

**Universidad de Costa Rica**  
**Escuela de Biología**  
**Tropical Biology study abroad program for KU students**

**BIODIVERSITY AND CONSERVATION**

**Objectives**

- ∄ Introduce the concept of biodiversity and understand its distribution
- ∄ Discuss about the major threats to biodiversity
- ∄ Introduce basic concepts of conservation biology and discuss strategies for biodiversity conservation
- ∄ Learn about biodiversity and conservation in Costa Rica

**MAIN TOPICS**

**Biological diversity:**

- J Definition of biodiversity and species richness
- J Measurement of biological diversity
- J Distribution of biodiversity: number of species worldwide and estimates
- J Examples of biodiversity in the tropics
- J Values of Biodiversity

**Loss of Biodiversity:**

- J Extinction rates in the past and present
- J Estimates of extinction rates
- J Endemic species and island biogeography
- J Vulnerability to extinction
- J Habitat destruction

**Conservation Biology:**

- J Definition of Conservation Biology
- J Postulates of Conservation Biology
- J Contributions of Conservation Biology

**Practical Applications**

- J Ex situ conservation strategies
- J In situ conservation strategies
- J Managing protected areas
- J Sustainable development

**Evaluation**

<b>1 Exam</b>	<b>30 %</b>
<b>Tortuguero Field work and report</b>	<b>35%</b>
<b>Palo Verde Field work and report</b>	<b>35%</b>
<b>Total</b>	<b>100 %</b>

### **Exam 1: Last week of classes**

Class contents + Readings

Readings:

#### **Primack:**

Pay special attention to the summary of each chapter

- Chapter 2: What is biological diversity  
Especially pp.27-33; 36-39; 53-59; rest: skim over quickly
- Chapter 4: Ecological economics and direct economic values
- Chapter 7: Extinction
- Chapter 9: Habitat destruction, fragmentation, degradation, and global climate change
- Chapter 15: Establishing protected areas
- Chapter 17: Managing protected areas
- Chapter 20: Conservation and sustainable development

#### **Wilson:**

- Foreword: Biodiversity at the Close of the Century

#### **Kricher:**

- Chapter 4: pp.86- 98: Species Richness and Diversity Gradient

### **Bibliography**

Primary text:

- Ø Primack, R.B. 2002. *Essentials of Conservation Biology*. Third Edition. Sinauer Associates, Inc. Publ. Sunderland, Massachusetts. 698pp.

Additional references:

- Ø Kricher, J. 1999. *A Neotropical Companion*. Second Edition, Princeton Univ. Press. 451pp.
- Ø Meffe, G.K. & C.R. Carroll. 1997. *Principles of Conservation Biology*. Second Edition. Sinauer Associates, Inc. Publishers. Sunderland, Massachusetts. 729pp.
- Ø Obando Acuña, V. 2002. *Biodiversidad en Costa Rica. Estado del conocimiento y gestión*. Instituto Nacional de Biodiversidad, Costa Rica. 81pp.
- Ø Reaka, M.L., D.E. Wilson & E.O. Wilson (eds.). 1997. *Biodiversity II*. Washington, 551pp.
- Ø Terborgh, J. 1992. *Diversity and the tropical rain forest*. Scientific American Library. 242pp.
- Ø Wilson, E. O. 1999. *The Diversity of life*. W. W. Norton & Comp. Inc. 424pp.

Ø Wilson, E.O. & F.M. Peter (eds.). 1988. *Biodiversity*. National Academic Press, Washington. 512pp.

Some WEB sites:

[http:// www.bionet-us.org/website.html](http://www.bionet-us.org/website.html)

[http:// www.heritage.tnc.org/oth](http://www.heritage.tnc.org/oth) svrs.html

[http:// www.sciencemag.org/feature/data/biodiversity2000.shl](http://www.sciencemag.org/feature/data/biodiversity2000.shl)