NetWatch

edited by Mitch Leslie

DATABASE

Eagles Up for the Count

Forty years ago, pesticides and hunting had slashed the number of bald eagle breeding pairs in the lower 48 states to less than 500. Today, with the population soaring to 7500 pairs, the U.S. Fish and Wildlife Service is mulling whether to remove the species from the protected list. This federal site holds newly posted data from annual midwinter bald eagle surveys from 1986 through 2000. Summary charts show that although most states saw rising eagle numbers during this time, a few, such as Alabama and Colorado, recorded declines.

ocid.nacse.org/qml/nbii/eagles

DICTIONARY

This Glossary Is Hot

Puzzled about the distinction between a collective dose of radiation and an absorbed dose? Need to know how cold and epithermal neutrons differ? Don't melt down—flip through this lexicon from California-based company Scientific Digital Visions, which defines more than 1000 terms in nuclear physics, nuclear engineering, and related disciplines. You'll learn that epithermal neutrons pack slightly more energy than cold neutrons. And an absorbed dose refers to the quantity of radiation received by a given amount of material, whereas a collective dose indicates the total accumulated by a population over a certain period.

glossary.dataenabled.com

EDUCATION

Rock-Solid Learning

Aimed at everyone from grade school students to civil engineers, the Geotechnical, Rock, and Water Resources Library (GROW) furnishes more than 900 education links and a host of online simulations. Hosted by the University of Arizona, Tucson, the site stresses civil engineering, listing tutorials on statics and soil mechanics, for instance. But it also includes plenty of background on earth science. Visitors can browse a primer on plate tectonics or find out what pollutants researchers have detected in their local watershed. Virtual experiments let students determine the effect of temperature on water flow, measure how different rock types respond to compression, and more. The site also connects to a wealth of lab exercises for K-12 classes.

www.grow.arizona.edu

SOFTWARE

Genomics Tool Kit

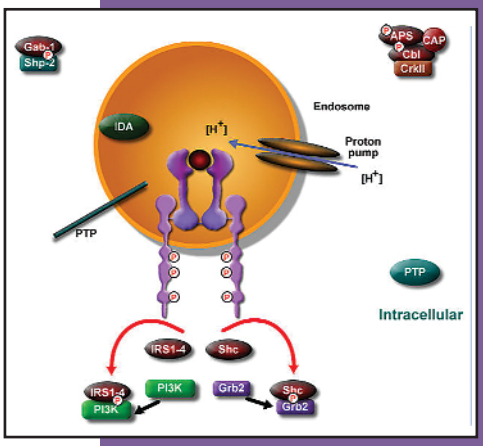
Much as a mechanic can't fix many cars with just a hammer, molecular biologists require more than one tool to analyze DNA and proteins. The Sequence Manipulation Suite 2, a revised collection of JavaScript programs crafted by bioinformatics expert Paul Stothard of the University of Alberta in Edmonton, Canada, offers more than 40 such tools for parsing short lengths of DNA or protein. Users can spruce up their files, transforming them from one database format to another, or tackle more involved jobs. For example, one program pinpoints where DNA-slicing enzymes will cut and orders the fragments by size.

bioinformatics.org/sms2

DATABASE

Mapping Life's Reactions

A cell works hard to stay alive, performing tasks as varied as slicing apart glucose, mending frayed DNA, and responding to hormones. To unravel such biochemical reactions or trace the connections between pathways, visit the Reactome, a newly revamped site from Cold Spring Harbor Laboratory, the European Bioinformatics Institute, and the Gene Ontology Consortium.



Designed for everyone from teachers who need an online textbook to researchers hoping to fill gaps in our knowledge, Reactome brims with peer-reviewed biological pathways. The site focuses on reactions in humans but also includes examples from rats, mice, and other model organisms. Pick a cellular job—say, mRNA processing—and find out where it occurs, which proteins and other molecules participate, and what other activities they influence. Uncover more details about a gene or protein by connecting to databases such as UniProt and Ensembl. Handy tools include the Pathfinder function, which provides steps between reactants and products. So far, Reactome spans cell division to lipid metabolism to DNA repair. The curators—who glean the info from the literature or DNA similarities—plan to add a new batch of pathways about every 3 months. Above, protons slip into an endosome, a step in recycling the insulin receptor.

www.reactome.org

Send site suggestions to netwatch@aaas.org. Archive: www.sciencemag.org/netwatch

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