Comments on Chapter 27

First section (27.1) reviews evidence for a warming planet and reinforces what was presented in more detail in lecture.

Much of the rest of the chapter is focused on how our changing environment is affecting plants and animals.

Numerous specific, and detailed, examples are given making their treatment of the topic a bit overwhelming.

So you should focus on the general principles that are being described and you only need to know about some of the specific examples they give along with those I presented in lecture.

Specifically:

Section 27.2

> You should know about the expected changes in the size of endotherms in a warmer world and Bergmann's Rule (Ecological Issues section in Chpt 7 pages 146-147).
>
> How the physiological response of ectotherms would differ and why the predicted response of metabolism in the tropics would be large despite the smaller rise in temperature (see Fig. 27.4).
>
> You can ignore the rest of this section (the example for porcelain crabs (including Fig. 27.5) and the information about trees) but you should be able to explain why tropical ectotherms are more threatened by climate change than species from the midlatitudes.

Section 27.3

> Know the term phenology and be familiar with the example given for the bird called the great tit (see text and Fig. 27.8). You don't need to know the exact scientific name of the species or the name of the investigator whose results are being highlighted.
>
> You don't need to know the other examples given in this section but you should know why overall shifts in phenology are greater at higher latitudes.

Section 27.4

> You can skip over most of this section except for the information that was also mentioned in lecture about latitudinal shifts in plant species in the Santa Rosa Mountains (see Fig. 27.15 and relevant text).

Section 27.5

> Be familiar with the theme of the section and the specific examples given for caribou (including Fig. 27.16) and the mountain pine beetle (page 604).

You can skip Sections 27.6 & 27.7

Section 27.8

A useful review of information covered in lecture but note that if exact values given differ from those in lecture, you should go with the ones I gave in lecture.

Section 27.9

Understand the experiment, results, and implications of the field study described in the special section on pages 612-613. Be able to answer the 2 questions that follow the bibliography.

Beginning on page 614, be sure to understand the bioclimatic envelope model that has been used to examine the potential response of plants and animals to climate change. Pay attention to Figures 27.27, 27.28, 27.29, 27.31, & 27.32.

You can skip Section 27.10

Finally, at the end of the chapter you should be able to answer the following study questions using the material given in the chapter and/or the material presented in class: #s 1-7, 11, & 13 found on page 620.