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It's a zoo out there

Zoology resources

Of the many zoology sites on the Internet, some are terri c, some terrible, and a lot are in between. There are many good general sites, and some excellent ones for speci c animals, from cockroaches to corals. Since it would be impossible to cover everything, we will instead list a few favorites that will point you to other links and references.

General sites

If you are looking for quick information, here are some good, easy-to-search sources.

The Animal Diversity Web. Produced by the University of Michigan Museum of Zoology, this user-friendly site has been around for years and includes basic information and resources for teachers at either the K 12 or college level. *Access:* http://animaldiversity.ummz.umich.edu/site/index.html.

Encyclopedia of Life (EOL). EOL aims to serve as an online reference source and database for every one of the 1.8 million species that are named and known on this planet, as well as all those later discovered and described. All the pages digitized by the Biological Heritage Library (http://www.biodiversitylibrary.org/; see next page for description) will be made available through EOL, and will be linked to the species information via sophisticated software. This is very much a work in progress at this point but should ultimately be an outstanding resource. *Access:* http://www.eol.org/.

GBIF. The Global Biodiversity Information Facility (GBIF) seeks to digitize and make freely available biodiversity information from around the world. It s hosted by the University of Copenhagen-Denmark. *Access:* http://www.gbif.org/.

International Field Guides. This is a new compilation by Diane Schmidt, biology librarian at the University of Illinois, which merges her book, *A Guide to Field Guides: Identifying the Natural History of North America,* with its companion Web site International Field Guides. The result is a searchable database of eld guides for animals, plants, and more from North America and around the world. It s not all full text, but a useful start. *Access:* http://www.library.uiuc.edu/bix/ eldguides/main.htm.

Intute – Natural History. Although the homepage of this site concentrates on health and life sciences, the Natural History section includes a heading for Zoology Animals, and is broken down into subcategories with extensive lists. *Access:* http://www.intute.ac.uk/healthandlifesciences/nature/.

UMCP Glossary. This glossary is broken down by Volumes, one of which is zoology. The only drawback: it doesn t give pronunciations. *Access:* http://www.ucmp.berkeley.edu/glossary/glossary.html.

University of California Museum of Paleontology. Although it s a particularly good source of information on paleontology, there is a whole lot more here. *Access:* http://www.ucmp.berkeley.edu/index.php.

Taxonomic Web sites

There are a number of sites that keep up with the ever-changing names of animals and the knowledge of their even more rapidly changing relationships. They include:

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ICZN. The International Commission on Zoological Nomenclature, founded in 1895, oversees the International Code of Zoological Nomenclature. It is supported by and includes links to many organizations, and supports Zoobank, the world register of animal names. *Access:* http://www.iczn.org/.

ITIS. The International Taxonomic Information System is another good site. It includes plants, animals, fungi, and microbes of North America and the world. *Access:* http://www.itis.gov/.

Tree of Life. This is another good place to start, because it not only has taxonomic information, but also has references and many links. It is an excellent source of cladistic information, so that you can easily trace relationships among organisms, and it also makes clear where there is controversy. *Access:* http://www.tolweb.org/tree/.

UBIO. Universal Biological Indexer and Organizer, from the MBLWHOI Library at the Marine Biological Institute at Woods Hole. The site uses names and taxonomic intelligence to manage information about organisms. You can tell it s from a library! It includes classi cation information, synonyms, and common names. *Access:* http://www.ubio.org/.

Endangered species

Animal Info. This very organized site has information on rare and endangered mammals. You can search or browse by species, category, or country; nd links to organizations and other sites; and search a glossary and fact sheets for U.S. mammals. *Access:* http://www.animalinfo.org/.

NatureServe. This is a not-for-pro t organization whose mission is to provide the scienti c basis for effective conservation action. It has reliable information about species and ecosystems in trouble. *Access:* http://www.natureserve.org/.

Red List. From the World Conservation Union (IUCN), http://www.iucn.org/, the Red List provides the most up-to-date and authoritative information about the status of threatened and endangered animals. *Access:* http://www.iucn.org/themes/ssc/redlist2007/index_redlist2007.htm.

Literature databases

Biodiversity Heritage Library. The Biodiversity Heritage Library is a consortium of ten of the world s largest natural history libraries, which have agreed to digitize sections of their print holdings and make this information freely available over the Internet. It includes items either out of copyright or for which copyright permissions have been obtained. Current members are the American Museum of Natural History, The Field Museum, two libraries at Harvard University (the Ernst Mayr Library of the Museum of Comparative Zoology and the Botany Libraries), the Marine Biological Laboratory/Woods Hole Oceanographic Institution, Missouri Botanical Garden, Natural History Museum (London), Royal Botanic Garden at Kew, and the Smithsonian Institution. Work has already begun digitizing the out of copyright literature in the participants extensive collections to make it available worldwide. So watch this space! *Access:* http://www.biodiversitylibrary.org/.

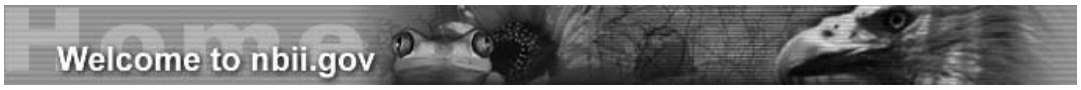
Biology Browser. This is a free bibliographic database from Thomson. You can browse by Organism, Subject, Geography or all three at once. Think of it as the free little brother of BIOSIS, Thomson s subscription database. It s a very useful site, with lots of helpful options like Directories, Hot Topics, and a Biology News Net that provide very readable synopses of the latest articles of biological interest. *Access:* http://www.biologybrowser.org/.

Zoological Record. All the other sites listed are freely available, but Zoo Record is a subscription database. However, no list of zoological resources would be complete without it, since it is the premier source for bibliographical information on the subject. Literature sources include more than 5,000 serials published in more than 100 countries, monographs, reports, and newsletters,

conference papers and abstracts. Coverage goes back to 1864, making it a valuable resource.

U.S. government sites

The National Biological Information Infrastructure (NBII). NBII is a good source for regional information, U.S. endangered species, habitats, invasive species, and the like. It has resources not otherwise easily found, such as links to collections, museums, databases, and lists of species. *Access:* http://www.nbii.gov/portal/server.pt.



U.S. Fish and Wildlife Service. USFWS is a rich, well-maintained and useful site, with links to topics such as legislation, grants, permits, as well as species information, and much more. *Access:* http://www.fws.gov/.

More specific resources

AmphibiaWeb. AmphibiaWeb is all about amphibian biology and conservation and was inspired by the worldwide declines. It includes maps, species information, photographs, sound les, as well as links to many speci c sites. *Access:* http://amphibiaweb.org/.

The Canadian Arachnologist. All things arachnid; the emphasis is on Canadian species, but it is quite comprehensive nevertheless, and there are many links and references. *Access:* http://www.canadianarachnology.org/.

Cornell Lab of Ornithology All About Birds. A great site packed with information such as birding basics (including a Gear Guide), News and Events, a comprehensive bird guide, and conservation. It includes sample sounds from the lab s extensive library of animal sounds and videos (covering more than just birds). *Access:* http://www.birds.cornell.edu/AllAboutBirds/.

Darwin Online. All of Charles Darwin s publications have been digitized and are freely available here. Darwin Online includes handwritten manuscripts, notebooks, diaries and journals, with more to come. *Access:* http://darwin-online.org.uk/.

Fishbase. Developed in cooperation with the UN Food and Agriculture Organization (FAO), Fishbase is a relational database of shes worldwide. Although the complete database is available for purchase, you can search for free and get good basic information. *Access:* http://www. shbase.org/home.htm.

HerpNet. This is a collaboration of natural history museums worldwide working on establishing a network of collections data for researchers. It includes links to similar projects for other taxa. It is partially funded by the National Science Foundation. *Access:* http://herpnet.org/.

Iowa State Entomology Index of Internet Resources. Compiled by a professor at Iowa State University, this is an easily searchable database of all sites entomological. You can search by taxonomic group, subdiscipline, or even by content type, to nd everything from blogs to keys to lesson plans to videos. *Access:* http://www.ent.iastate.edu/List/.

MarineBio. MarineBio is a nonpro t organization that maintains pages rich with links to other resources, news, lists of endangered species, information on a variety of issues, a newsletter, and more. Covers all marine taxa, including reptiles and birds as well as sh, sharks/rays, cephalopods, and marine mammals. *Access:* http://www.marinebio.com/.

Societies and organizations

Zoos and museums are often good sources of information. Bigger ones often have very rich sites, with the wide variety of information re ecting the sizes of their collections. Look for education resources or search the site by taxa. Here are a few to try:

American Society of Ichthyologists and Herpetologists. Publishers of the

journal *Copeia*, their Web site includes guidelines for the use of fishes, reptiles, and amphibians in research. *Access:* http://www.asih.org/.

American Society of Mammalogists (ASM). Special features include a Mammal Image Library, Mammalian Species with detailed accounts of a variety of animals (the first 761 are available for free download), and some open access articles from the *Journal of Mammalogy*. *Access:* http://www.mammalsociety.org/.

Brookfield Zoo The Field Guide to the Animals. This site has basic information on many species, some including links. *Access:* http://www.brookfieldzoo.org/.

Entomological Society of America. The major publisher of entomological journals. Also, under Resources, check out Frequently Asked Questions, and under Publications there is a list of Common Names of Insects and Related Organisms. *Access:* http://www.entsoc.org.

National Pest Management Association. If you don't want uninvited critters in your home, this not-for-profit organization offers information, advice, games for children, and references to local pest control operators. *Access:* http://www.pestworld.org/default.asp.

San Diego Zoo–Animal Bytes. This site has information on specific animals is at http://www.sandiegozoo.org/animalbytes/.

Smithsonian National Zoo. http://nationalzoo.si.edu.

St. Louis Zoo–About the Animals. http://www.stlzoo.org/animals/abouttheanimals/.

News feeds

There are a number of good biology news feeds, but we don't know of any just devoted to zoology. Our recommendation: pick a general one that you like and can handle, and just wade through for what you want. Science Daily (http://www.sciencedaily.com/news/) is probably the most comprehensive, but it is so vast that if you let it go for a day or so, you'll end up with an unmanageable number of entries. To get fewer posts, try a science feed from a news service like the BBC (http://news.bbc.co.uk/2/hi/help/rss/default.stm), the New York Times (http://www.nytimes.com/services/xml/rss/index.html), or CNN (http://www.cnn.com/services/rss/?iref=rsssvcs). If you subscribe to more than one feed, you will be sure of always seeing the most important and relevant news items.

If you have a favorite museum or zoo site that posts news, it might be a good choice. We post natural history entries on our library homepage at http://library.mcz.harvard.edu/. If you have particular interests, set up alerts for specific searches from your favorite databases or get the Tables of Contents from relevant journals.

And finally ... Gateways to multiple resources

Natural History at Harvard and Beyond. Of course we can't help including our own site, which also has a long list of Web sites broken down by subjects. If you want good information about something specific, say ants or crocodiles, chances are you can quickly find a good resource here. There are sites as diverse as The Dung File

(http://www.scirpus.ca/dung/dung.shtml); Genome Bioinformatics (http://genome.ucsc.edu/ and the Paleobiology Database (http://paleodb.org/cgi-bin/bridge.pl). *Access:* http://library.mcz.harvard.edu/natural_history/.

Natural History Reference Sources. Maintained by Adam L. Schiff of the University of Washington Libraries, this compilation of sites is comprehensive and nicely organized. There are essentially no notes, but all the sites have been vetted and the list is updated. It includes more than zoology, of course, but you can select the topic of interest. *Access:* http://www.lib.washington.edu/sla/ref.htm.