



Monarch Monitoring

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Introduction:

As part of the Monarch Larva Monitoring Project, a team of students and a High School biology teacher from Sparta WI have monitored monarch eggs and larvae for six years at Fort McCoy, an army reserve in western Wisconsin. We monitored monarchs on common milkweed plants (*Asclepias syriaca*). For this project I have reviewed data relating to the correlation between temperature and number of eggs and caterpillars found for the last 6 years (1999-2005).

Hypothesis:

I hypothesized that warmer weather would correlate with higher numbers of monarchs, since monarchs develop more quickly under warmer conditions.

Methods:

- Monarch monitoring took place at Fort McCoy during the summers of 1999-2005. We monitored during the morning from June through August on a weekly basis.
- To collect the data we walked through our site looking for milkweed. We checked all plants for monarch eggs and caterpillars, and recorded the numbers of monarchs. I used the Farmer's Almanac to obtain average temperature for each summer, and looked for a correlation between temperature and monarch numbers.

Results:

- There is a negative correlation between mean temperature and the total number of eggs we observed (correlation coefficient = -0.72, $p = 0.07$). Interestingly, there was not a correlation between egg and larva number (correlation coefficient = 0.11, $p = 0.81$).

Discussion:

Contrary to my expectation, we found the fewest eggs and larvae during the warmest year (2005), and the most eggs and larvae during the coolest year. Conducting the project over more years might provide some insight into reasons that there was no correlation between and egg and larva numbers. Perhaps weather conditions affect survival; lower survival would lead to a lower ratio of larvae to eggs. However, in some years we found more larvae than eggs (e.g. 2002), which suggests that we may have undersampled eggs. If I did this project again I would keep weather data for the summer at the same time each day instead of using the mean temperature for the day. I think using an outside source for weather data may have skewed my results.

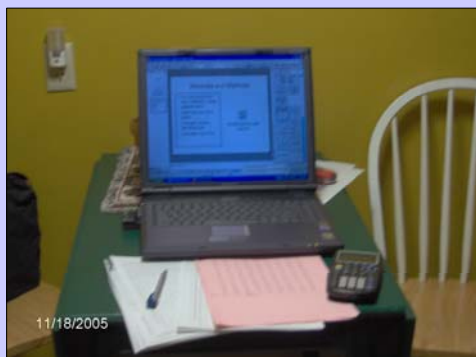


Fig. 1: My work station.

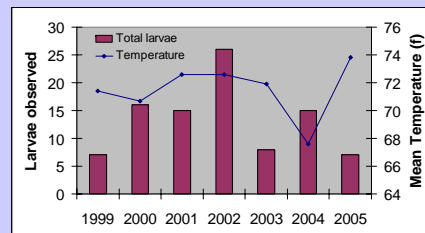
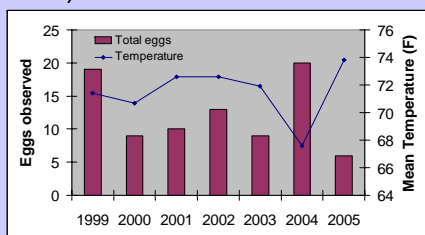


Fig. 2: Temperature and egg (top) and larva (top) numbers.



Fig. 3: (Clockwise from upper left) Monarch caterpillar, adult, egg, pupa.