

# The Encyclopedia of Life

## Scientists to Explore Life's Mysteries Through Encyclopedic „Macroscope“

First 30,000 **EOL** pages unveiled online for public “*alpha*” test and feedback;  
placeholder pages for 1 million species built in 1st year of 10-year project  
Rapid progress fosters confidence massive project can be done;  
Scientists, educators, hail 1st version of online resource; public asked for its say

The first 30,000 pages of a massive online Encyclopedia of Life were unveiled today *February 26th, 2008* at the prestigious Technology, Entertainment and Design (**TED**) Conference in Monterey, California.

Intended as a tool for scientists and policymakers and a fascinating resource for anyone interested in the living world, the **EOL** is being developed by a unique collaboration between scientists and the general public.

By making it easy to compare and contrast information about life on Earth, the resulting compendium has the potential to provide new insights into many of life's secrets.

In essence, **EOL** will be a microscope in reverse, or “*macroscope*,” helping users to discern large-scale patterns. By aggregating for analysis information on Earth's estimated 1.8 million known species, scientists say the **EOL** could, for example, help map vectors of human disease, reveal mysteries behind longevity, suggest substitute plant pollinators for a swelling list of places where honeybees no longer provide that service, and foster strategies to slow the spread of invasive species.

Most importantly, the **EOL** will be a foundational resource for helping to conserve the species already known and to identify millions of additional species that haven't yet been described or named. At its core is the knowledge about the world's species that has been discovered by scientists over the last 250 years. By putting this information all together in one place, **EOL** hopes to accelerate our understanding of the world's remaining biodiversity.

**EOL** will illuminate patterns in biodiversity, promising knowledge comparable in impact to that gained after the microscope's invention in the 1600s. The **EOL** “*macroscope*” will have a catalytic effect on comparative biology, ecology and related fields. It will also be the ultimate online field guide, complete with links to DNA barcoding and other information of interest and use to everyone from professional scientists to birdwatchers and gardeners.

Among many potential applications of the **EOL**:

- Tracing the relation between changes in animal and plant populations and climate;
- Mapping the distribution of human disease vectors, such as crows, mosquitoes and the West Nile virus;
- Comparison of the life spans of related species – a prelude to lab research into reasons for human aging;
- Port inspections of ballast water for invasive species, assisted by links to molecular DNA barcode reference information;
- Assist in field research and dramatically shorten the time required to authenticate or describe new mammals, birds, bugs, plants, bacteria and other species discovered by scientists anywhere in the world;

Revolutionize teaching and learning of the life sciences for all ages;  
Contribute to timely and informed environmental management decisions by  
professionals and citizen environmental managers alike.

Initiated last spring, **EOL's** infrastructure now includes placeholder pages for 1 million species, of which 30,000 have been populated with detailed information derived from comprehensive, authoritative compilations available for some taxonomic groups (e.g., FishBase, AmphibiaWeb).

In addition, about two dozen highly developed multimedia pages are presented as examples of what to expect in time throughout the **EOL**.

Feedback on the first 30,000 pages will shape the ultimate design and functionality of all 1.8 million pages, scheduled for completion by 2017. It will also help inform priorities for content development.

The rapid progress to date was congratulated by Harvard's E.O. Wilson, University Professor Emeritus, who articulated the need for a dynamic modern portrait of biodiversity in a widely read essay in 2003. His letter in 2005 to the John D. and Catherine T. MacArthur Foundation resulted in a \$10 million seed grant to start the EOL, soon complemented by a further \$2.5 million from the Alfred P. Sloan Foundation.

*"The launch of the Encyclopedia of Life will have a profound and creative effect in science," says Prof. Wilson. "It aims not only to summarize all that we know of Earth's life forms, but also to accelerate the discovery of the vast array that remain unknown. This great effort promises to lay out new directions for research in every branch of biology."*

The basic design of the **EOL** species pages that were launched today also owes its genesis to the **TED** Conference and to Professor Wilson. In March 2007 Wilson was one of the recipients of a coveted **TED** prize for his work in documenting and understanding the world's biodiversity. In his acceptance speech, Wilson asked **TED** attendees to help him develop an encyclopedia of life. Avenue A |Razorfish, an innovative web design firm, took up the challenge and helped to create an award winning video and the basic template for EOL species pages.

*The pages launched today include:*

Two dozen exemplar pages, illustrating the kinds of rich multi-media information to be provided for all well-known species. Content on these pages has been verified by relevant experts;

30,000 species pages, covering a small number of taxonomic groups. These pages contain authenticated content but are not as fully developed as the exemplars;

1 million minimal pages, in most cases providing the species' scientific and common names, limited information about its taxonomic position and distribution, and links to other sources of information. These pages are, in effect, placeholders to be populated with information validated by specialist content editors. Content will also be generated via the Biodiversity Heritage Library, other web-based resources, and by professional and „citizen scientists“;

Several thousand **linking pages** to help users traverse the taxonomic hierarchy.

Simply listing in one place all 1.8 million species known to science will be unprecedented.

Today, knowledge about biodiversity gleaned over 250 years is scattered across databases, books, and journals worldwide. Researchers are often overwhelmed by lists of sites found by search engines or by lack of easy access to libraries, museums, and other storehouses of knowledge.

**EOL** will create „one-stop shopping“ for authoritative information, offering the world at large a better understanding of the planet and all its inhabitants. It is being assembled by a growing partnership of individual scientists, international organizations, technology leaders, and prestigious research institutions. But soon anyone will be able to provide information for consideration, too.

*“It is exciting to anticipate the scientific chords we might hear once 1.8 million notes are brought together through this instrument,” says Jim Edwards, Executive Director of the EOL. “Potential EOL users are professional and citizen scientists, teachers, students, media, environmental managers, families and artists. The site will link the public and scientific community in a collaborative way that’s without precedent in scale.”*

*“There are very many species for which we do not have high quality images or text. Think of these pages as invitations to contribute to **EOL**,” says Dr. Edwards.*

Starting later this year, the public will be able to contribute text, videos, images, and other information about a species. The best of this information will be incorporated into the authenticated pages.

The authenticated pages also include a wealth of other materials, including peer-reviewed articles and access to DNA barcodes, all freely available. While most pages are now in English, eventually, they will be available in several other languages for teaching and learning.

*“EOL is a good example of the way the World Wide Web can be used innovatively to assemble diverse kinds of information in an easy-to-use, ever-growing compendium. It can accommodate almost any kind of information about species and, unlike a published book, can be updated instantly,” says Dr. Edwards.*

## **Background**

The EOL Steering Committee is comprised of senior authorities from Harvard University, Smithsonian Institution, the Field Museum of Chicago, the Marine Biological Laboratory at Woods Hole, the Biodiversity Heritage Library consortium, Missouri Botanical Garden, and the MacArthur and Sloan Foundations.

The EOL Institutional Council contains more than 25 institutions from around the world and provides EOL with global perspectives and outreach capabilities. The Distinguished Advisory Board consists of 13 global leaders from the scientific and policy communities.

<http://www.eol.org/index>