Pleistocene Biogeography
What were the biogeographic effects of transition from the last ice age to the current interglacial?

Words & short answers
Holocene
Packrat Middens
Pleistocene
How much lower was the ocean during the last full glacial
How much colder was the planet during the last full glacial
How did vegetation respond to postglacial warming
Latitudinally
Altitudinally

Current Distributions & Cladistics
Produce the most parsimonious cladogram for the following monophyletic group. Label apomorphies, synapomorphies, and nodes. Species 0 is the most primitive member of the group.

<table>
<thead>
<tr>
<th>species 0</th>
<th>species 1</th>
<th>species 2</th>
<th>species 3</th>
<th>species 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>tailed</td>
<td>tailed</td>
<td>tailless</td>
<td>tailless</td>
<td>tailless</td>
</tr>
<tr>
<td>horned</td>
<td>horned</td>
<td>horned</td>
<td>hornless</td>
<td>hornless</td>
</tr>
<tr>
<td>furry</td>
<td>furry</td>
<td>furry</td>
<td>feathered</td>
<td>feathered</td>
</tr>
<tr>
<td>hoofed</td>
<td>hoofed</td>
<td>hoofed</td>
<td>hoofed</td>
<td>hoofed</td>
</tr>
<tr>
<td>hands</td>
<td>hands</td>
<td>claws</td>
<td>wings</td>
<td>hands</td>
</tr>
</tbody>
</table>

Explain and give an example of “simple progression.”

Words & short answers
apomorphic
cladogram
Croizat
monophyletic
panbiogeography
plesiomorphic
polyphyletic
synapomorphic

Biotic Patterns & Biotic Exchange
After Pliocene Interchange Generic-level diversity of N. America Mammals __________
After Pliocene Interchange Generic-level diversity of S. America Mammals __________
As the number of native species increases the success of invading species __________
Bergman's Rule
Brown's Rule
K-selection
Large animals have ____ ranges
Local species richness increases at a ____ than regional species richness
Rapoport's Shape Rule
Rapoport's Size Rule
r-selection
Roots of Current Distributions

What are two differences between Mammal biotic regions and Flowering plant biotic regions, and what is one reason for each difference.

Why does the Cape Flora have so many endemics?

Why are there no great Apes in the New world (other than humans)

Why is the Australian Fauna depauperate?

What happened to the mid-Tertiary land bridge between Greenland and Europe (two effects)

Extinction & Speciation

- Allopatric Speciation
- Aneuploidy
- Background Extinction
- Biological Species
- Chronospecies
- Cladogenesis
- Disruptive Selection
- Evolutionary Species
- Examples of recent extinctions
- Founder effect
- Gradualistic
- Mass Extinction
- Parapatric Speciation
- Phylogenetic Species
- Polyploidy
- Polytypic Species
- Punctuated
- Reticulate
- Species Selection
- Sympatric Speciation
- Vicariant Isolation

Dispersal

Compare and contrast dispersalist and extensionist viewpoints of biogeography.

- active dispersal
- diffusion
- jump dispersal
- pagile
- parthenogenetic
- passive dispersal
- phoresy
- propagule
- secular migration
- vagile
- volant
**Human Biogeography**
Where do humans originate as a species?
When did humans first leave Africa?
What are some evolutionary trends in humans during the last 2,000,000 years?
On isolated land masses or islands, what specific effect has the arrival of humans had on large animals?
For endangered species, where within the original range of the species are the last individuals found?
- *Australopithecus*
- *Homo erectus*
- *Homo habilis*
- *Homo neanderthalensis*
- *Homo sapiens*
- Little Ice Age
- Medieval Warm Period
- *Paranthropus*

**Insular Biotas**
Why are snails such effective migrators to oceanic islands?
Why do animals change size when they reach islands?
- Large-island Onlies (island biotas)
- Niche shift
- Precintiveness
- Predator Release
- Supertramps (island biotas)
- The Island Rule
- Widespread Species (island biotas)
- continental island
disharmonic biota (island-mainland comparison)
harmonic biota (island-mainland comparison)
immigrant pattern (continental island diversity pattern)
oceanic island
relaxation model (continental island diversity pattern)
relict pattern (continental island diversity pattern)

**Island Biogeography**
Reproduce a graph showing the effects of island size and distance from mainland on species diversity according to the theory of island biogeography. Label the axes and indicate the equilibrium species number.
On oceanic islands, as species number increase the rate of immigration ____ and the rate of extinction ____
- equilibrium
- relaxation
- rescue effect
- small island effect:
- speciation vs. immigration
- static assumption
- target area effect
- turnover rates
**Restoration Biogeography**
Among birds, mammals, mollusks and reptiles the extinction on islands has been least among _____.
Among exotic species of plants the proportion of non-native species is in islands is __________ the number on the mainland.
What is the effect of isolation on the extinction of endemic birds during the historic period?
What is the effect of island size on the extinction of endemic birds during the historic period?
For birds on Pacific Islands, as the number of introduced species goes up, the number of extinct endemics _______
What is the effect of habitat fragmentation on biodiversity?
What will be the effect on plant diversity of upward migration of vegetation zones due to global warming?

**Marine Biogeography**
Where is the diversity of whales greatest?
Where is the diversity of corals greatest?
Where is the diversity of mangroves greatest?
Where is the diversity of benthic organisms greatest?