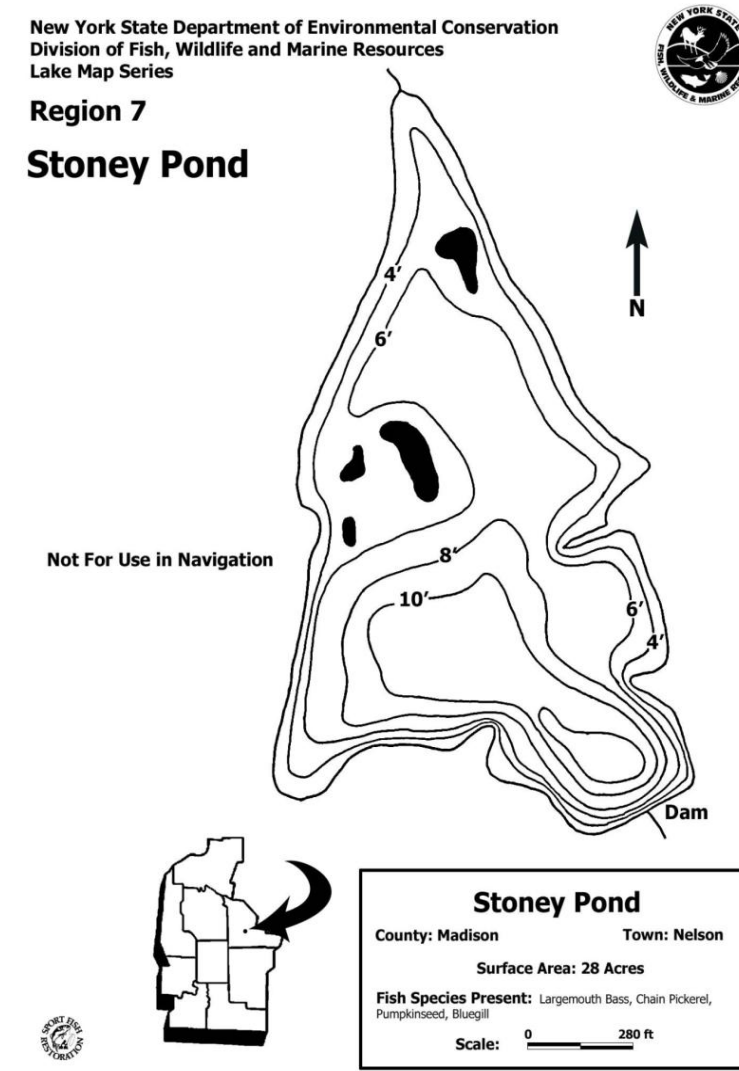
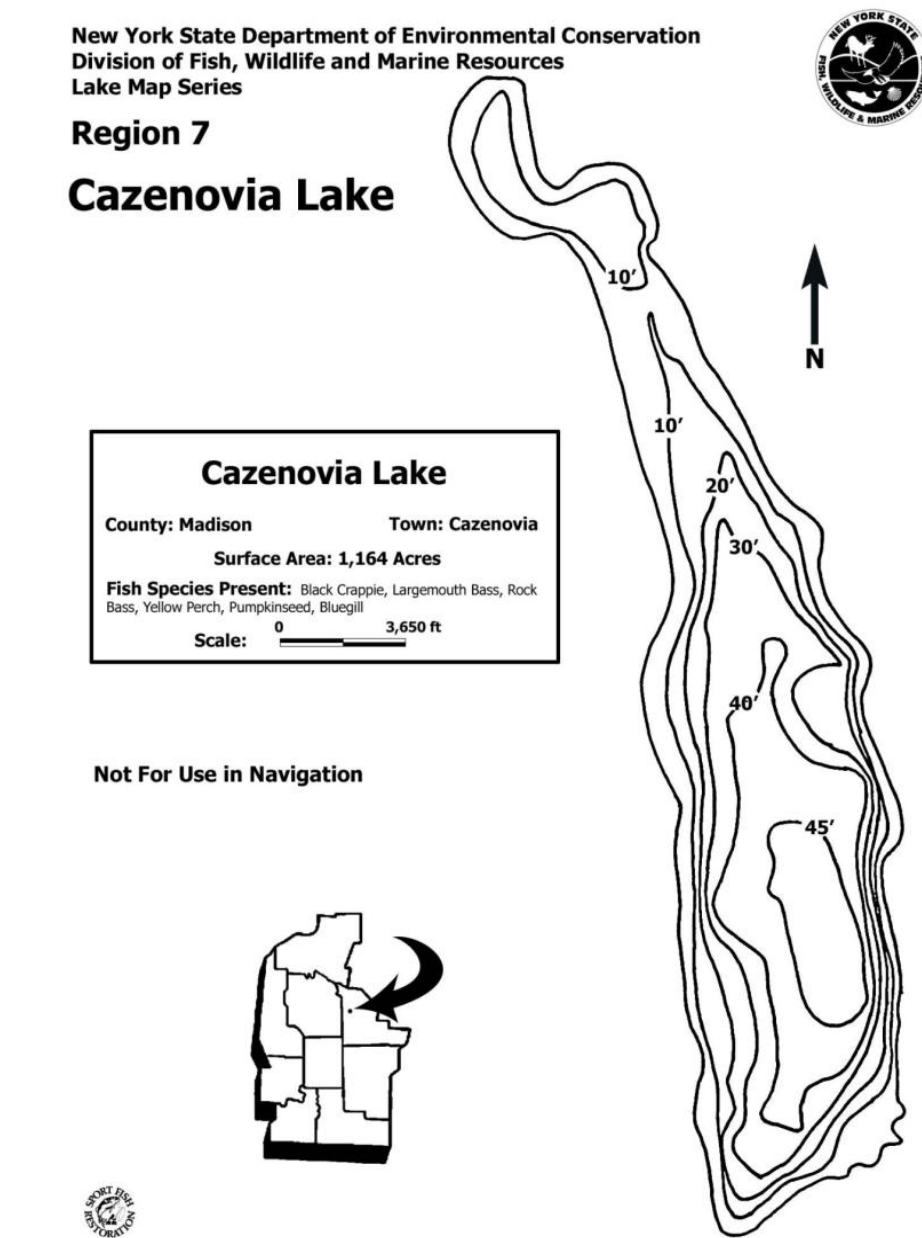


Fish Communities of Stoney Pond, Carpenter Pond, and Cazenovia Lake

Stoney Pond
 Located just outside of Cazenovia, New York, Stoney Pond is a 18 hectare man-made pond that was constructed as part of the 494 hectare Stoney Pond State Forest. The pond was created as a wildlife habitat.



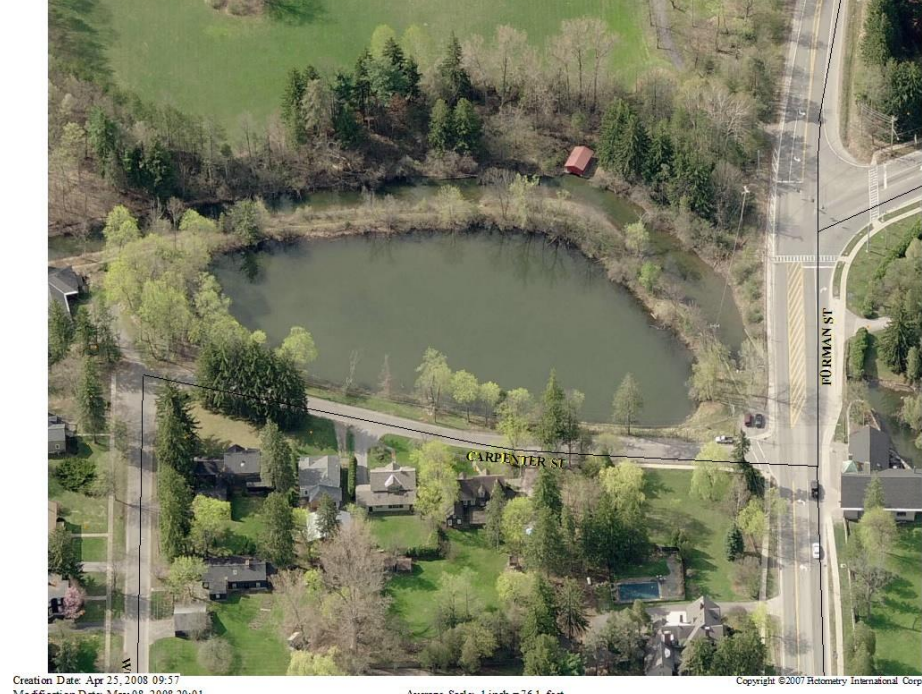
Lindsay Denhoff, John Livermore,
 and Thad Yorks
 ladenhoff@cazenovia.edu
 Cazenovia College, Cazenovia, NY 13035



Cazenovia Lake
 Cazenovia Lake is a shallow, 479 hectare lake formed as the result of a retreating glacier. Located in Cazenovia, New York, its shoreline is composed mainly of residential property with limited public access. The lake is no longer stocked with fish by the DEC.

Introduction
 The fish community present in a body of water is very important from an environmental standpoint as well as a point of interest for those who make use of the body of water. Fish communities serve as good indicators of environmental health, and communities of sport fish such as bass and pike can bring tourism to an area. The objective of this project was to analyze the fish communities of Stoney Pond, Cazenovia Lake, and Carpenter Pond in order to gain a better idea of what species of fish were prevalent in the littoral zone of each body of water. Also, we attempted to quantify the relationship between the length and weight of several different species of fish, as such relationships can be used to estimate fish weight when only the lengths of fish can be measured.

Abstract
 From August 2006 to October 2009, students enrolled in SM 101 and SM 112 at Cazenovia College have sampled fish communities in the littoral zones of Cazenovia Lake and Stoney Pond using loops of a 15-m seine and Carpenter Pond using minnow traps with 2.5 cm openings. Overall, 1966 fish were counted and identified to species. Of those, length and weight data were collected from 316 fish. The fish community in Cazenovia Lake was dominated by bluegill sunfish, *Lepomis* young of the year (YOY), pumpkinseed sunfish, yellow perch, and banded killifish (45%, 23%, 11%, 8%, and 4%, respectively). Similarly, Stoney Pond was dominated by bluegill sunfish, *Lepomis* YOY, pumpkinseed sunfish, Cyprinidae species, and black crappie bass (50%, 32%, 5%, 5%, and 3%, respectively). Carpenter Pond was dominated by banded killifish, golden shiner, brown bullhead, pumpkinseed sunfish, and bluegill sunfish (39%, 22%, 18%, 7%, and 4%, respectively). Additionally, bluegill sunfish, pumpkinseed sunfish, golden shiner, yellow perch, and brown bullhead each exhibited an exponential relationship between length and weight that had an R-squared value of 0.79 to 0.97.



Carpenter Pond
 Carpenter Pond is an approximately one hectare pond located near Cazenovia Lake in Cazenovia, New York. It is in the Chittenango Creek watershed.

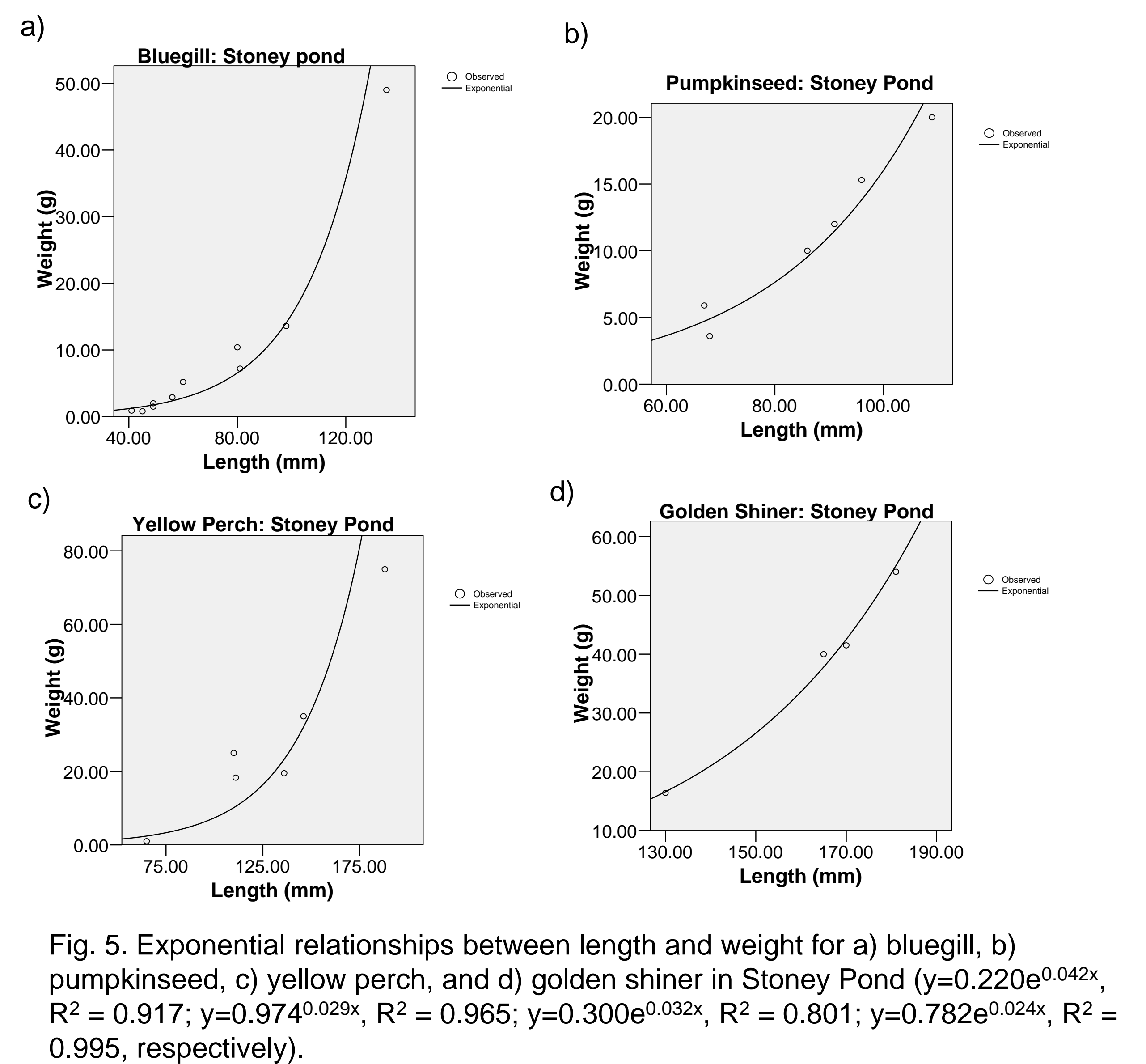
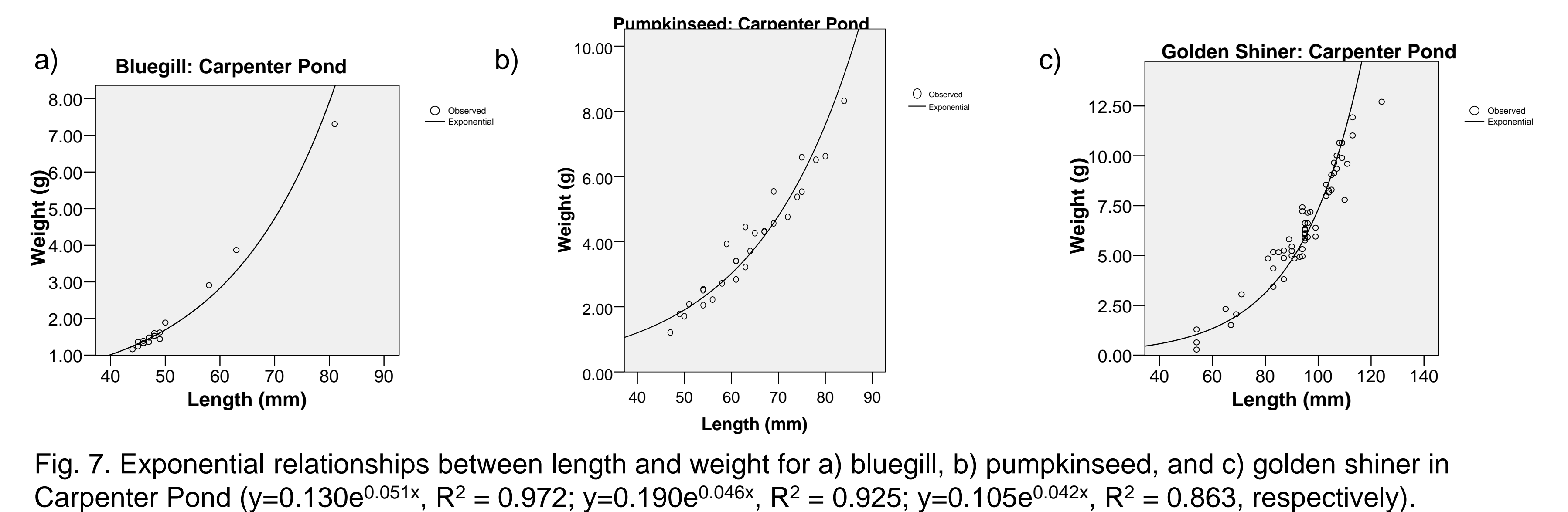
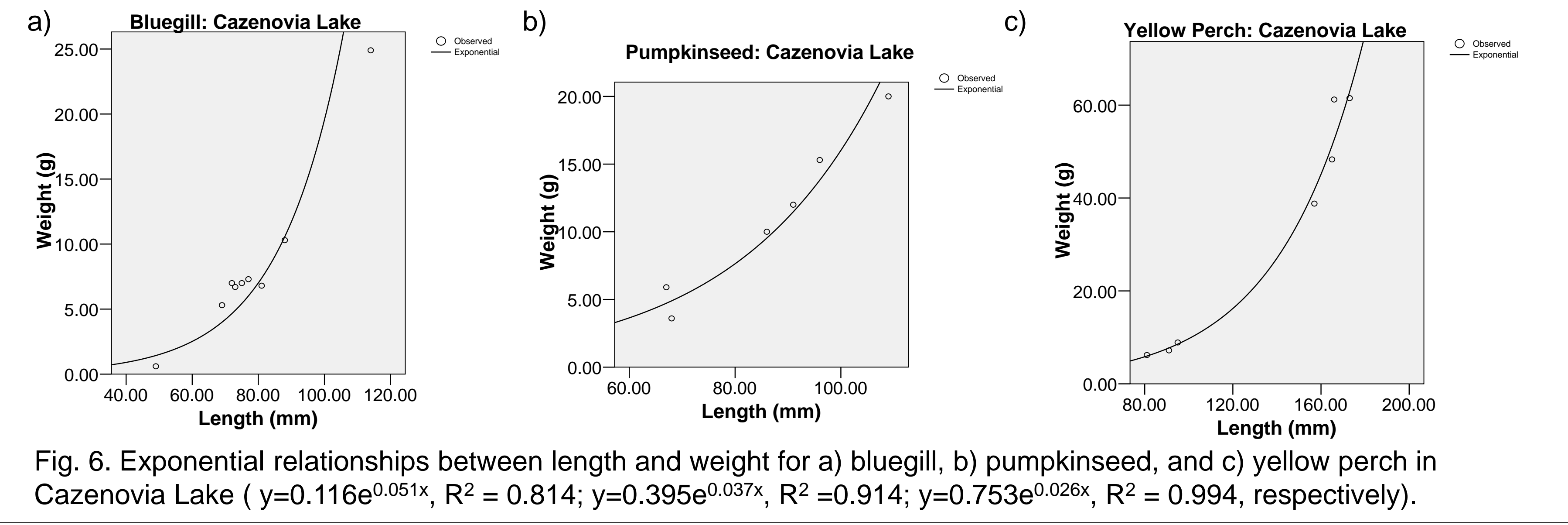


Fig. 1. SM 101 sampling Cazenovia Lake in Fall 2008.

Methods
 From August 2006 to October 2009, students enrolled in SM 101 and SM 112 at Cazenovia College (Fig. 1) have periodically sampled fish communities in the littoral zones of Stoney Pond and Cazenovia Lake using a 15-m seine, and Carpenter Pond using minnow traps with 2.5 cm openings. Overall, 1,966 fish were identified to species, and length and weight data were recorded for 316 of those fish.



Results and Discussion
 The fish community in Cazenovia Lake was dominated by bluegill, *Lepomis* YOY, pumpkinseed, yellow perch, and banded killifish (Fig. 2). Similarly, the fish community in Stoney Pond was dominated by bluegill, *Lepomis* YOY, pumpkinseed, Cyprinidae species, and black crappie bass (Fig. 3). However, Carpenter Pond was dominated by banded killifish, golden shiner, brown bullhead, pumpkinseed, and bluegill (Fig. 4). Carpenter Pond is a comparatively small pond, which may account for its different fish community. Also, Carpenter Pond was sampled with minnow traps that larger species of fish may not have been able to access, while Cazenovia Lake and Stoney Pond were sampled with a seine that resulted in less size discrimination. Exponential relationships were the strongest between the length and weight of pumpkinseed and golden shiner in Stoney Pond, and weakest for yellow perch (Fig. 5). In Cazenovia Lake, the exponential relationship between length and weight was particularly strong for yellow perch, and weak for bluegill (Fig. 6). In Carpenter Pond, a strong relationship was exhibited between the length and weight of bluegill, but a weak relationship was exhibited for golden shiner (Fig. 7).

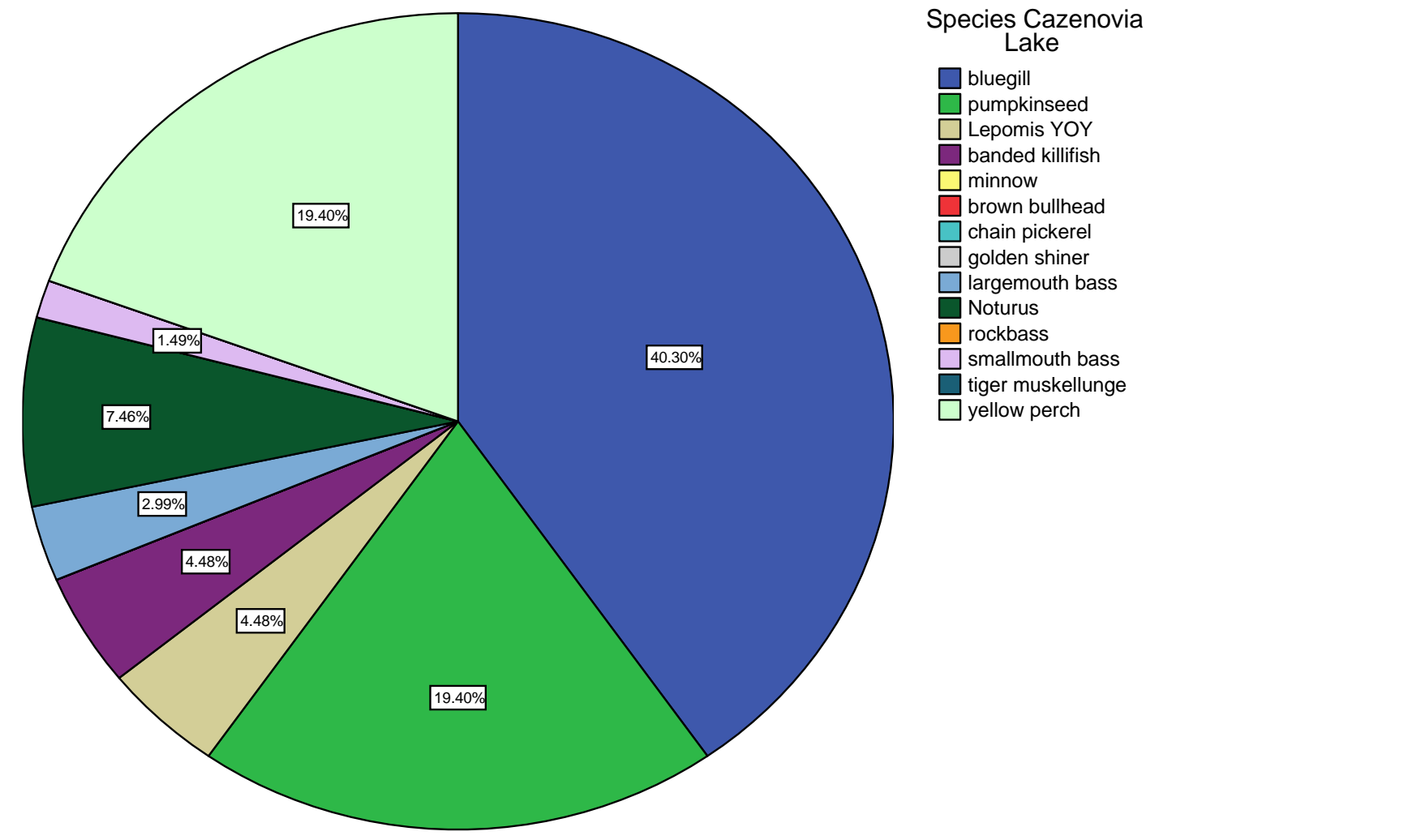


Fig. 2. Percents of each species present in Cazenovia Lake.

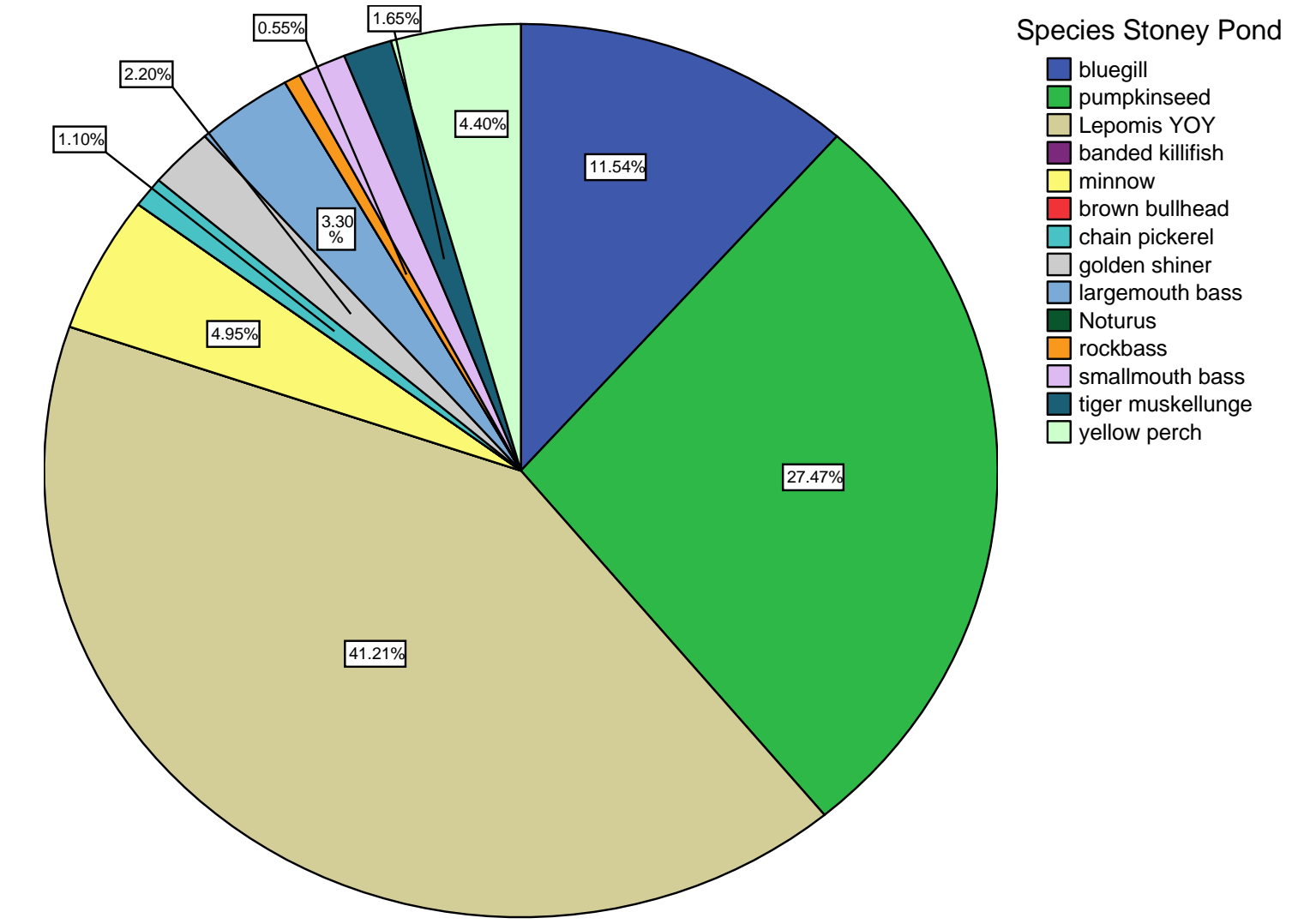


Fig. 3. Percents of each species present in Stoney Pond.

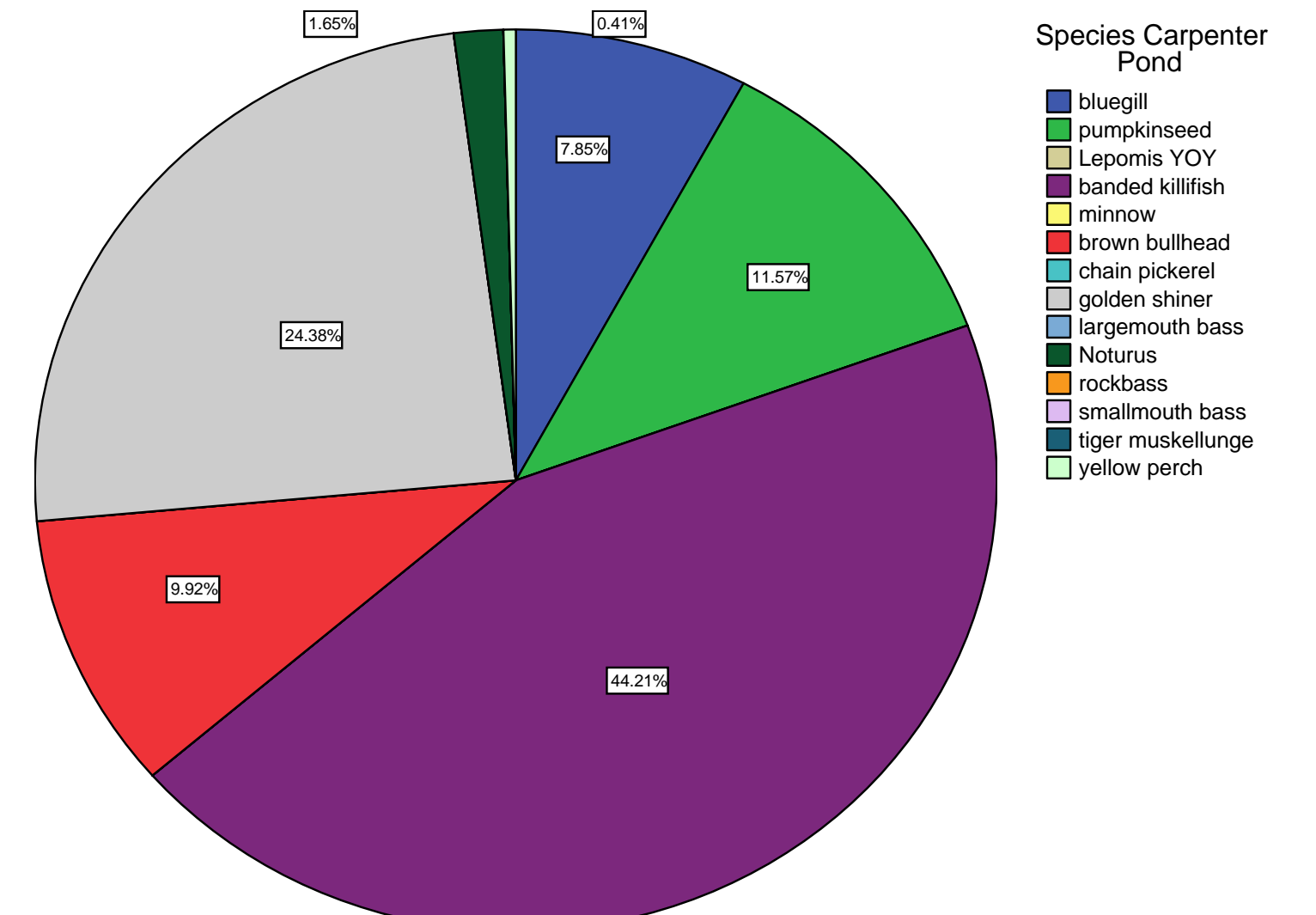


Fig. 4. Percents of each species present in Carpenter Pond.