Did Lampricide Treatments Impact Year-Class Strength of Lake Superior Lake Sturgeon?

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Introduction

Lake sturgeon (*Acipenser fulvescens*) have been cherished, hated and now protected. They are a species that is sensitive to the chemical lampricides used to control parasitic invasive sea lamprey (*Petromyzon marinus*). Understanding the extent of lake sturgeon sensitivity to lampricides can allow for modifications in control methods to better prevent impacts on non-target species.

Methods

*Lengths were recorded from juvenile lake sturgeon captured in gillnets off the mouth of the Bad River
*Ages were estimated from length based on a length-age key
*Year-classes were determined from capture year and age
*Year-class strengths were back-calculated using an exponential population growth model with a z value from the literature
*Compiled years of lampricide treatment
*Performed two-sample t-test to test for differences in mean year-class strength between treated and non-treated years

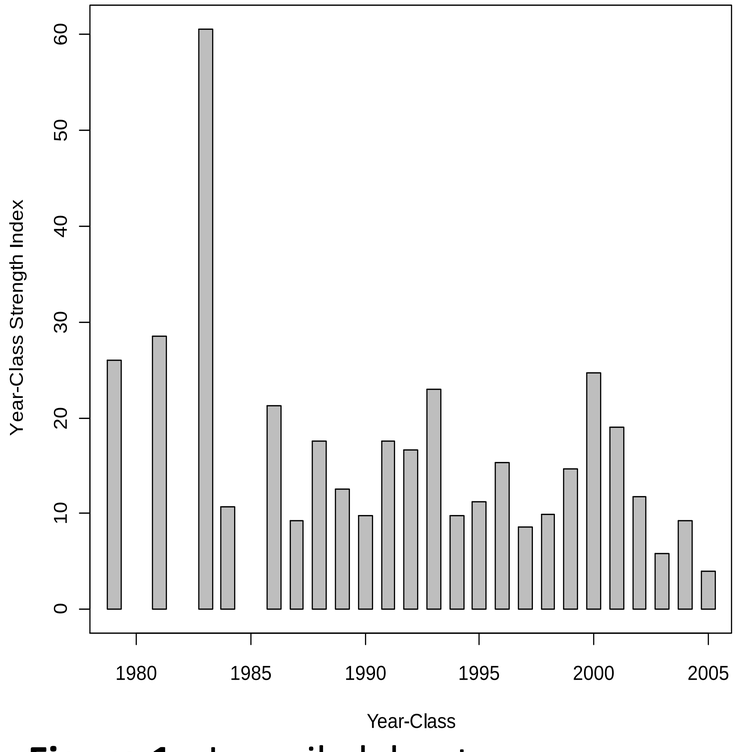

Figure 1: Juvenile lake sturgeon year-class strength from 1979 to 2005.

Results

*Year-class strength varied among years (Figure 1)
*No difference in mean year-class strength between treated and non-treated years
+ all chemicals combined (p=0.28)
+ each chemical separately (p>0.07)

Discussion

*Lampricides can be used to control lamprey with no significant impact on lake sturgeon year class strength
*Conclusions tempered by concerns about the validity of ages determined from length-age keys