

Lab 6: Habitat Fragmentation

Agenda

1. Edges
2. Lab Exercise
3. For Next Week

1.

Edges

- Contact zone between two habitats
 - Can be abrupt or gradual



1.

Edges

- Many species sensitive to edges
 - Higher parasite loads
 - Higher predation pressure



1.

Edges

- Many species sensitive to edges
 - Plants can be more sensitive to edges than animals



Edges

- Using Excel:
 - Dollar Sign for locking a formula to a cell
 - Calculate a weighted average
 - Construct XY scatter plots

2.

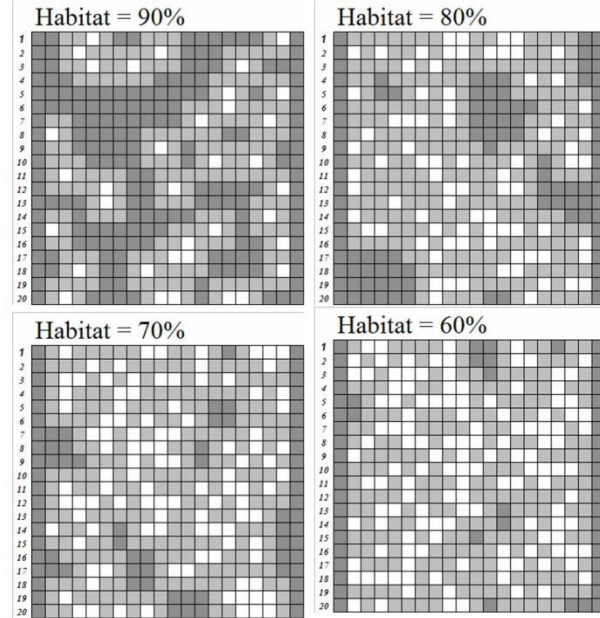
Lab Exercise

- Examine the effect of scale on fragmentation
 - 1-ha blocks (BB; Frag 1a and 1b)
 - 9-ha blocks (BB; Frag 9a and 9b)
- Do not count left side and right side rows!

2.

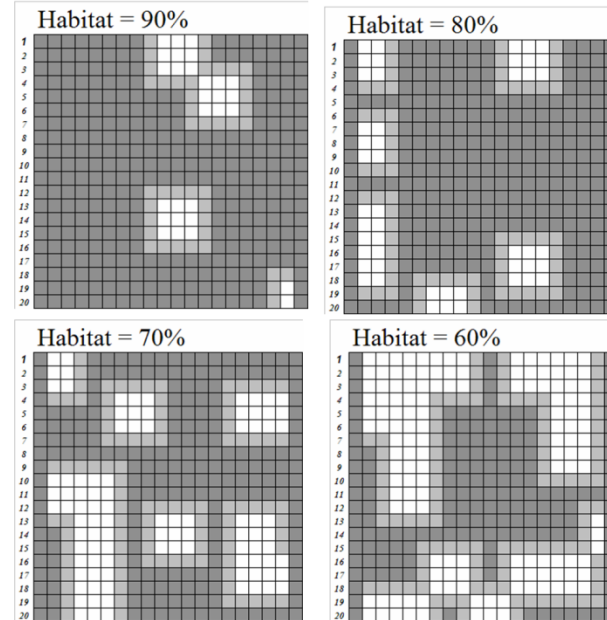
Habitat Loss Scenario I

Spatial scale =
1 hectare



Habitat Loss Scenario II

Spatial scale =
9 hectares



White = non-forest
Light Gray = forest edge
Dark Gray = forest core

360 total cells

- Count rare → common habitats
- Enter totals into Excel

2.

Lab Exercise

- *Trillium* spp.
 - Forest Edges ($r=-0.02$)
 - Forest Core ($r=0.02$)
- What is *Trillium* growth rate in non-forest areas?
- Zero vs. no data

2.

Lab Exercise

- Simulating a mobile animal
 - Attempt to move across landscape
 - Move from left to right using only forest edge and forest core habitat
 - 5 trials/landscape
 - Start at cells 1, 5, 10, 15, and 20

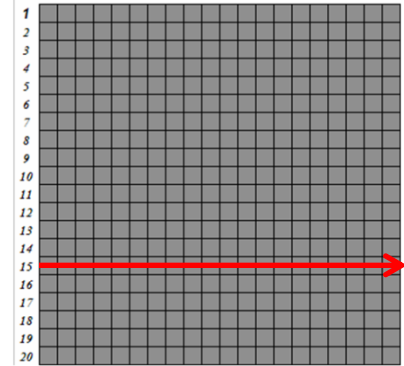
2.

White = non-forest
Light Gray = forest edge
Dark Gray = forest core

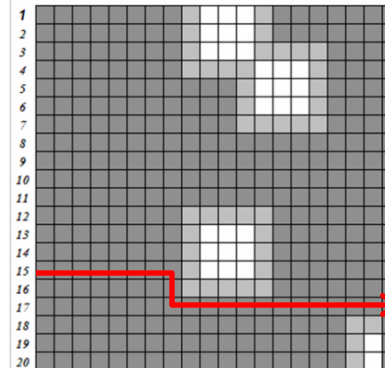
Habitat Loss Scenario II

Spatial scale =
9 hectares

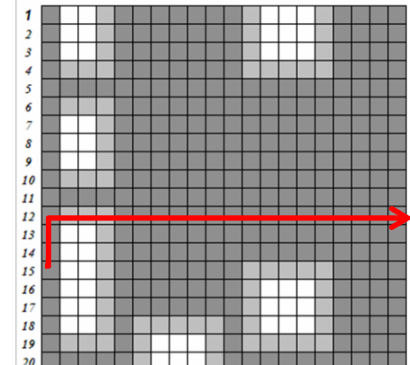
Habitat = 100%



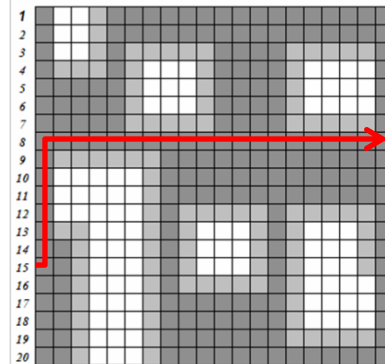
Habitat = 90%



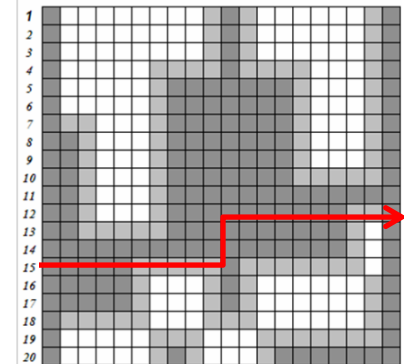
Habitat = 80%



Habitat = 70%



Habitat = 60%



3.

For Next Week

- Submit via Blackboard
 - Fragmentation Data spreadsheet
 - Answer questions in lab manual
 - 2, 3, 7, and 8 (p. 81)

3.

For Next Week

- Heading to Neal Smith NWR
 - Leaving from bldg 4 parking lot at 12:30
 - Bring appropriate clothing:
 - sturdy shoes
 - long pants
 - long sleeved shirt
 - Rain gear, if needed