

11a. Osmoreguation

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Pre-class materials

! Let's finish strong!

- We have **only 3** class sessions left to finish all of our content. After that, we have final student presentations.
- **Attendance is mandatory** at all remaining classes.
- **Come prepared by reading the book**, and our discussions can **probe deeper**. This will make your **homeworks, labs, and papers** so much easier.
- **Remember that effort counts**, and will be taken into account in the final grades. If your grade is on the borderline, effort will translate into a “bump up”. You show effort in many ways, including attendance and sincere participation.

Announcements/Reminders

- Due Monday Design 3 draft [[turn in](#)], please do your peer review for design 3 by Wednesday, and email to the authors with cc to me.
- TEAMMATES will be on hold and Monday's session will be combined with the week after Thanksgiving :).
- The EEG group lab is due at the normal time by email to your TA. No lab sessions this week.
- Short week this week, happy Thanksgiving!!

Week 14 Discussion Groups

Group	Partner 1	Partner 2	Partner 3
1	Logan B	Morgan	Justin

Group	Partner 1	Partner 2	Partner 3
2	Adry	Christina	Krystal
3	Garrett	Maisie	Kylie
4	Mayuka	Richard	Alvin
5	Kirsten	Matthew	Sasha
6	Logan M	Anna	

(Last Friday)

- If you missed last Friday, familiarize yourself with the reading assignment and definitions, water budgets, and challenges of terrestrial, freshwater, and marine environments [\[last week\]](#).

Monday

- We will finish the [\[Osmoregulation discussion\]](#) [\[slide deck\]](#) and start [\[Excretion questions 1,2\]](#) [\[slide deck 2\]](#) which we will finish next week.
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- Be prepared to diagram and discuss the routes of water and ion inflow and outflow for terrestrial animals (human), freshwater fish (q1), marine fish (q2), and marine elasmobranchs (q3).
 - This time, start with the osmotic gradient facing the animal. Clearly label the $mOsm$ of the media outside, as well as $mOsm$ inside (use the extracellular fluid as the inside compartment).
 - Consider the gradient facing the skin :) also.
 - Label special organs or sites of major exchange.
 - Indicate **water** and **ions** separately, and whether it is active or passive movement, and for ions - which ones (details matter).
 - **Look in your book!**
- For excretion think about nitrogenous waste (osmoreg question 5) and what mechanisms organisms have for their excretion (excretion questions 1,2)

Table 2: Organs involved in osmoregulation

Group					
Fish	Kidneys	Gills	Bladder	Intestines	
Amphibians	Kidneys	Gills	Bladder	Intestines	Skin

Group			
Reptiles	Kidneys	Intestines	(Salt Glands)
Birds	Kidneys	Intestines	(Salt Glands)
Mammals	Kidneys		

Osmoregulation Podcast

<https://youtu.be/1vQxLFoPCmM>

For Next Time

- Happy Thanksgiving!
- We will pick up Excretion the Monday after Thanksgiving [[questions 3](#)] [[slide deck 2](#)] and have a fascinating discussion on reptile and bird excretion [[notes](#)]

i Reminders and materials