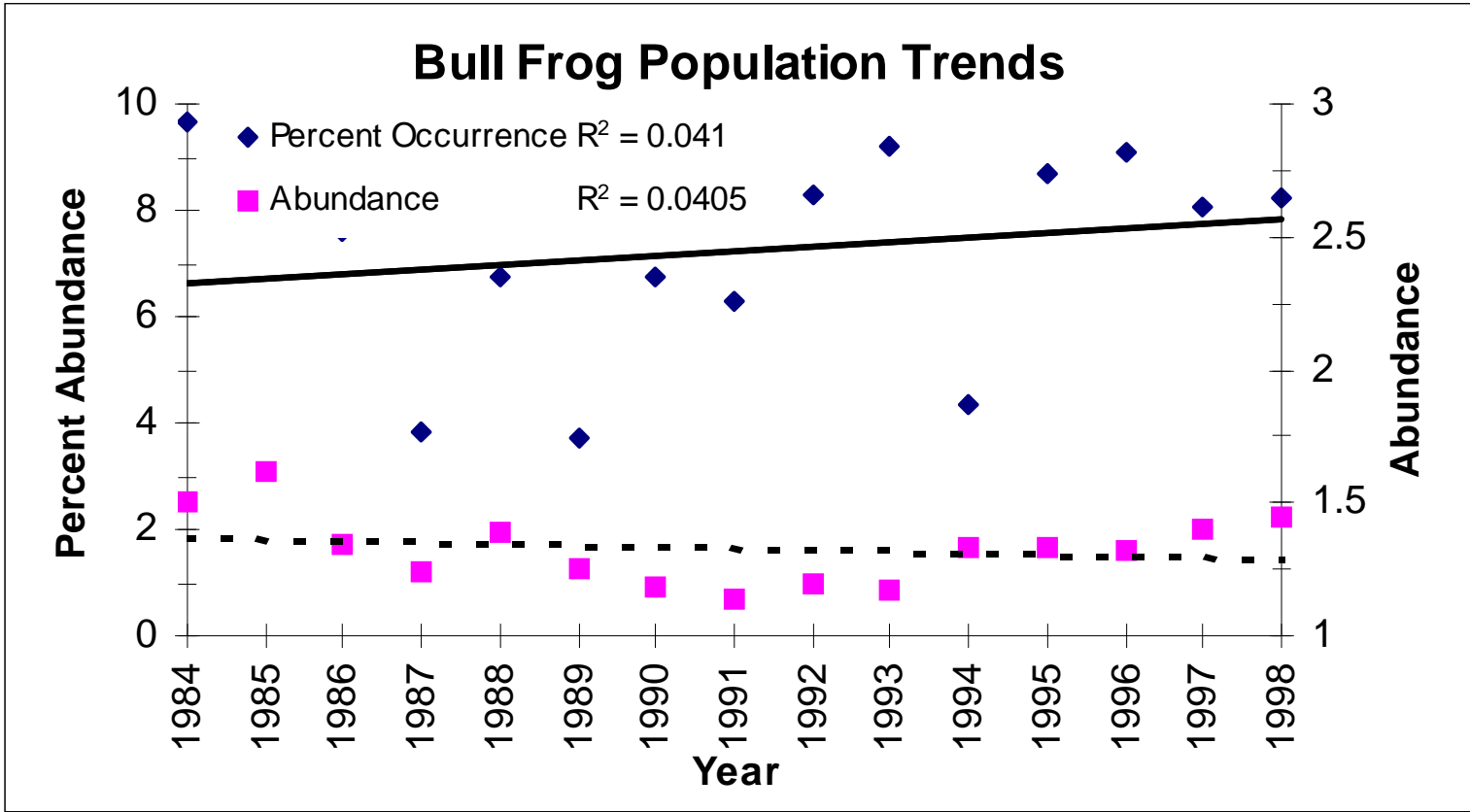


Figure 3. Continued.