

Ecology 5

- send answer to iClicker Question 33A now.
- Research #2 due NOW (to bin in back)

Species Interactions 3

- Mutualism (+,+)
- Current Research #2
- Community Structure
- iClicker Question 33B

Due in lab **this** week:

⇒ Phylogenetic Collection

⇒ Animal Behavior Report

Final Exam Wednesday 5/19 11³⁰ - 2³⁰ (info in Ecology 5)

- Last names A - G in McCormack Cafe
- Last names H - Z here (1 bonus point for going to correct place!)

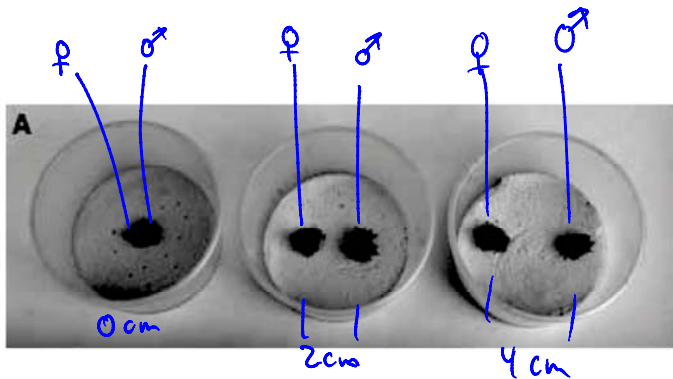
Don't forget SimUText (Ecology 2) - it will be on the final!

Current Research III due Friday May 7

Mutualism (+,+) interaction increases fitness of both
both reproduce more when together

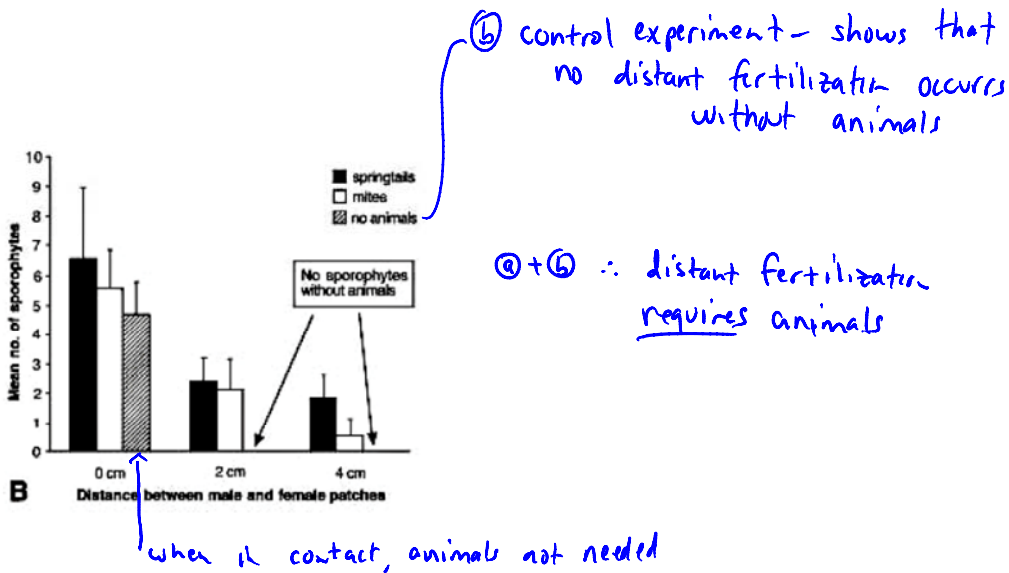
ex. Mites/Springtails fertilizing mosses

experiment 1 ① plant g/phytes



- ② 3 conditions
 - + springtails
 - + mites
 - no animals added
- ③ waited 3 months

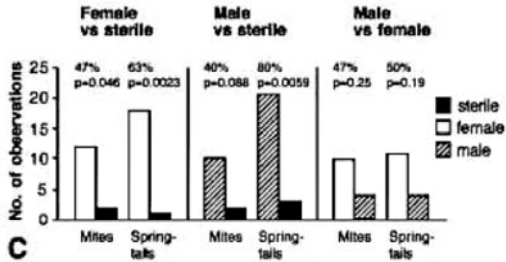
④ look for s'phytes (means sperm met eggs)



find animals near fertile "leaves"

⇒ prefer parts w/ eggs or sperm

~ nectar for insect pollinators



∴ most likely:

• moss (+) distant mosses get fertilized ⇒ have more kids

∴ ↑ reproductive fitness

• bugs (+) get fed by moss' secretions

⇒ more energy ⇒ more kids ⇒ ↑ reproductive fitness

ex ② cleanerfish & large reef fish

cleanerfish (+) eat parasites & are not eaten by large fish (+)

⇒ evolutionary consequence: cheaters - fish that look like cleaners but bite large fish (parasites of large fish & competitors of cleaners)

∴ co-evolution of all 3: large fish that can tell cheaters from cleaners are at advantage

& cleaners that don't look like cheaters are at advantage

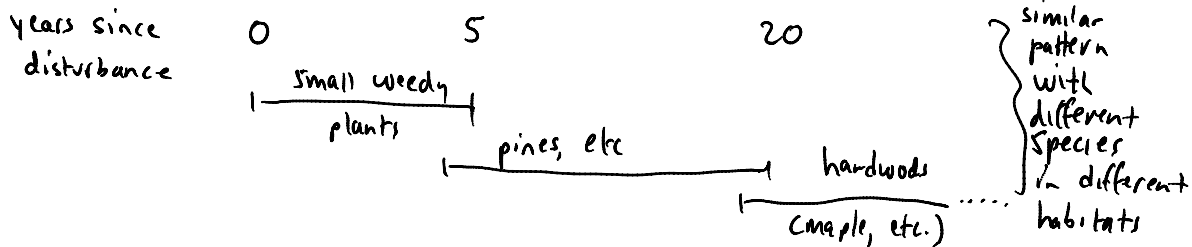
⇒ constant change tightens interaction

Community structure - putting it all together

ex. succession - regular sequence of changes in a community following a disturbance

ex. a forest after a clear-cut or fire (disturbance)

observe:



Why this pattern? - species interactions

- ① why weeds first? - make lots of seeds; grow fast
(more than one round of seeds per year)
- ② why pinus 2nd? slower to grow
- ③ why do pinus displace weeds? pinus grow taller & shade (competition)
weeds; better at getting H_2O
- ④ why hardwoods 3rd? need pine needles on ground to hold H_2O for
seedlings (pine 0, hardwood +)
- ⑤ why hardwood displace pine? - better competitors for sun, H_2O , nutrients
(-, -)

Q: does this continue indefinitely?

A: N_2O^+ reaches stable "climax ecosystem"

* theoretically - any new disturbance will start succession
all over again
in nature, disturbance =
fire, flood, etc.