Ecology 6

- turn in Research #3 now
- send answer to iClicker Question 34A now.
- Course Evaluations I: Biology department. until ~12:15
- disturbances & diversity
- Research #3 answers & new data
- iClicker Question 34B

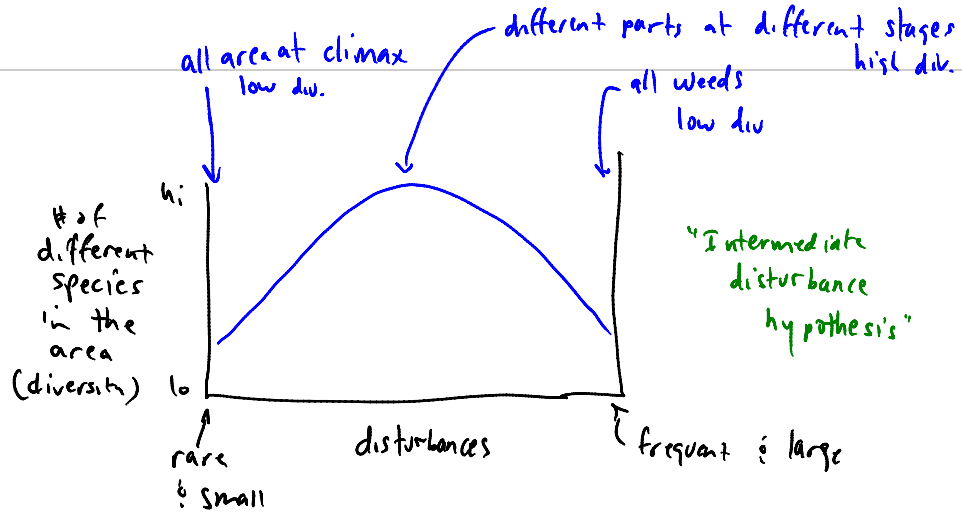
check your grades on-line

No lab **NEXT** week;
⇒ Phylogenetic Collection report due to TA's mailbox in W-3-021 at regular lab time.

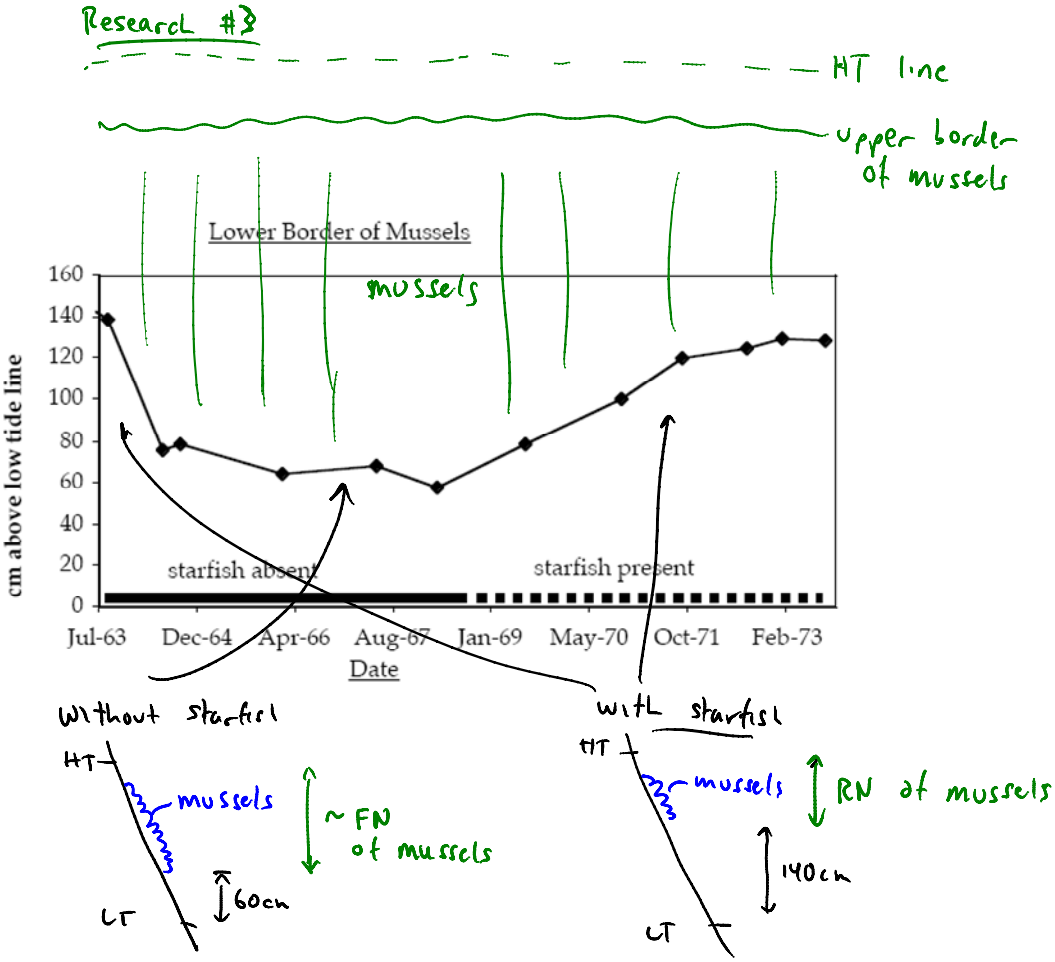
Final Exam Wednesday 5/19 11^{30} - 2^{30} (info in Ecology 5)
- Last names A - G in McCormack Cafe
- Last names H - Z here (1 bonus point for going to correct place!)

Don't forget SimUText (Ecology 2) - it will be on the final!

iclicker question from last time (#33B)



Research #3



1) What is the approximate lower limit of *Mytilus'* Fundamental Niche? ~ 60 cm

2) What is the approximate lower limit of *Mytilus'* Realized Niche? ~ 140 cm

3) Why does the removal of the *Pisaster* only affect the lower border of the *Mytilus*

starfish need to stay wetter than mussels
∴ stay nearer LT line
& don't eat higher up due to drying & predation

starfish | no starfish | starfish

Organism	July 1963	August 1966	March 1968	June 1971	April 1973
none	11	0	0	0	0
barnacles	47	5	5	0	0
mussles	1	95	95	100	100
seaweeds	30	0	0	0	0
sponges	5	0	0	0	0

On a similar plot, they did not remove *Pisaster* and they saw:

Organism	July 1963	August 1966	March 1968	June 1971	April 1973
none	10				14
barnacles	41				38
mussles	5				2
seaweeds	38				36

Organism	July 1963	August 1966	March 1968	June 1971	April 1973
none	11	0	0	0	0
barnacles	47	5	5	0	0
mussles	1	95	95	100	100
seaweeds	36	0	0	0	0
sponges	5	0	0	0	0

On a similar plot, they did not remove *Pisaster* and they saw:

Organism	July 1963	August 1966	March 1968	June 1971	April 1973
none	10				14
barnacles	41				38
mussles	6				2
seaweeds	38				36
sponges	5				5

4) Describe these results: what kinds of creatures were found on the rocks before the *Pisaster* were removed and what kinds were found during the removal?

with starfish - very diverse ∴ almost no mussels

without starfish - all mussels (non-diverse)

5) Why did removing the *Pisaster* have the effect that you described in your answer to question (4)?

ⓐ competition ∴ predation starfish eat mussels & keeps their population low

mussels out-compete all others for rock space

∴ starfish leave space for other organisms

⇒ starfish called "keystone predator"

ⓑ disturbances ∴ succession - starfish predation = disturbance

clears open rock ∴ succession occurs in its wake

⇒ higher diversity

6) Why did they have to collect data from a plot where *Pisaster* were not removed? That is, what explanation(s) does the result of this control experiment rule out?

control experiment

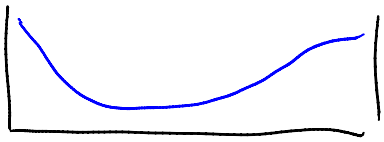
Q: is change observed due to starfish removal or something else (pollution, etc.)

∴ need to show no change if starfish left alone

newer data

El niño

H_2O temp



small change in temp

⇓

big change in predation

⇓ ?