

## Suggested Poster Format

Title of Poster  
Student Name

Species Name  
Species Taxonomy

Conservation status  
Wild population

## Physical Characteristics

Photo or Illustration  
of species

## Habitat and Environment

## Relationship

## Relationship

## Behavior

## Relationship

## Resources

# Glossary

**Altruism:** behavior that benefits other organisms, at a cost to the individual exhibiting the behavior

**Arboreal:** refers to an organism that spends most of its time in trees

**Behavioral enrichment:** a comprehensive method of animal husbandry in which species-specific behavior is nurtured and encouraged

**Biome:** a region broadly defined by the relationship of the area's temperature range, annual precipitation and living organisms

**Blackback:** Sub-adult (ten years of age or younger) male gorilla. The blackback is subordinate to the silverback in a troop

**Brachiate:** locomoting arboreally by swinging arm-over-arm

**Bushmeat:** Meat derived from wildlife not usually considered game. Includes rats, antelopes, elephants and apes.

**Consumer:** a living organism that obtains its energy from organic substances produced by other organisms

**Culture:** behavioral traits passed on by learning

**Dental comb:** Dental specialization comprised of forward projecting lower incisors and canines. Found in lemurs and lorises, it is used for grooming and feeding.

**Derived:** refers to characteristics that are modified from ancestral form

**Diurnal:** active during the daytime

**Edge effect:** change in habitat conditions along the edges of forests due to the harvesting of land

**Encephalization:** evolutionary trend for a species towards a larger brain than expected of body size

**Folivorous:** refers to animals that feed primarily on leaves

**Foramen magnum:** large opening at base of skull where spinal cord enters

**Frugivorous:** refers to animals that feed primarily on fruit

**Hallux:** the first digit of the foot; the "big toe"

**Haplorrhini:** Literally means "simple nose" (referring to the dry nose). Taxonomic term used to describe tarsiers, monkeys, apes, and humans.

**Intraspecific:** within one species

**Ischial callosities:** patches of toughened skin found on an animal's rump

**Natal group:** the group into which an individual is born

**Olfaction:** sense of smell

**Plantigrade:** locomotive stance in which entire foot, from toe to heel, touches the ground while walking

**Polyandry:** a mating system in which a female has two or more male mates

**Primitive:** characteristics present in ancestral form

**Producer:** an organism that is capable of synthesizing organic molecules from inorganic raw materials

**Prosimians:** a group of primates with primitive features, including reliance on olfaction

**Quadrupedalism:** the use of all four limbs to support the body during locomotion.

**Rhinarium:** naked nose pad kept moist to enhance the sense of smell

**Sagittal crest:** a bony ridge at the midline of the skull for attachment of chewing muscles

**Sexually dimorphic:** occurrence of a distinct difference between size, shape, and/or coloration of males and females of a species

**Silverback:** An adult male gorilla with gray hairs across the back. He is the leader of the troop, the decision maker, the protector, and the male who has mating rights with the females.

**Simians:** the higher primates, including monkeys, apes and humans

**Strepsirrhini:** Literally means "wet nose." Taxonomic term used to describe non-tarsier prosimians.

**Trophic level:** a level of consumption in a food chain

# References

- Breuer T, Ndoundou-Hockemba M, Fishlock V. 2005. "First Observation of Tool Use in Wild Gorillas." *PLoS Biol* 3(11): e380.
- Bushmeat Crisis Task Force. 2003. "Fact Sheet: Global Human Health" Online. Accessed 24 April 2006 at <http://www.bushmeat.org/cd/fs/FShealth.pdf>.
- Caldecott, Julian and Lera Miles. 2005. *World Atlas of Great Apes and their Conservation*. Berkeley: University of California Press.
- Cowlshaw, Guy and Robin Dunbar. 2000. *Primate Conservation Biology*. Chicago: Chicago University Press.
- de Waal, Frans. 1997. *Bonobo: The Forgotten Ape*. Berkeley: University of California Press.
- Dunbar, Robin and Louise Barrett. 2000. *Cousins: Our Primate Relatives*. London: DK.
- Falk, Dean. 2000. *Primate Diversity*. New York: W.W. Norton & Co.
- Fouts, Roger. 1997. *Next of Kin*. New York: William Morrow and Company, Inc.
- Goodall, Jane. 1963. "Feeding behaviour of wild chimpanzees: a preliminary report." *Symp Zool Soc Lond* 10:39-48.
- Groves, Colin P. 2001. *Primate Taxonomy*. Smithsonian Series in Comparative Evolutionary Biology. Washington, D.C.: Smithsonian Books.
- Huijbregts B, De Wachter P, Obiang LSN, et al. Oct 2003. "Ebola and the decline of gorilla (*Gorilla gorilla*) and chimpanzee (*Pan troglodytes*) populations in Minkebe Forest, north-eastern Gabon." *ORYX* 37 (4): 437-443.
- Jarrett, P., N. Bailey, K. Buck, N. Nastold, M. Gianelloni, C. Hubbard and A. Sullivan. 2003. "Bushmeat Signage" in *Bushmeat Education Resource Guide*, eds. N. Bailey and A. Groff. Washington, DC: Bushmeat Crisis Task Force.
- Johns, Andrew D. June 1986. "Effects of Selective Logging on the Behavioral Ecology of West Malaysian Primates." *Ecology*, Vol. 67, No. 3. The Ecological Society of America, 684-694.
- Jurmain, Robert, Harry Nelson, Lynn Kilgore and Wenda Trevathan. 2001. *Essentials of Physical Anthropology*. Belmont, California: Wadsworth.
- Kemf, Elizabeth and Alison Wilson. 1997. *Great Apes in the Wild*. Switzerland: World Wide Fund for Nature.
- Leach, Michael. 1996. *The Great Apes: Our Face in Nature's Mirror*. London: Blandford.
- Martin, Paul and Patrick Bateson. 1986. *Measuring Behaviour*. Cambridge: Cambridge University Press.
- Mittermeier, R., Valladares-Pádua, C., Rylands, A., Eudey, A., Butynski, T., Ganzhorn, J., Kormos, R., Aguiar, J., Walker, S. 2005. *Primates in Peril: The World's 25 Most Endangered Primates 2004-2006*. IUCN, International Primalotogical Society, Conservation International.
- National Geographic. "Chimps, Humans, Thumbs, and Tools" Online. Accessed November 4, 2005 at <http://www.nationalgeographic.com/xpeditions/lessons/01/g68/lonsdorf.html>.
- Orangutan Foundation International. "Frequently Asked Questions" Online. Accessed 24 April 2006 at <http://www.orangutan.org/facts/faq.php>.
- Sleeper, Barbara. 1997. *Primates: Amazing World of Lemurs, Monkeys and Apes*. San Francisco: Chronicle Books.
- Swindler, Daris R. 1998. *Introduction to the Primates*. Seattle: University of Washington Press.
- Teaching About Evolution and the Nature of Science. "Investigating Common Descent: Formulating Explanations and Models" Online. Accessed 2005 October 16 at <http://bob.nap.edu/readingroom/books/evolution98/evol6-d.html>.
- UNEP. "Great Apes Survival Project" Online. Accessed January-April 2006 at <http://www.unep.org/grasp/>.
- Wallis, Janet, ed. 1997. *Special Topics in Primatology, Volume One: Primate Conservation: The Role of Zoological Parks*. Omaha: American Society of Primatologists.

# Suggested Resources

## Primates, General

### For Teachers

- Box, H. O. 1984. *Primate behavior and social ecology*. Chapman and Hall, London.
- Dunbar, Robin and Louise Barrett. 2001. *Cousins: Our primate relatives*. London: Dorling Kindersley.
- Falk, Dean. 2000. *Primate Diversity*. NY: W.W. Norton and Company.
- Preston-Mafham, Ken and Rod. 1992. *Primates of the World*. London: Blandford.
- Shire, Donald R. 1991. *Apes and Monkeys*. New York: Doubleday.
- Swindler, Daris R. 1998. *Introduction to the Primates*. Seattle: University of Washington Press.
- Tomasello, Michael and Josep Call. 1997. *Primate Cognition*. Oxford: Oxford University Press, Inc.

### For Students

- Julivert, Angels. 1996. *The Fascinating World of Primates*. Barrons Juveniles.
- Napier, J.R. and P.H. Napier. 1985. *The Natural History of the Primates*. Cambridge: MIT Press.
- Rowe, Noel. 1996. *The Pictorial Guide to the Living Primates*. New York: Pogonias Press.
- Tattersall, Ian. 1995. *Primates: Lemurs, Monkeys, and You*. New York: Millbrook Press.
- Wolfe, A and B. Sleeper. 1997. *Primates – the Amazing World of Lemurs, Monkeys and Apes*. San Francisco: Chronicle Books.

## Apes, General

- Lemmon, Tess and John Butler. 1993. *Apes*. New York: Ticknor and Fields.
- Schiefelbusch, R. L. and J.H. Hollis. 1979. *Language Intervention from Ape to Child*. Baltimore: University Park Press.
- Tuttle, Russell, H. 1986. *Apes of the World*. New Jersey: Noyes Publication.

## Lesser Apes

- Preuschoft, H., D. J. Chivers, W. Y. Brockelman, and N. Creel, eds. 1984. *The lesser apes: Evolutionary and behavioral biology*. Edinburgh: Edinburgh Univ. Press.
- Rumbaugh, Duane M. ed. 1972. *Gibbon and Siamang Volume 1: Evolution, ecology, behavior, and captive maintenance*. Basel, NY: S. Karger.
- Rumbaugh, Duane M. ed. 1973. *Gibbon and Siamang Volume 2: Anatomy, dentition, taxonomy, molecular evolution and behavior*. Basel, NY: S. Karger.
- Rumbaugh, Duane M. ed. 1974. *Gibbon and Siamang Volume 3: Natural history, social behavior, reproduction, vocalizations, prehension*. Basel, NY: S. Karger.
- Rumbaugh, Duane M. ed. 1976. *Gibbon and Siamang Volume 4: Suspensory behavior, locomotion, and other behaviors of captive gibbons: cognition*. Basel, NY: S. Karger.

## Great Apes

### For Teachers

- Caldecott, Julian and Lera Miles, eds. 2005. *World Atlas of Great Apes and their Conservation*. Berkeley: University of California Press.

Cavalieri, P. and P. Singer, eds. 1993. *The Great Ape Project: Equality Beyond Humanity*. NY: St. Martins Press.

De Waal, Frans and Frans Lanting. 1997. *Bonobo: The Forgotten Ape*. Berkeley: University of California Press.

Dixon, A. F. 1981. *The Natural History of the Gorilla*. New York: Columbia University Press.

Green, Carl S. and William R. Sanford. 1987. *The Orangutan*. Mankato: Crestwood House.

Groves, Colin P. 1970. *Gorillas*. New York: Acro Publishing Company, INC.

Hoff, Michael P., and Terry L. Maple. 1982. *Gorilla Behavior*. New Jersey: Van Nostrand Reinhold.

Keyes, Bettyann. 1980. *Thinking Gorillas: Testing and Teaching the Greatest Ape*. NY: E.P. Dutton.

Leach, Michael. 1996. *The Great Apes: Our Face in Nature's Mirror*. New York: Sterling Publishing.

McGrew, W. C., L. F. Marchant, and T. Nishida, eds. 1996. *Great ape societies*. NY: Cambridge Univ. Press.

Nichols, Michael. 1993. *The Great Apes: Between Two Worlds*. Washington, D.C.: National Geographic Society.

Russon, A. E., K. A. Bard, and S. T. Parker, eds. 1996. *Reaching into thought: The minds of the great apes*. NY: Cambridge Univ. Press.

Taylor, Andrea B., and Michele L. Goldsmith. 2003. *Gorilla Biology: A Multidisciplinary Perspective*. Cambridge: Cambridge University Press.

Willoughby, David P. 1978. *All About Gorillas*. South Brunswick: A.S. Barnes.

### For Students

Hofer, Angelika, Michael Huffman and Gunter Ziesler. 2000. *Mahale: A Photographic Encounter with Chimpanzees*. New York: Sterling Publications.

Patterson, Francine. 1999. *Koko-Love!: Conversations With a Signing Gorilla*. New York: Dutton Children's Books.

Redmond, Ian. 2000. *Eyewitness: Gorilla, Monkey, and Ape*. New York: DK Children.

## Primates and Zoos

Crockett, Carolyn M. 1998. "Psychological Well-being of Captive Nonhuman Primates: Lessons from Laboratory Studies." In David J. Shepherdson, Jill D. Mellen, and Michael Hutchins (Eds.), *Second Nature*. (pp. 129-152). Washington DC: Smithsonian Institution Press.

Croke, Vicki. 1997. *The Modern Ark – The Story of Zoos: Past, Present and Future*. NY: Scribner.

Hanson, Elizabeth. 2002. *Animal Attractions: Nature on Display in American Zoos*. Princeton: Princeton University Press.

Kreger, Michael D. ed. 1999. *Environmental Enrichment for Nonhuman Primates Resource Guide: January 1992-February 1999*. Beltsville, MD: United States Department of Agriculture.

Markowitz, Hal. 1982. *Behavioral Enrichment in the Zoo*. NY: Van Nostrand Reinhold.

Poole, Trevor B. 1998. "Meeting a Mammal's Psychological Needs." In David J. Shepherdson, Jill D. Mellen, and Michael Hutchins (Eds.), *Second Nature*. Washington DC: Smithsonian Institution Press. 83-94.

Smith, Roland. 1992. *Primates in the Zoo*. Minneapolis: Millbrook Press.

Wallis, J. ed. 1997. *Special Topics in Primatology. Vol. 1: The role of zoological parks*. American Society of Primatologists.

## Primate Conservation

Cowlishaw, Guy and Robin Dunbar. 2000. *Primate Conservation Biology*. Chicago: University of Chicago Press.

Hackel J. 1999. "Community Conservation and the Future of Africa's Wildlife." *Conservation Biology* 13:726-734.

Jennings, Terry. 1992. *Tropical Forests*. Danbury: Grolier Educational Corp.

Kremen C, Merenlender AM, Murphy DD. 1994. "Ecological Monitoring: A Vital Need for Integrated Conservation and Development Programs in the Tropics." *Conservation Biology* 8:388-397.

Sandlund, O. T., K. Hindar, et al. 1992. *Conservation of biodiversity for sustainable development*. Oslo: Scandinavian University Press.

van Schaik C and Rijksen HD. 2002. "Integrated Conservation and Development Projects: Problems and Potential." In: Terborgh J, van Schaik C, Davenport L and Rao M. eds. *Making Parks Work: Strategies for Preserving Tropical Nature*. Washington: Island Press, p. 15-29.

Wilkie DS and Carpenter JF. 1999. "Can nature tourism help finance protected areas in the Congo Basin?" *Oryx* 33:332-338.

## **Primatologists**

Fossey, Dian. 1983. *Gorillas in the Mist*. Boston: Houghton Mifflin Co.

Fouts, Roger. 1997. *Next of Kin: My Conversations with Chimpanzees*. NY: HarperCollins, Inc.

Galdikas, Birute M.F. 1995. *Reflections of Eden*. Canada: Little, Brown & Company.

Goodall, Jane. 1971. *In the Shadow of Man*. NY: Houghton Mifflin Company.

Goodall, Jane with Phillip Berman. 1999. *Reason for Hope: A Spiritual Journey*. NY: Warner Books.

### **For Teachers**

De Waal, Frans. 2001. *The Ape and the Sushi Master: Cultural Reflections of a Primatologist*. NY: Basic Books.

### **For Students**

Gallardo, Evelyn. 1993. *Among the Orangutans: The Birute Galdikas Story*. San Francisco: Chronicle Books.

Jerome, Leah. 1991. *Dian Fossey*. (Changing Our World Series). NY: Bantam Skylark.

Goodall, Jane. 2000. *My Life with the Chimpanzees*. NY: Minstrel Books.

Mowat, Farley. 1987. *Woman in the Mists: The Story of Dian Fossey and the Mountain Gorillas of Africa*. NY: Warner Books, Inc.

Powzyk, Joyce A. 1998. *In Search of Lemurs: My Days and Nights in a Madagascar Rain Forest*. Washington, D.C.: National Geographic Society.

## **Primate Web Sites**

African Primates at Home

<http://www.indiana.edu/~primate/primates.html>

American Society of Primatologists – Conservation Programs

<http://www.asp.org/conservation/index.html>

Association of Zoos and Aquariums (Species Survival Plans; search common names of primates)

<http://www.aza.org/ConScience/#ssp>

Balikpapan Orangutan Society – USA

<http://www.orangutan.com>

The Bushmeat Crisis Taskforce

<http://bushmeat.org>

The Bushmeat Project

<http://bushmeat.net>

Golden Lion Tamarin Conservation Program

<http://nationalzoo.si.edu/ConservationAndScience/EndangeredSpecies/GLTProgram/>

The Gorilla Foundation

**<http://www.koko.org>**

Great Ape Project

**<http://www.envirolink.org/arrs/gap/gaphome.html>**

The Jane Goodall Institute

**<http://www.janegoodall.org>**

Mbeli Bai Gorilla Study

**<http://www.wcs-congo.org/resmbeli.htm>**

Orangutan Foundation International

**<http://www.orangutan.org>**

OFI Orangutan Education and Action Network

**<http://www.orangutan.org/how2help/ocean.php>**

Primate Info Net

**<http://www.primate.wisc.edu/pin/>**

Primate Conservation Links

**<http://www.primate.wisc.edu/pin/conservation/index.html>**

Prime Time Primates (PBS)

**[http://www.pbs.org/safarchive/4\\_class/45\\_pguides/pguide\\_504/4554\\_idx.html](http://www.pbs.org/safarchive/4_class/45_pguides/pguide_504/4554_idx.html)**

Woodland Park Zoo

**<http://www.zoo.org>**

World Wildlife Fund (WWF-US)

**<http://www.worldwildlife.org/species/species.cfm>**

## **Primate Videos**

### **Among Mountain Gorillas**

Produced by Alan Goodall, EDU, Paisley College, Scotland

VHS; 50 min.: 1990

### **Among The Wild Chimpanzees**

Produced by National Geographic Society; Distributed by Vestron Video, PO Box 4000, Stamford, CT 06907

VHS; 59 min.: 1984

### **Baby Gorillas: A Gorilla Family Portrait**

Produced by WCHM-TV, Columbus, OH and Wildsight Productions Inc.

VHS; 57 min.: 1991

### **Conservation Biology and Natural Resource Management: Common Ground and New Directions**

Produced by Student Television Productions, Colorado State University, Fort Collins, CO. Distributed by Dr. Richard Knight, Dept. of Fishery and Wildlife Biology, Colorado State University.

VHS; 40 min.: 1992

### **Environmental Tourist, The**

Produced by The National Audubon Society. Distributed by PBS Video, 1320 Braddock Place, Alexandria, VA 22314-1698

VHS; 58 min.: 1992

### **Gorilla: Tender Giants**

Produced by Survival Anglia for the Discovery Channel. Copyright by Discovery Communications, Inc.

VHS; 60 min.: 1996

### **Introduction to Chimpanzee Behavior**

Produced and distributed by the National Geographic Society

VHS; 23 min.: 1977



**Koko's Kitten**

Produced by Churchill Films and the Gorilla Foundation  
VHS; 16.5 min; 1989

**Koko's Story**

Produced by Denise Yamada, KNSD-TV, 8330 Engineer Road, San Diego, CA 92171  
VHS; 18 min.: 1990

**New Chimpanzees, The**

Produced by the National Geographic Society, 1145 17th Street NW, Washington, D.C. 20036-4688. Distributed by the National Geographic Society, PO Box 5073, Clifton, NJ 07015-5073  
VHS: 55 min.: 1995

**People of the Forest: The Chimps of Gombe**

Produced by Discovery Communications.  
VHS: 90 min.: 1991.

**Saving the Gorilla**

Produced and distributed by the National Geographic Society  
VHS; 23 min.: 1982.

**Tool Users, The**

Produced by National Geographic Society, 17th and M Sts., Washington DC 20036  
VHS; 14 min.: 1975

**Tool Using**

Produced and distributed by the National Geographic Society  
VHS; 23 min.: 1976

**What Do Primatologists Do: Fieldwork in Borneo**

Produced by Dr. Anne Zeller, Dept. of Anthropology, University of Waterloo, Waterloo, Ontario, Canada  
VHS; 52 min.: 1991





Mat Hayward

Gorilla at Woodland Park Zoo