

## Introduction

The Iowa darter, *Etheostoma exile*, is commonly found throughout the Lake Superior watershed. However, very little research has been done regarding sexual dimorphism in basic life history characteristics of Iowa darters. Specifically, we were interested in identifying variations related to total length, total weight, gonad weight, and somatic weight between males and females. During this study, Iowa darters were collected in May 2010 and 2011 from Inch Lake, a 31-acre soft-water seepage lake in Bayfield County, WI.

## Objective

To determine whether sexual dimorphism occurs in total length (TL), total weight (TW), gonad weight (GW), and somatic weight (SW) of Iowa darters in Inch Lake, Bayfield County, WI

## Methods

- Seined for Iowa darters in Inch Lake using a 40 foot seine
- Removed scales, otoliths, stomach, gonads
- Measured TL, TW, GW; calculated SW
- Analyzed sexual dimorphism in TL frequencies using a Kolmogorov-Smirnov test and mean TL using a two-sample t-test
- Analyzed sexual dimorphism in TL-TW, TL-GW, and TL-SW relationships using an indicator variable regression



## Results

- Length frequencies ( $p=0.2827$ ) and mean lengths ( $p=0.9627$ ) of males and females were not statistically different
- Weak difference in the relationship between  $\log(TW)$  and  $\log(TL)$  between males and females ( $p=0.09001$ ; Fig. 1)
- Strong difference in the relationship between  $\log(GW)$  and  $\log(TL)$  for males and females ( $p=0.0063$ ; Fig. 2)
- No significant difference between  $\log(SW)$  and  $\log(TL)$  between males and females ( $p=0.1724$ ; Fig. 3)

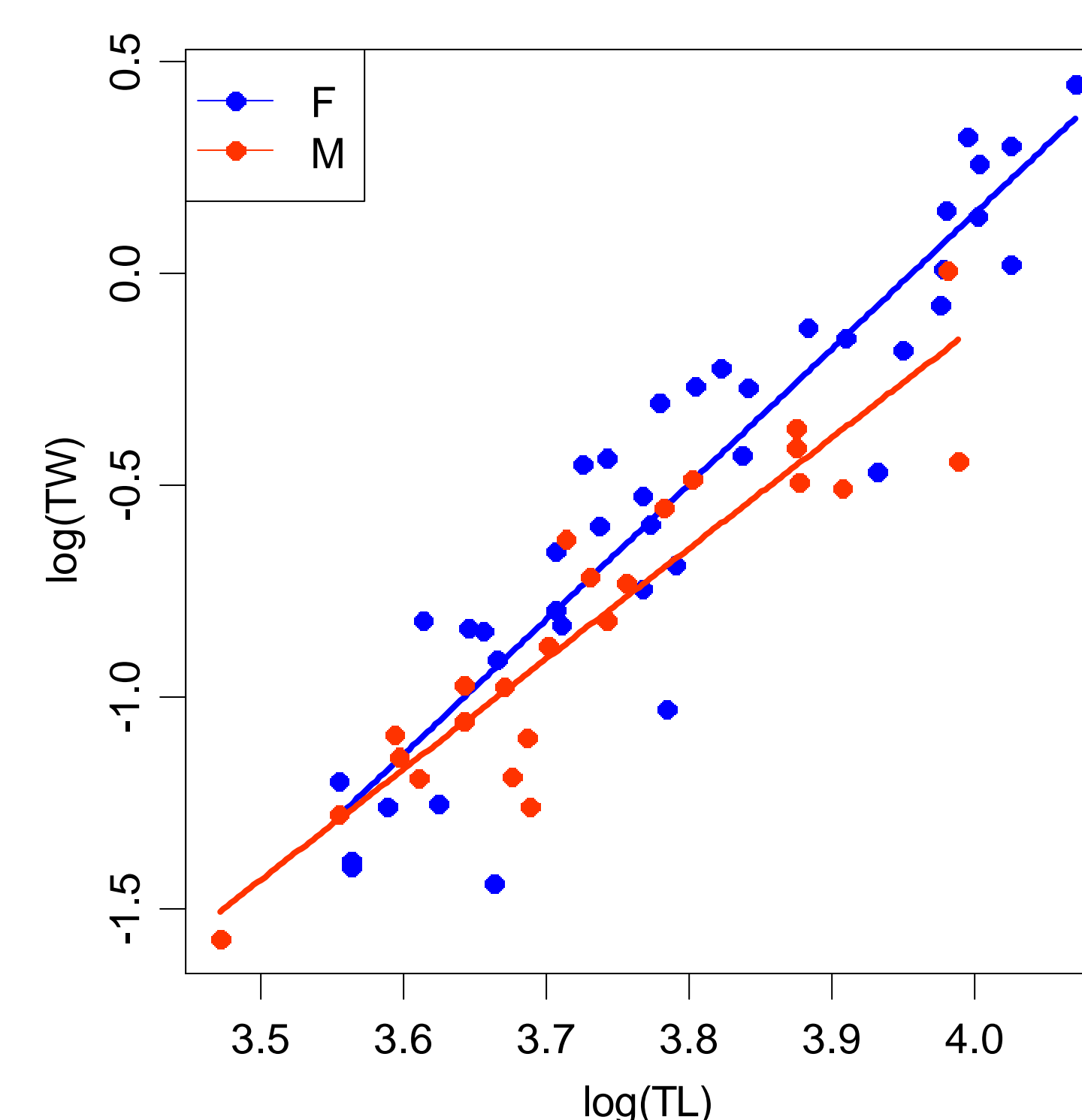


Figure 1. Log(TW) and log(TL) by sex

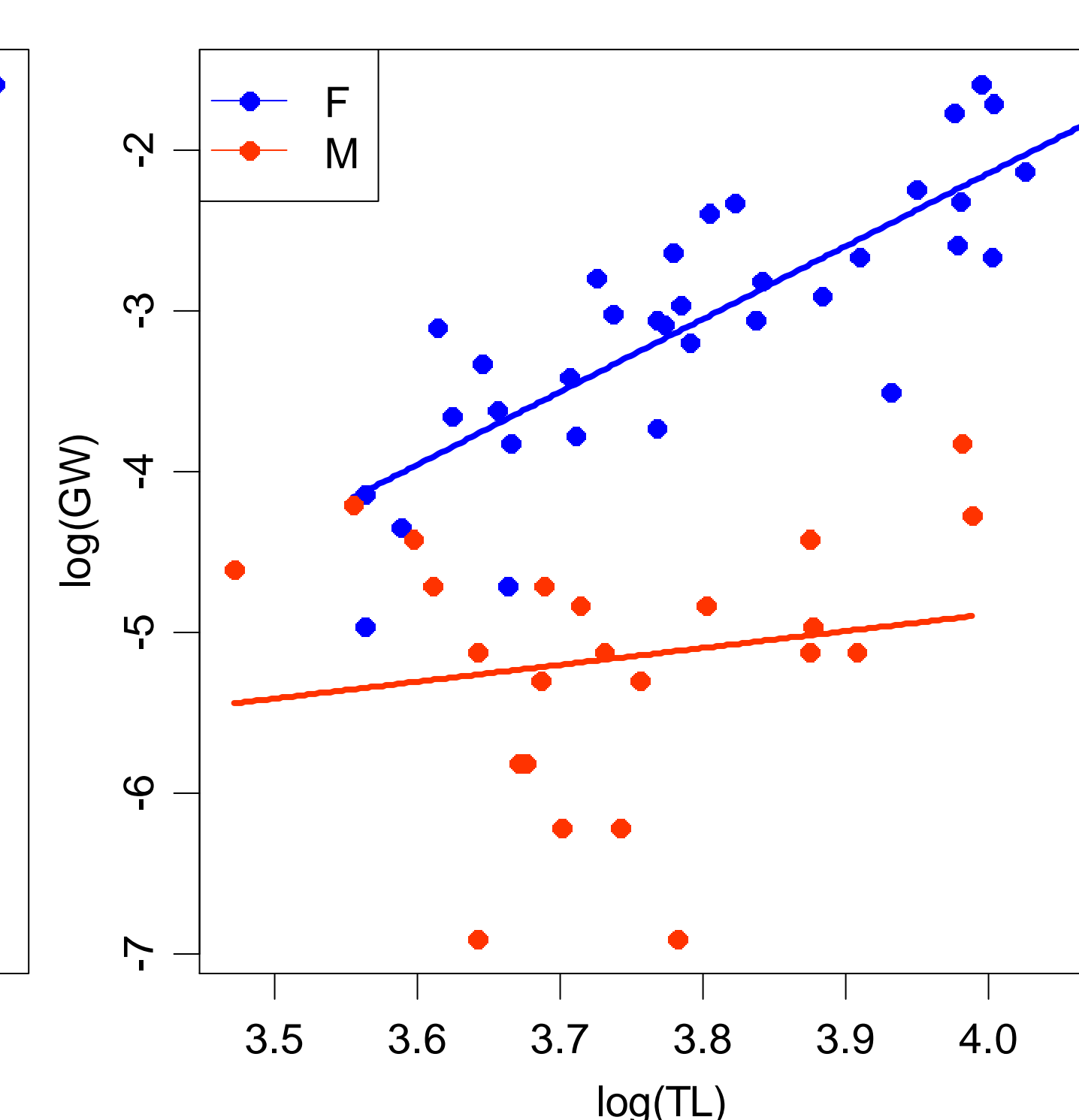


Figure 1. Log(GW) and log(TL) by sex

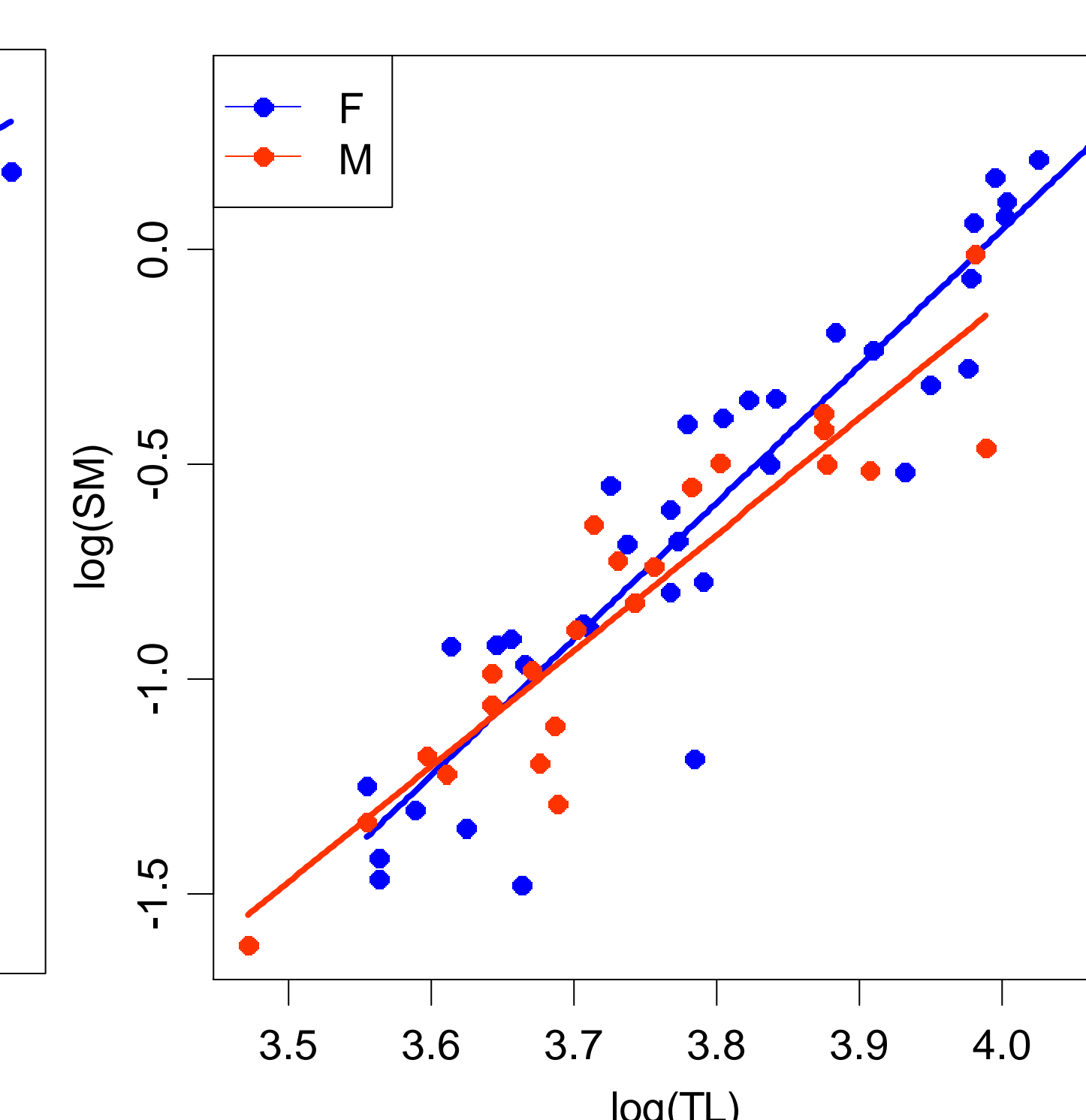


Figure 1. Log(SW) and log(TL) by sex

## Conclusions

- The weak difference in the TL-TW relationship between males and females appears to be due to the strong difference in the TL-GW relationship between the sexes.
- Additional research is planned to determine whether differences between males and females occur in age structure and diet.