Biol 119 – Herpetology
Lab 1: Introductions, Using the Field Guide
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Lab objectives
The objectives of today’s lab are to:
1. Get to know each other.
2. Learn some facts about local amphibians and “reptiles”
3. Learn to use a field guide.
These skills will help you with future parts of this course (and other classes) and set the stage for future labs.

Tips for learning the material
For this lab and all the following labs, make sure that you read the lab before coming to the lab session. This will allow you to make the best use of your time in the lab. Also refer to the course study guide, available on the course website, for many other tips on learning the material.

Since this is the first lab, we will not be dealing with specimens, but learning to use the field guide will help you on the upcoming fieldtrip and with future labs. Work through this lab and answer the questions that are posed in it. The questions are in bold text. The questions should help guide you through the material and get you to think about the material. Some of the questions will be discussed at the beginning of next lab, so be prepared to answer and talk about them.

If you are unsure of what you are looking at or the answer to a question, discuss it with a fellow student. Working in partners is a productive way to reason through difficulties. Your instructors are also excellent resources that will be able to help you (although they won’t just answer all the questions for you).

During today’s lab, you will also listen to a short lecture on identifying local amphibians and “reptiles”. Take notes as you look and listen. The material will help you with next lab, when you will be working with specimens of local herps.
Exercise 1: An introduction to your field guide
A. Field Guide to Reptiles and Amphibians of Eastern/Central North America
Most of today’s lab will be spent getting familiarized with your field guide. It is important to understand how it is organized and what kind of information you can glean from it so that you can use it effectively in the field and in future labs. The field guide will be particularly useful for identifying local herps, and ultimately you will be able to identify many of these species on sight and in nature without having to catch them. Next week, you will have access to many of the species that live in Massachusetts and will start learning to identify them (pay attention to today’s lecture on identification of these animals).

Notice that your field guide is divided into several sections. After the introductory section are the Plates, which feature species names, pictures, identifying features, and references to where more detailed information can be found in the Species Accounts section. Similar species are grouped together on the same plate, and arrows are used to show identifying features for each species. These features are also verbally described under the name. Unfortunately, the range maps are in the Species Accounts, and so a disadvantage of this guide is that it takes some effort to figure out which species live in which area. Since only a subset of the species in the guide occur in Massachusetts, it is important to familiarize yourself with the species that do live in our area.

Flip through the Species Account section of the field guide and, using the range maps, make a list of species that live in Massachusetts (hint: the only lizard that has lived in Massachusetts is now extirpated: the five-lined skink, Eumeces fasciatus). You may also wish to mark the species in the Plates that occur in Massachusetts for easier use in the field.
Also notice that in the Species Accounts section, your field guide gives you the common and scientific names, a range map, and information on identification and some natural history facts about each species. If you ever find it difficult to make a positive ID simply using the pictures on the plates, this section gives you more detailed information about each species, including a list of similar species that will help you identify an animal. When you are in the field, and see an animal that you can’t identify, your first step should be to make sure that you are within the species’ range (check the map). If this still doesn’t help, consider things like the habitat that each species inhabits, times and dates of activity, and other natural history information. Next week you will practice identifying specimens in the lab, but note that a preserved specimen looks quite different from a live one in the field…

Use your field guide and Massachusetts species list to answer the following.

1. How many species of each of the following taxa occur in Massachusetts?

   Anura:  
   Urodela:  
   Testudines:  
   Serpentes:  

2. What is the most species rich genus in Massachusetts? (Hint: this genus has been renamed *Lithobates* due to recent taxonomic work. This new name is preferred in this class, so you should change it in your field guide.)

3.a. What is one species from the genus *Ambystoma* that lives in Massachusetts (other than *A. opacum*)?

b. What is one way in which the species you chose differs morphologically from *A. opacum*?

c. What is one way in which these two species differ ecologically?
4. You are hiking in the Quabbin Reservoir and you spot a snake near a stream, basking on a rock. You catch it and it promptly musks you and bites you. It is about 60 cm long, has three longitudinal yellowish-cream stripes on its body. You take a closer look and notice that the lateral stripes are on the second and third scale rows dorsal to the ventral scales. What species have you caught?