21 March 2005
26th class meeting
(Miller Chapter 8)

Environmental Biology
ECOL 206
University of Arizona
spring 2005

Kevin Bonine, Ph.D.
Alona Bachi, Matthew Herron, Graduate TAs

Environmental Biology 206

- SE Chapter 8, Levidow and Rifkin
- Push back other readings
- Lab this week: meet at van, going to Greasewood Park

206 Course Web Link:
Can Tropical Rainforests Be Saved?  
(PBS Home Video, 1991)

Think about:

- Global Interconnectedness
- Economics, Politics, Development
- Timeline of Economic Return
- Sustainability
- Consumption
- Human Population
- Developing vs. Developed World
- IMF, World Bank

Semester Projects

See file to be posted on website

Peer evaluations...come to us with problems ASAP

A  excellent
B  good
C  satisfactory
D  poor
E/F failure
### Exam Two 2005

**Exam 2 score by time, 2005**

<table>
<thead>
<tr>
<th>Time</th>
<th>Exam 2 Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:21</td>
<td>110</td>
</tr>
<tr>
<td>9:28</td>
<td>105</td>
</tr>
<tr>
<td>9:36</td>
<td>100</td>
</tr>
<tr>
<td>9:43</td>
<td>95</td>
</tr>
<tr>
<td>9:50</td>
<td>85</td>
</tr>
<tr>
<td>9:57</td>
<td>75</td>
</tr>
</tbody>
</table>

**Summary Statistics**

- **max**: 96.5
- **mean**: 74.8
- **median**: 76
- **min**: 32
- **n**: 43
- **s.d.**: 13.19

### Exam Two 2005

**Number of Students**

<table>
<thead>
<tr>
<th>Score</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>35</td>
<td>1</td>
</tr>
<tr>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td>45</td>
<td>1</td>
</tr>
<tr>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td>55</td>
<td>1</td>
</tr>
<tr>
<td>60</td>
<td>1</td>
</tr>
<tr>
<td>65</td>
<td>1</td>
</tr>
<tr>
<td>70</td>
<td>1</td>
</tr>
<tr>
<td>75</td>
<td>1</td>
</tr>
<tr>
<td>80</td>
<td>1</td>
</tr>
<tr>
<td>85</td>
<td>1</td>
</tr>
<tr>
<td>90</td>
<td>1</td>
</tr>
<tr>
<td>95</td>
<td>1</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
</tr>
</tbody>
</table>
THE UNITED NATIONS: ORGANIZATION

In 1945, representatives of 50 countries met in San Francisco at the United Nations Conference on International Organization to draw up the United Nations Charter. The Organization officially came into existence on 24 October 1945, when the Charter had been ratified by China, France, the Soviet Union, the United Kingdom, the United States and a majority of other signatories. United Nations Day is celebrated on 24 October.

Charter

The Charter is the constituting instrument of the United Nations, setting out the rights and obligations of Member States, and establishing the Organization's organs and procedures.

Purposes

The purposes of the United Nations, as set forth in the Charter, are to maintain international peace and security; to develop friendly relations among nations; to cooperate in solving international economic, social, cultural and humanitarian problems and in promoting respect for human rights and fundamental freedoms; and to be a centre for harmonizing the actions of nations in attaining these ends.

Structure

The six principal organs of the United Nations, are the: General Assembly, Security Council, Economic and Social Council, Trusteeship Council, International Court of Justice and Secretariat. The United Nations family, however, is much larger, encompassing 15 agencies and several programmes and bodies.

Budget

The budget for the two years 2000-2001 is $2.535 million. The main source of funds is the contributions of Member States, which are assessed on a scale approved by the General Assembly. The fundamental criterion on which the scale of assessments is based is the capacity of countries to pay. This is determined by considering their relative shares of total gross national product, adjusted to take into account a number of factors, including their per capita incomes. In addition, countries are assessed -- in accordance with a modified version of the basic scale -- for the costs of peacekeeping operations, which stood at around $2 billion in 2000.

The United Nations family

The United Nations is made up of the United Nations Secretariat, the United Nations programmes and funds -- such as the UN Children’s Fund (UNICEF) and the UN Development Programme (UNDP) -- and the specialized agencies. The programmes, funds and agencies have their own governing bodies and budgets, and set their own standards and guidelines. Together, they provide technical assistance and other forms of practical help in virtually all areas of economic and social endeavour.


206 Exam Two 2005

Missed questions

p.1 #8: U.N.

p.1 #9: Natural Gas = Methane

p.2 #1b: sink vs. source

p.2 #3: creosote dominant vegetation at low elevation

p.2 #4: saguaros on S facing slope to avoid freezing

p.2 #5: lambda = 1 if population not changing in size

lambda < 1 if population shrinking

lambda > 1 if population growing

p.2 #6n7: protected vs. endangered

p.3 #2: Lessons from Biosphere 2: carrying capacity

p.3 #6: SDCP modeled habitat b/c of cost and potential for protecting areas where species used to be

p.3 #8: compound leaf

p.3 #9: dichotomous key (bifurcating set of questions)

p.3 #10: saguaro and palo verde association
206 Exam Two 2005

Missed questions

p.4 #1: Leslie Matrix

\[
\begin{bmatrix}
2 & 4 & 10 \\
0.5 & 0 & 0 \\
0 & 0.1 & 0
\end{bmatrix}
\begin{bmatrix}
0 \\
10 \\
2
\end{bmatrix}
= 61
\]

p.4 #3: SPAR, why important? How make linear?

p.4 #5: worth 5 points (1 word answer not sufficient)

Wildflowers in Southern Arizona

AZDStar 18 March 2005
Wildflowers in Southern Arizona

COOL COLOR FEST

By Doug Kretz

We're in the midst of one of the best bloomin' wildflower seasons in years and you might be wondering: How the heck do I tell a poppy from a primrose, a bladderpod from a buttercup? Welcome to Wildflowers 101. Our short course includes photos and descriptions of some of the stars of this year's big blooms - along with a few fun flower facts. See the Wildflower Watch.

GLOBE MALLOWS

Cup-shaped flowers with five petals, globe mallows are usually orange, but can be pink or white.

BLADDERPODS

These small yellow flowers with four petals often bloom together in the thousands.

Wildflowers in Southern Arizona

DESSERT MARIGOLD

These brilliant yellow flowers grow on long stems and bloom even in years with deficient rainfall.

HARLEY BLUEBELL

What's up for God-damned nature? Bluebells that are about three-quarters of an inch across.
Wildflowers in Southern Arizona

Threats (in addition to habitat destruction):
- Poaching
- Pet Trade
- Overfishing
- Shrimp Trawling
- Shrimp Farming

**Shrimp Trawling**
- world's most wasteful fishing practice.
- Shrimp trawl nets account for 10 million tons of bycatch per year - 35% of the world's total.
- A global average of 5.2 pounds of marine life is wasted for every pound of shrimp caught by trawling.
- Highest discard ratio in the world was recorded in Trinidad where almost 33 lbs of marine life was wasted for every pound of shrimp caught.
- An estimated 150,000 endangered sea turtles die in shrimp nets each year.
- Catches of Red Snapper fish in the Gulf of Mexico declined due to large number of young fish taken in shrimp nets.
- Large fishing boats that sell only shrimp and discard commercially-viable marine life are the most wasteful. Small-scale traditional fishermen are more likely to use their bycatch.
- There is also growing scientific concern about the environmental impacts of dragging heavy shrimp trawling gear along the ocean floor.
Feeding the World...

30 crops → 95% human's calories
(50% from wheat, rice, and corn)
418-1,400 species for native peoples

Industrialized Agriculture Energy Inputs

1,300 miles!
Feeding the World’s people:

Under nutrition:

Malnutrition:

Overnutrition:

Subsistence Farming vs. Cash Crops

Poverty, Consumption, Equality
Pesticides

**PRO**
- DDT saves lives (malaria etc.)
- Increase Food Supplies
- Increase Profits
- Work Quickly
- New Technologies safer

**CON**
- Genetic Resistance to Pesticides
- Kill natural predators
- Pesticides move in environment
- Harm wildlife
- Harm human health

1. Reduced Pesticide use is feasible and may increase crop yields
   - rice in Indonesia
   - tomatoes in Mexico

2. Integrated Pest Management (IPM; more ecological approach)
3. Chemical Industry Lobby
4. Environmental Justice (What goes around comes around)

Effects of Industrial Food Production