

TEACHER GLOSSARY

Airfoil Shape: The shape of a bird's wings, rounded on the top and flatter below, with a leading edge thicker than the trailing edge. This promotes lift.

Alula: A special group of feathers at the wrist that helps control takeoff, landing, and other flight maneuvers.

Barbs: Side branches of the shaft of a feather which together form the vane.

Barbules: Branches out from the barbs and have microscopic hooks that hold the barbs together like Velcro.

Binocular Vision: An area of visual overlap that enables an animal to judge distances.

Breeding Territory: The area around the nest defended from others of the same or competing species.

Carrion: Dead and decaying animals.

Carrying Capacity: The number of plants and animals that can be sustained long-term in a given area.

Consumers: Animals that eat plants and/or other animals. Primary consumers eat only plants. Secondary and tertiary consumers eat other animals. *Note:* a secondary consumer may be a primary consumer as well if it eats both plant and animal matter.

Decomposers: Species ranging from vultures and beetles to bacteria and fungi which break down dead plant animal material into organic substances which can then be used by producers.

Dihedral: Flight in which wings are held in a V-shape.

Diurnal: Active during daylight hours.

Ecological Niche: The role played by a plant or animal in its ecological community; its periods of activity, food preferences, means of acquiring food and where it carries out this role. The function served in the community, e.g. predator, producer, decomposer and how the function is performed.

Eyrie: The nest of a raptor.

Extirpated: Removed or destroyed totally.

Falconry: The sport of training and using raptors for hunting.

Gliding: A non-flapping downward slide in flight.

Habitat: The area that supplies an animal or plant with all its basic needs for survival including food, water, air, shelter and space.

Home Range: All the land used by an animal.

Hovering: A form of flight where a bird flaps its wings back and forth to remain in one spot to watch for prey.

Indicator Species: An animal whose population's health acts as a gauge to the health of an ecosystem.

Kiting: A form of flight in which a bird hangs motionless in the air by holding its wings partially folded and by facing into the wind. Hanging like a kite in the air.

Kleptoparasitism: The act of stealing food from another.

Limiting Factors: The conditions and/or resources that limit the quantities of living organisms in an area; including, but not limited to, food supply, rainfall, space and the number of available nesting sites.

Lift: The upward force created by air passing over an airfoil, such as a bird wing, causing the bird to rise.

Mantling: Covering prey with wings to prevent the escape of prey or theft of prey by another animal.

Monomorphic: When the male and female of a species look the same. Antonym: dimorphic.

Nictitating Membrane: An inner or "third eyelid" or membrane that serves to protect the eye.

Nocturnal: Active at night.

Predator: An animal that hunts and kills other animals for food.

Prey: An animal that is hunted and eaten by another animal.

Primary Consumer: A plant eater.

Producers: Plants, and some microorganisms, which use the sun's energy to produce food in the form of sugars and starches that are used to sustain the needs of all other organisms.

Secondary Consumer: Animals that eat other animals.

Shaft: The central spine of a feather.

Spicules: Specialized bumps on the bottom of the feet of some raptors (bald eagles, osprey) which help them grip slippery prey such as fish.

Species Survival Plan (SSP): Captive management program for conserving endangered species.

Stoop: A form of gliding flight in which a bird pulls its wings very close to its body and dives at a high speed.

Talons: The long, sharp claws of a raptor.

Thermal: A column of warm air formed when the sun heats up the ground; used by birds to increase their altitude while soaring.

Updrafts: Air forced upward when pushed up against a mountain range, cliff or other physical barrier; used by birds to increase their altitude while soaring especially during migration.

Vane: The broad, flat part of a feather.

RESOURCES

Curriculum and Activity Books

Denver Museum of Natural History's

The Wonder Series

Each book focuses on a different group of animals and is full of activities, stories, information, games and more. These books are a great resource for elementary teachers. The two books in the series that focus on raptors are:

Cooper, Ann C. Eagles: *Hunters of the Sky*. Robert Rinehart Publishers, Niwot, CO. 1992.

Cooper, Ann C. Owls: *On Silent Wings*. Robert Rinehart Publishers, Niwot, CO. 1994.

Caduto, Michael J. and Joseph Bruchac. *Keepers of the Animals*. Fulcrum Publishing, Golden, CO. 1991.

Ranger Rick NatureScope Series

This series of 18 teacher activity books, published by the National Wildlife Federation, is filled with ideas and background information about a specific topic or groups of animals. Titles most appropriate to the study of raptors include: *Birds, Birds, Birds* and *Endangered Species: Wild & Rare*.

NatureScope Books are available from:
National Wildlife Federation
1400 16th St. NW
Washington DC 20036-2266
1-800-432-6564

Project Wild and Wild School Sites

These resource books for K-12 teachers are full of activities and ideas for environmental education. You must attend a Washington Department of Fish and Wildlife education workshop to obtain these publications. Contact WDFW, Wildlife Education, 600 Capitol Way North, Olympia, WA 98501-1091, (360) 902-2808.

Raptor Coloring Books

Malick, Donald L. and Frances Hamerstrom. *Eagles, Hawks, Falcons and Owls of America, A Coloring Book*. Robert Rinehart, Inc. Publishers and The Raptor Education Foundation, Boulder, CO. 1984.

Green, John and Alan Weissman. *Birds of Prey Coloring Book*. Dover Publishing, Inc., New York, NY. 1989.

Non-fiction Publications for Younger Students

Wexo, John B. *Zoobooks-Birds of Prey*. Wildlife Education, LTD., San Diego, CA. 1986.

Biel, Timothy L. *Zoobooks-Owls*. Wildlife Education, LTD., San Diego, CA. 1992.

Wexo, John B. *Zoobooks-Eagles*. Wildlife Education, LTD., San Diego, CA. 1993.

Gieck, Charlene. *Eagle for Kids*. NorthWord Press, Inc., Minocqua, WI. 1991.

Parry-Jones, Jemima. *Eyewitness Juniors: Amazing Birds of Prey*. Alfred A. Knopf, New York, NY. 1992.

Burnie, David. *Eyewitness Books: Bird*. Alfred A. Knopf, New York, NY. 1988.

Jarvis, Kila and Denver W. Holt. *Owls, Who are they?* Mountain Press Publishing Co. Missoula, MT. 1996.

Ranger Rick is a monthly nature magazine for elementary-aged students published by the National Wildlife Federation. It is a great resource for both fictional and nonfictional nature articles including many articles on birds.

Non-fiction Publications for Older Students and Adults

Weidensaul, Scott. *Raptors: The Birds of Prey*. Lyons & Burford, New York, NY. 1996.

Dunne, Peter, David Sibley and Clay Sutton. *Hawks in Flight*. Houghton Mifflin Co., Boston, MA. 1988.

Clark, William S. and Brian K. Wheeler. *Peterson Field Guides: A Field Guide to Hawks*. Houghton Mifflin Co., Boston, MA. 1987.

Johnsgard, Paul A. *Hawks, Eagles & Falcons of North America*. Smithsonian Institution Press, Washington, DC. 1990.

Scott, Shirley L. *National Geographic Society Field Guide to the Birds of North America*. National Geographic Society, Washington DC. 1987.

Books on Attracting Wildlife

Adams, George. *Birdscaping Your Garden: A Practical Guide to Backyard Birds and the Plants that Attract Them*. Rodale Press, Emmaus, PA. 1994.

Burton, Robert. *The National Audubon Society North American Birdfeeder Handbook*. Dorling Kindersley, New York, NY. 1992.

Mace, Alice E. editor. *The Birds Around Us*. Ortho Books, San Francisco, CA. 1986.

Fiction

George, Jean Craighead. *My Side of the Mountain*. E.P. Dutton, New York, NY. 1988.

George, Jean Craighead. *On the Far Side of the Mountain*. Puffin Books, New York, NY. 1991.

George, Jean Craighead. *The Summer of the Falcon*. Harper Trophy, New York, NY. 1990.

George, Jean Craighead. *Owl in the Shower*. Harper Trophy, New York, NY. 1995.

Yolen, Jane. *Owl Moon*. Philomel Books, New York, NY. 1987. (picture book)

Miles, Victoria. *Spotted Owlets*. Orca Books, Victoria, BC. (picture book)

Videos

Birds of Prey: Their Biology and Ecology. Mountain Visions. 1996. Available through The Peregrine Fund (see address under following Raptor/Bird Organizations)

Spirit of the Eagle. Miramar Production. 1991.

Owls Up Close. National Audubon Society: Nature Science Network, Inc. 1991.

Hawks Up Close. National Audubon Society: Nature Science Network, Inc. 1991.

Internet Sites

Falcon Research Group <http://www.frg.org>
The Peregrine Fund <http://www.peregrinefund.org>
Woodland Park Zoo <http://www.zoo.org>
American Association of Zoos
and Aquariums <http://www.aza.org>
The Nature Conservancy <http://www.tnc.org>
Fish and Wildlife Service <http://www.fws.gov>

Owl Pellets

Woodland Park Zoo
5500 Phinney Avenue N.
Seattle, WA 98103-5897
(206) 684-4850

Limited quantities available

Pellets, Inc.
P.O. Box 5484
Bellingham, WA 98227-5484

Bone-sorting charts and booklet with skull keys also
available.

Raptor/Bird Organizations

Falcon Research Group
P.O. Box 248
Bow, WA 98232
(360) 757-1911
(also see Internet Sites)

The Peregrine Fund
World Center for Birds of Prey
5666 West Flying Hawk Lane
Boise, ID 83709
Business Office: (208) 362-3716
Interpretive Center: (208) 362-8687

Hawk Watch International
21 G Street, P.O. Box 660
Salt Lake City, UT 84110-0660
(801) 524-8511
1-800-726-4295

The Raptor Trust
1390 White Bridge Road
Millinton, NJ 07946
(908) 647-2353

Cornell Laboratory of Ornithology
159 Sapsucker Woods Road
Ithaca, NY 14850
(607) 254-2410

Seattle Audubon Society
8028 35th NE
Seattle, WA 98115
(206) 523-4483

East Lake Washington Audubon Society
P.O. Box 3632
Bellevue, WA 98009-3632
(425) 451-3717