

Imagine

a website for every species



Encyclopedia of Life

ANNUAL REPORT, 2008–2009



Encyclopedia of Life's outstanding accomplishments in 2008-2009 are a tribute to dedicated users and scientists around the world, whose invaluable contributions are shaping the project's future. I also wish to thank our many generous donors—especially the John D. and Catherine T. MacArthur and Alfred P. Sloan Foundations—who have been instrumental in supporting EOL's achievements from the very first day.

We understand the importance of constantly developing new partnerships to enhance our ties with a global network of scientists and contributors, and in the past year we have welcomed collaborations with over 40 organizations. We are truly grateful to the diverse individuals and groups that generously shared their knowledge, time and skills. Our successes would not have been possible without them.

To help build depth of information on taxa and habitats, we have decided to add an additional thematic approach to aggregating content. Our first theme will be marine biodiversity. Using the species information developed by the Census of Marine Life and the World Registry of Marine Species as our starting point, we aim to work with the relevant communities and individuals to serve species pages for 90% of all macroscopic marine life—some 215,000 species—by 2013. By bringing together scientists and information from diverse disciplines, we hope to provide the underlying information necessary for developing novel solutions for marine environmental problems such as the conservation and management of global marine biodiversity.



Encyclopedia of Life

"It took more than four billion years to transform lifeless rocks and water into an astonishingly diverse paradise, and less than a century to destroy thousands of the species that make it prosper. It is difficult to care about species that have been lost if you never knew of their existence."

My TED wish—to protect the ocean, blue heart of the planet—will provide safe havens for many species yet to be discovered, give EOL a chance to get acquainted with them and, I hope, inspire actions that will give them—and us—an enduring future."

Sylvia Earle



The achievements highlighted in this annual report illustrate EOL's emphasis on assembling the data needed to answer important questions about biodiversity, our application of breakthrough science and technology to tackle those questions, and our commitment to serving data that is authenticated and relevant to our users, whether they are young students or experienced professionals.

JAMES EDWARDS
EXECUTIVE DIRECTOR

Sylvia Earle—prominent ocean researcher and conservationist, former U.S. NOAA Chief Scientist, National Geographic Explorer-in-Residence, and member of EOL's Distinguished Advisory Board—was recognized with one of the three prestigious TED (Technology, Entertainment, Design) prizes in 2009.

The TED Prize is awarded each year at a gathering of the foremost representatives from these communities. In addition to the monetary award, recipients have the opportunity to deliver an address on their "wish to change the world."

Through its marine biodiversity theme, the Encyclopedia of Life will be assembling pages on all known marine species, supporting Dr. Earle's wish to use the web to save and restore the ocean.

Encyclopedia of Life

...an outstanding beginning

Established to make comprehensive, authenticated information about the world's biodiversity freely available over the Internet, the Encyclopedia of Life (EOL) has gotten off to a remarkable start.

EOL has created an excellent collaboration among its cornerstone institutions and recruited key staff members. EOL has developed essential software, a robust mechanism for licensing information and partnerships with content providers from around the globe.

Encyclopedia of Life's portal includes more than 160,000 authenticated species pages, another 1.4 million base pages and links to 14 million pages of digitized biodiversity literature. In the newest version of the EOL portal, users can contribute photos and videos via the EOL Flickr Group, apply tags to images and provide comments on the content.

Response to the project has been overwhelmingly positive. The public has responded enthusiastically from 230 countries, viewing 8 million pages. Hundreds of members of the scientific community have participated in innovative synthesis meetings to explore biodiversity in a changing world. EOL has also been well received internationally and continues to cultivate global partnerships. And in EOL's commitment to sharing knowledge, it is strengthening ties with educational and citizen-science communities and developing new, practical environments for learning.

A Thematic Approach

Now that the portal has been up and running for more than a year, EOL has decided to supplement its existing data aggregation with a thematic approach that has a special focus on marine biodiversity. Relying heavily on information provided by the Census of Marine Life, EOL plans to

have rich pages on at least 90% of named marine species—totaling 215,000 species—by 2013.

Looking Forward

Encyclopedia of Life will build upon this excellent foundation, serving a half-million authenticated species pages within the next two to three years.

EOL will continue to add site enhancements, roll out a curatorial network for authenticating information, establish a network of educators, develop relationships with citizen science communities and refine the tools for searching biodiversity information and literature.

All of these efforts will increase the power of the EOL "macroscope" to identify hitherto unrecognized biodiversity principles and patterns, to explore their applications to contemporary society and to generate greater public understanding of this precious and fragile world.



Silver moon
Monodactylus argenteus
TANAKA Juuyoh
(Flickr: TANAKA Juuyoh)

During the next five years, EOL will:

- Create one million scientifically authenticated species pages
- Digitize a large portion of the world's core biodiversity literature
- Generate educational materials for students, schools and citizen scientists
- Serve as a resource to generate new knowledge about the world's biodiversity

Highlights

of 2008 – 2009

September 2008:

Image Sharing on Flickr

EOL announces the creation of the EOL Flickr Group, allowing users to upload their photos for EOL species pages. Page 4.

October 2008:

Curator Network Unveiled

EOL announces the initial stage of the Curator Network. EOL curators are responsible for maintaining the quality of authenticated content on species pages. Page 6.

The First Regional EOL

The first regional EOL, in collaboration with Naturalis, the National Museum of Natural History in the Netherlands, is announced. It will serve information in the Dutch language about plant and animal species found in the Netherlands. Page 8.



January 2009:

New Site Features Released

In an upgraded version of the EOL portal, unauthenticated material is clearly marked in yellow and users can share their knowledge by adding comments, tagging images and uploading videos through the EOL Flickr Group. Page 4.



February 2009:

Sylvia Earle Wins TED Prize

Sylvia Earle, legendary ocean researcher and member of EOL's Distinguished Advisory Board, wins a 2009 TED Prize and shares her wish to set up an expanded set of marine reserves to protect the vital "blue heart of the planet." Dr. Earle highlights the potential of EOL to help make this happen.



Greylag goose, *Anser anser*
Wayne Dumbleton
(Flickr: dracobotanicus)

March 2009:

China Visit

EOL representatives meet with colleagues at the Chinese Academy of Sciences, who are enthusiastic about wide-ranging collaborations with EOL. Page 8.

May 2009:

Indiana Dunes BioBlitz

EOL, National Geographic Society and the U.S. National Park Service support the Indiana Dunes BioBlitz, a 24-hour event in which teams of scientists, volunteers and community members join forces to find, identify and learn about as many local plant and animal species as possible. Page 14.

June 2009:

e-Biosphere 09

Co-sponsored by EOL, the Natural History Museum (London) and several other organizations, **e-Biosphere 09: The International Conference on Biodiversity Informatics** focuses on achievements in biodiversity informatics and discusses strategies for its future. Page 9.



Site Enhancements

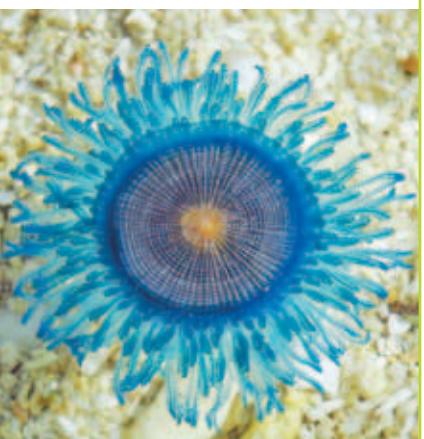
...rich content, sophisticated tools

As its user base grows, EOL continues to engage people everywhere with a greater number of enhanced species pages and is developing a comprehensive set of knowledge tools to navigate and mine EOL's increasingly rich content.

More Images

On September 12, 2008, EOL invited users to join the newly formed EOL Flickr Group and post photos to be served on the species pages. The group currently has more than 1,100 members from around the world and more than 29,000 images posted.

Users can also help identify images with the correct species names. This matching of images will allow the display of the photos on corresponding EOL species pages.

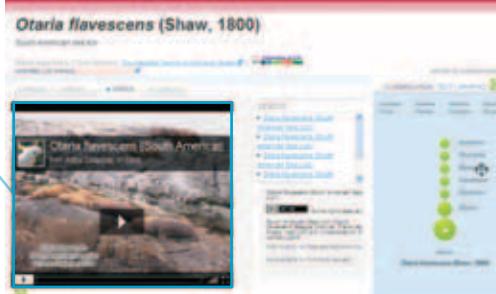
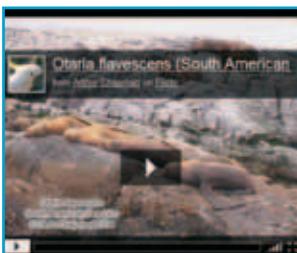


Blue button, *Porpita porpita*
Paul Anthony Stewart
(Flickr: paulhypnos)



Introducing Videos

As of early 2009, EOL is featuring videos on species pages. In the first six months, more than 200 videos were uploaded to the EOL Flickr Group and tagged with species names. To see videos, move the information slider to "all" and select the video tab.



Redesigned portal

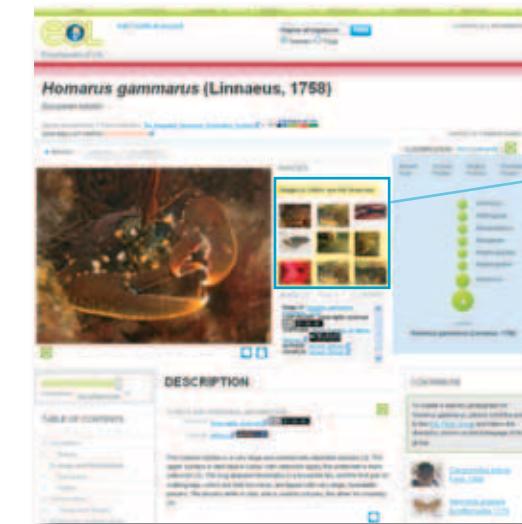
The newest version of EOL's portal was unveiled in early 2009. Now serving more than 160,000 authenticated species pages covering a greater breadth of biodiversity, the additional content is greatly improving our coverage amongst the most popular species (based on search queries).

The new pages clearly differentiate authenticated information from unauthenticated information, with a yellow background for unauthenticated photos and text. Users can choose whether to view unauthenticated content by using the slider on any species page or through the preferences menu on the top

menu bar. As EOL's Curatorial Network gets underway, experts will review this information and, if accurate, remove the yellow background.

All EOL accounts are free, and users can add comments to a species page or any text description or image. Registered users can also tag any image with species identifications and search for tags later to find images and their related species.

New icons for comments and tags are found on the species pages next to images and descriptions. Comments can be viewed on a species page by clicking on the new comments tab.



News and Networking

Encyclopedia of Life is discovering new ways to use technology to reach out to the general public and encourage engaged and scientifically literate citizens. The RSS feed allows enthusiasts to constantly keep up with EOL News updates by subscribing on the EOL home page. And recognizing the increasingly social aspect of the Internet, an AddThis button has been incorporated to bookmark and share EOL via email or social networks, such as Facebook, MySpace and Twitter.



Open Source Environment

EOL has placed its software in an Open Source environment and is adding Application Programming Interfaces (APIs) that allow developers to access the content within EOL and build new applications using it.



Curators, Fellows and LifeDesks

...creating an environment of expert collaboration



Object Curation

VETTED
 Trusted
 Untrusted

VISIBILITY
 Show to all users
 Hide from all except curators
 Permanently Remove

Note that some changes may take 24 hours to be shown on the website to other users.

Grus grus (Linnaeus, 1758)

BIOVERSITY Object Curation

NAME OF CURATOR: [REDACTED]

DATE OF CURATORSHIP: [REDACTED]

CONTROLED BY: [REDACTED]

EXPIRED: [REDACTED]

To support the massive undertaking of building pages on all 1.8 million known species, EOL is fostering an infrastructure of people and technology—experts to contribute and authenticate content and software tools to facilitate this online collaboration.

Curator Network

EOL species pages are populated with data from numerous sources—both authenticated and not—around the world. To assure the quality of the information on the species pages, EOL curators are responsible for reviewing this content and assessing its accuracy. They are often professional scientists, but may also be citizen naturalists who have demonstrated a commitment to quality science.

Curators examine the content available for a species—particularly unvetted content from public sources and non-authenticated sources such as Flickr—and approve it to appear on an authenticated page. They leave comments, add tags, rate content so the best is highly visible and contribute information from their own research.

The Curator Network was tested during the first half of 2009, and EOL Fellows and their mentors were among the first group

of curators. The network will be greatly expanded in the latter part of 2009 as the program begins allowing the public to sign up as curators.

EOL Fellows

To provide content to build the Encyclopedia of Life, EOL launched its Fellows Program in 2008. The program is oriented to postdoctoral students and graduate students who will contribute content from their own research and catalyze contributions from others in their scientific communities.

Eight fellows were selected in the pilot program hosted by the Smithsonian Institution. They will tackle diverse areas in the tree of life, including the wildflowers of Tibet, dragonflies, metalmorph moths, sponge-dwelling shrimp, amphibians of Panama, dung beetles, ghost shrimp and ribbon worms.

After the pilot phase, the program will be expanded worldwide. In late 2009, Encyclopedia of Life intends to open an international competition to provide supplemental funding for the best people from different parts of the world to prepare species pages, possibly in several languages.

A generous gift to the Smithsonian Institution by David M. Rubenstein will provide funding for at least 60 more fellows in the next four years. The next deadline for applications will be in fall 2009.

LifeDesks

As ever-increasing numbers of scientists and the public turn to EOL for information, knowledge tools like LifeDesks are under development to make the online management and sharing of biodiversity data easier than ever. Through these dynamic web environments, users can shape EOL by contributing to the ongoing effort to document the world's species.

LifeDesks are customizable and collaborative web environments for groups who wish to develop an online presence based on their favorite group of organisms or region of study. Each LifeDesk is an independent website—with its own database and classification—and numerous ways to export content.

In early 2009 there were more than two dozen active LifeDesks in beta testing by the taxonomic community, including the first EOL Fellows and curators. LifeDesk owners provided valuable feedback on the software tools while they managed classifications, uploaded images and bibliographies, and produced text for the species pages. Early outstanding efforts included *Insects of Micronesia*, *Metalmorph Moths* and *The Pinacate Beetle Project*.

In the future, similar tools will be made available for citizen scientists and education, with modules tailored to the activities of

LifeDesks
Serving your biodiversity community

What is LifeDesk?
A limited number of LifeDesks are available at this time. We are looking for expert taxonomists, biologists, K-12 students, and citizen-scientists to become beta users.

With LifeDesk you can:

- Upload and manage your classification
- Build a team of collaborators
- Organize your content & images
- Participate in Encyclopedia of Life

See the LifeDesk toolkit

Create Species Pages

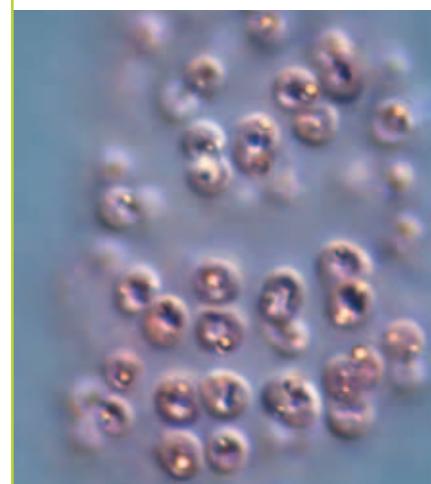
ELEO
Pinacate Beetle Project

Help make LifeDesk better

Are you a Drupal 6.0 developer? How would you make LifeDesk better? Please CONTACT US.

these communities. These groups will be able to upload observations, organize content and share it with interested parties across disciplines and geographic regions. The content provided by these groups will be reviewed by EOL curators.

EOL is currently working to refine the user interface for LifeDesk participants to ensure that when LifeDesk is opened up to more users, all the tools are high quality and easy to use. lifedesks.org



Global Outreach

...Regional EOLs and international collaboration

EOL continues to cultivate global partnerships by developing regional versions of EOL and hosting multinational conferences related to biodiversity initiatives.

Regional EOLs are a key feature of EOL's global outreach. They will typically serve species pages for the flora and fauna from a specific geographic area, in languages used in the region. Encyclopedia of Life is in various stages of discussion and development with representatives of countries wishing to establish their own EOLs.



The Netherlands

Naturalis, the National Museum of Natural History in the Netherlands, has partnered with EOL to create the first regional EOL. It will serve species pages on more than 35,000 native species of Dutch flora and fauna in the Dutch language. Hundreds of scientists at Naturalis and partner organizations are compiling species information, images and trend graphs

into the Dutch Species Catalogue. This information will also be shared in English through the central EOL portal.

www.nederlandsesoorten.nl

Central America

Costa Rica's national biodiversity institute, INBio, is taking the initial steps to start an education-based regional EOL for Central America. INBio is exploring how their program, Cyberhives (*Cibercolmenas* in Spanish), can be expanded for use in other Central American countries. Cyberhives is a methodology based on virtual communities of learning. It promotes the innovative use of science and information technology in the classroom, in Costa Rica's wild protected areas and in cyberspace to generate experiences and projects that stimulate students to learn and build knowledge about their local biodiversity.

China

In June 2009, EOL representatives signed a Memorandum of Understanding with members of the Chinese Academy of Sciences, who expressed their enthusiastic desire to work with EOL and engage in exchange visits of personnel. They are developing a Chinese regional EOL to serve information and literature about Chinese species. They are also planning to host a full EOL mirror site for Asia and translate the entire EOL into Chinese. They have begun significant high-quality digitizing of Chinese language biodiversity literature and are taking steps to join the Biodiversity Heritage Library consortium.

Cape teal, *Anas capensis*
Wayne Dumbleton
(Flickr: dracobotanicus)



e-Biosphere 09:

The International Conference on Biodiversity Informatics

EOL joined with several other national and international biodiversity informatics initiatives to organize and sponsor **e-Biosphere 09**, an international conference devoted to biodiversity informatics, held in London, June 1–3, 2009.

Biodiversity informatics is a young and rapidly growing field that brings information science and technologies to bear on the data and information generated by the study of organisms, their genes and their interactions. In doing so, it is creating unprecedented global access to information on biological species and their role in nature.

This information has major financial benefit and will be profoundly important to measure environmental changes now underway, for example, tracking differences in the range and abundance of plants and animals as worldwide temperature and precipitation patterns shift.

Amid growing interest from governments and policy makers, more than 500 experts from 45 countries convened to assess world progress in the new fields of "bioinformatics" and "e-taxonomy," setting the path for global work involving brilliant new technologies that help identify known and unknown forms of life—and organize and visualize knowledge about them—ever more quickly, cheaply, easily and accurately.

Scientists charted a course to continue the democratization of biodiversity information and worked to develop integrated, easy-to-use tools to allow everyone in the world to extract, manipulate, interact with and contribute information about the plants, animals, microbes, fungi and other organisms with which we share this planet.



The meeting also focused on the users of biodiversity data—from birdwatchers to farmers and school children—all the sorts of people who have expressed interest in EOL.

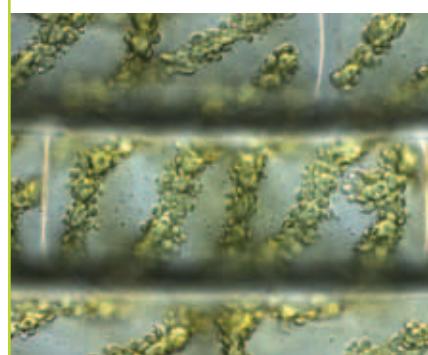
The organizers created an Online Conference Community to offer a series of discussion forums, providing researchers and biodiversity informatics users the opportunity to discuss, debate and share ideas with others around the world. The discussions were continued by the breakout groups during the conference.

A "street fair" was held to familiarize attendees with additional biodiversity informatics activities and projects. Three adjacent areas in the conference venue were devoted to exhibits, poster presentations and demonstrations of software and databases.

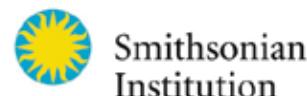
www.e-biosphere09.org



Nomocharis aperta
Wayne Dumbleton
(Flickr: dracobotanicus)



EOL Cornerstone Institutions



The Encyclopedia of Life is led by an international group of prominent natural history institutions and educational and research facilities. The project is also supported by thousands of individuals and groups who share their knowledge and data.

The Biodiversity Heritage Library consortium comprises ten major natural history museum libraries, botanical libraries and research institutions. This international group works to digitize the published literature of biodiversity in their collections and make it available through a global "biodiversity commons." www.biodiversitylibrary.org

The Field Museum of Natural History was incorporated in 1893 for the "accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating art, archaeology, science and history." The Field Museum is an international leader in anthropology, evolutionary biology, botany, conservation, cultural understanding, geology and zoology. www.fieldmuseum.org

The Missouri Botanical Garden, founded in 1859, is the oldest botanical garden in continuous operation in the United States. The 79-acre Garden is a National Historic Landmark and a center for science, conservation, education and horticultural display. www.mobot.org

The Marine Biological Laboratory is an international center for research, education and training in biology, biomedicine and ecology. The Marine Biological Laboratory is the oldest private marine laboratory in the United States, with research in fields such as ecology, cell biology, neuroscience, genomics and microbiology. www.mbl.edu

Harvard University, which celebrated its 350th anniversary in 1986, is the oldest institution of higher learning in the United States. Established in 1859, the Harvard Museum of Comparative Zoology and its collections are a world-renowned center for research and education in evolutionary and comparative biology. www.mcz.harvard.edu

The Smithsonian Institution was founded 1846 "for the increase and diffusion of knowledge." Today the Smithsonian includes 19 museums, galleries, the National Zoo and 9 research centers. In 2008 its museums had more than 25 million visitors. The Smithsonian Institution's National Museum of Natural History hosts the EOL Secretariat. www.smithsonian.org

Species Pages Group

...assembling rich, current and accurate information about species worldwide



The Species Pages Group works with the scientific community and other contributors to assemble and authenticate the content needed for species pages.

The group recruits diverse data providers and engages biodiversity experts to act as curators so that species information is correct and current. In addition, the group is working to deliver personalized information to specialized audiences through customized portals.

Highlights:

Marine Biodiversity Theme

The Species Pages Group has been planning for the marine theme by hiring a dedicated coordinator, prioritizing marine content partners and supporting several EOL Fellows focused on marine species.

Engaging New Partners

In order to streamline partnering, EOL now offers the Content Partner Registry online at www.eol.org/content_partner. The Content Partner Registry allows potential partners to complete an agreement with us, understand our transfer schema and set up and monitor dynamic sharing of their data with EOL.

Regional EOLs

The Species Pages Group ensures access to tools, best practices and compatible technology so that regional EOLs will be able to seamlessly exchange data with EOL and serve both their local communities and the larger world through EOL.

Curator Network

The Species Pages Group began building the network of expert curators who review EOL's content and launched curator tools to facilitate this review. Curator review is especially important to authenticate the images submitted by the EOL Flickr Group.

VOICES

As the Director for Research and Collections at the National Museums of Kenya, my current position is basically science administration. I use EOL quite a lot, especially when I am reviewing reports and proposals on biological sciences that make references to unfamiliar taxa.

DR. HELIDA A. OYIEKE
DIRECTOR FOR RESEARCH AND COLLECTIONS
NATIONAL MUSEUMS OF KENYA



Humpback whale
Megaptera novaeangliae
Dmitry Mozherin (Flickr: dimus62)



Component Groups carry out EOL's five subprojects:

- Species Pages Group
- Biodiversity Informatics Group
- Scanning and Digitization Group
- Education and Outreach Group
- Biodiversity Synthesis Group

Biodiversity Informatics Group

...serving biology



The Biodiversity Informatics Group hosts www.eol.org, supplies IT services for the project and builds software that makes the EOL site possible.

The group collaborates with data providers, seamlessly aggregating data from thousands of sites into species pages. It is developing novel informatics tools to capture, organize and reshape knowledge about biodiversity.

Highlights:

After the prototype of the EOL portal was released in January 2008, the entire EOL team reviewed and improved the hardware, processes and priorities. The resulting robust and flexible architecture made possible the enhancements released in February 2009. The Biodiversity Informatics Group created an array of software and tools to improve the site management and content; these efforts are described in the site enhancements on pages 4 and 5.

Click-through licensing agreements and automated submission tools were created to speed up the addition of content partners. LifeDesks were introduced to facilitate online collaboration, and the group reached agreement with the European Distributed Institute of Taxonomy (EDIT) to collaborate on the development of a unified Scratchpad/LifeDesk product line.

On the international front, the group released the first component of the semantic Global Names Architecture—an environment to promote machine-to-machine interactions focused on scientific and common names of species—developed in collaboration with the Global Biodiversity Information Facility (GBIF). The first component, the Global Names Index (www.globalnames.org), will promote

the use of names for nomenclatural and taxonomic purposes, but more importantly to organize information about organisms.

Behind the scenes, the group released the first suite of Application Programming Interfaces (APIs)—programs that provide automated access to data and indexing information to allow for exploration of new and different ways of utilizing the content. To prepare for increasing demand on the site, the group redesigned the architecture for greater robustness and stability and implemented a “split production site” in which the Marine Biological Laboratory and the Smithsonian Institution share responsibility for hosting the EOL portal.

VOICES

Hello EOL,

I have a photo hobby and shoot anything that will stand still long enough and some things that move. I am pleased to offer some of these to the project and hope it continues with great success.

DONALD E. RABY
EOL FLICKR GROUP MEMBER DE RABY

Scanning and Digitization Group

...making the published record of biodiversity open to all



The Scanning and Digitization Group is led by the Biodiversity Heritage Library—a consortium of ten libraries of natural history, botany and zoology that are digitizing the published literature of biodiversity held in their respective collections and making it available as part of an open biodiversity commons. The BHL Portal is linked to the EOL species pages.

Highlights:

The EOL Scanning and Digitization Group has increased its scanning so that the site now contains more than 35,000 volumes with over 14 million pages of digitized biodiversity literature from the collections of the contributing libraries. Through taxonomic name-finding software, more than 400,000 EOL species pages are linked to portions of these numerous texts via the BHL Portal (www.biodiversitylibrary.org).

A new, improved way of serving page images was developed by the group's technical team using djatoka, an open source JPEG 2000 image server. The Biodiversity Heritage Library Portal that serves the digital texts now has a function that allows users to specify the exact pages of any given volume they wish to download and then create a custom pdf of those pages. This will facilitate using the BHL Portal for extraction and downloading of articles.

BHL Europe has been funded by the European Commission to digitize and assemble biodiversity literature from several European libraries. This partner project will add significant biodiversity content.

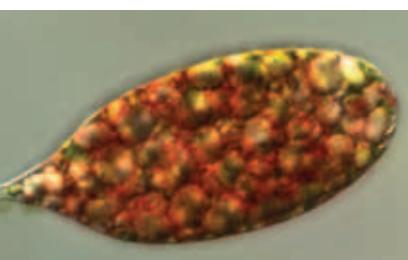
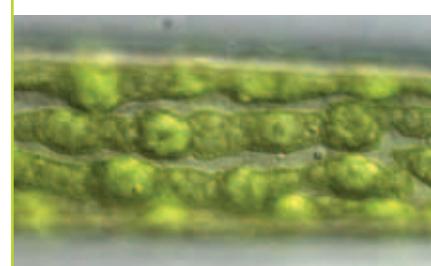
VOICES

My deepest gratitude for allowing me access to the digital version of the very rare Bulletin des Séances de la Société Entomologique de France, which is held by extremely few libraries in the world. It has been very important for my work on the database of the names of the butterflies of the world to be able to consult this series at leisure. I cannot stress enough the importance of having access to electronic versions of literature, especially to researchers who cannot benefit from well-endowed institutional libraries.

DR. GERARDO LAMAS
MUSEO DE HISTORIA NATURAL
UNIVERSIDAD NACIONAL MAYOR
DE SAN MARCOS
LIMA, PERÚ



South American fur seal
Arctocephalus australis
Wayne Dumbleton
(Flickr: dracobotanicus)



Green turtle, *Chelonia mydas*
Drew Avery (Flickr: drewavery)



Education and Outreach Group

...facilitating collaborative online biodiversity tools



The Education and Outreach Group works to generate global awareness of EOL as a collaborative learning tool, exploring and promoting new and exciting uses that foster understanding and appreciation of biological diversity among people worldwide.

Highlights:

INVOLV

The Education and Outreach Group is collaborating with computer scientists at Harvard University to develop a visualization of life on Earth for educational purposes, particularly in museums and other learning centers. The visualization is displayed on an interactive, multi-touch, tabletop computer screen and a high-resolution data wall. The underlying taxonomic and phylogenetic data sets, content and data objects for the visualization come from EOL and its content providers, such as the Tree of Life Web Project. The Harvard Museum of Natural History debuted this technology in its arthropod exhibition hall in early summer 2009. www.involvweb.org

Student Contributions

Undergraduate students, with the supervision of their professors, are contributing to the Encyclopedia of Life through class projects where they submit information about species to EOL content partners. A pilot project focusing on fungi has been developed with Mushroom Observer and more than 100 draft pages have been written by students. Both the undergraduates and professors have been very positive about using this approach as a learning platform in their classes.

www.mushroomobserver.org/name/eol_preview

BioBlitz

EOL teamed up with National Geographic Society and the U.S. National Park Service to organize and participate in the Indiana Dunes National Lake Shore BioBlitz in May 2009. Scientists, naturalists, educators and students combed the park for 24 hours to discover and inventory every living creature and plant in this biodiverse national park, and this species information will be uploaded to EOL species pages. The three collaborators are creating web-based tools, educational materials and resources to further utilize EOL in support of community-based science activities that strengthen the relationships among people, nature and ecosystems. www.nationalgeographic.com/field/projects/bioblitz.html

VOICES

EOL is really a special tool that has the potential to be a key part of the BioBlitz system. People participating in BioBlitzes will hear unfamiliar species names and can look them up online. More sophisticated components and accessories to EOL will also potentially facilitate species identification on the ground.

MISHA HERSCU
SENIOR, AMHERST REGIONAL HIGH SCHOOL
AMHERST, MASSACHUSETTS

Biodiversity Synthesis Group

...using EOL to accelerate the pace of scientific discovery in biodiversity and evolution



The Biodiversity Synthesis Group funds cross-disciplinary meetings and workshops to explore integrative topics in biodiversity, conservation and evolution, helping users develop new ideas and discern large-scale patterns.

Highlights:

Synthesis Meetings

The Synthesis Group has had a full slate of EOL meetings and workshops. Between July 2008 and July 2009, the group hosted 11 synthesis meetings—global collaborations to help create and use EOL. For example, the Species Distributions meeting series was designed to develop new mapping tools for EOL and the Global Biodiversity Information Facility (GBIF). The resulting maps will build on the ability of GBIF to incorporate data from other sources, including remote sensing and topography.

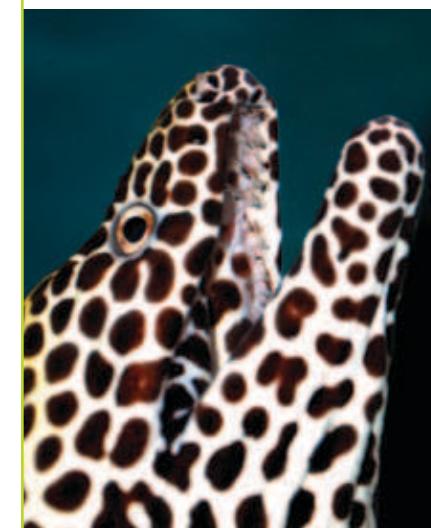
VOICES

The greater the emphasis on food webs, pollination relationships, predation behaviors, seed dispersal, mating strategies and other areas of cross-taxon study, the more important a unified clearing house for information on all living things becomes. Because the content of my work is also spread across all plants and animals, bridging ornithology, herpetology, botany, mammalogy, ichthyology, entomology and all the other -ologies, EOL is an ideal research tool for me.

ISABELLA KIRKLAND
ARTIST, TAXA SERIES



Inca tern, *Larosterna inca*
Wayne Dumbleton
(Flickr: dracobotanicus)



The synthesis meetings continued to interest participants from all over the world—the meetings included 217 participants, bringing the total number of countries engaged to 35.

Synthesis Proposals

The Synthesis Group has continued to review and fund diverse and interesting meeting proposals. Between July 2008 and March 2009, 28 proposals were received. Proposals under consideration vary widely and range from biodiversity education to the synthesis of taxonomic and biogeographic data to developing evolutionary trees and consensus species lists for diverse groups of plants and animals.

WhyReef

The Synthesis Group partnered with The Field Museum's Education Department to launch WhyReef, an innovative project using the online virtual world [whyville.net](http://reef.whyville.net). The WhyReef project (reef.whyville.net) uses mini EOL species pages with kid-friendly text to teach about the diverse species found on a reef. WhyReef uses digital games to teach about reef food webs, counting species and reading graphs, and simulating the effects of major changes on the reef. Whyville's citizens must use civic action and eco-commerce to keep the reef healthy and diverse, inspiring a life-long commitment to the natural world.



Invaluable Support

Thanks to Our Donors

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National Geographic Society

The Trio Foundation of St. Louis



The Encyclopedia of Life gratefully acknowledges the continued support of the John D. and Catherine T. MacArthur Foundation and the Alfred P. Sloan Foundation, which have generously funded the startup costs of EOL. Their vision and invaluable support have helped turn EOL from a dream into reality.

EOL also extends its special thanks to David M. Rubenstein for his gracious gift to the Smithsonian Institution in support of the EOL Fellows Program. The fellows will assemble information for EOL species pages and assist in building the robust network of scientists that is critical to providing authenticated species information to people around the world.

David M. Rubenstein

"The Encyclopedia of Life is one of the most vital and ambitious human endeavors ever undertaken. By enabling researchers from around the world to communicate and share research data, the Fellows Program

will help EOL make a lasting contribution to our fundamental understanding of life on earth. It is an effort that I am very proud and honored to support."

David M. Rubenstein

The John D. and Catherine T. MacArthur Foundation

"The Encyclopedia of Life is a dynamic resource for the future stewards of our planet. By creating an online database of the planet's many diverse species, EOL is helping preserve our natural world. It is exciting to witness the progress of this invaluable tool for scientists, conservationists, students, educators and anyone interested in studying life on Earth."

Jonathan F. Fanton, President

The John D. and Catherine T. MacArthur Foundation

The Alfred P. Sloan Foundation

"The idea of an Encyclopedia of Life now seems so natural that people cannot believe that the EOL does not already fully exist. Even with the magic of the Internet, lots of blood, sweat and tears stand between the current 160,000 well-represented species and the future when 1.8 million species will gaze out at us from www.eol.org. The work of growing EOL is gratifying, and the progress is visible week to week."

Jesse H. Ausubel, Vice President

The Alfred P. Sloan Foundation



The Alfred P. Sloan Foundation makes grants in science, technology and the quality of American life. Sloan's support for the Encyclopedia of Life melds its interests in environmental science with its interest in universal access to recorded knowledge. www.sloan.org

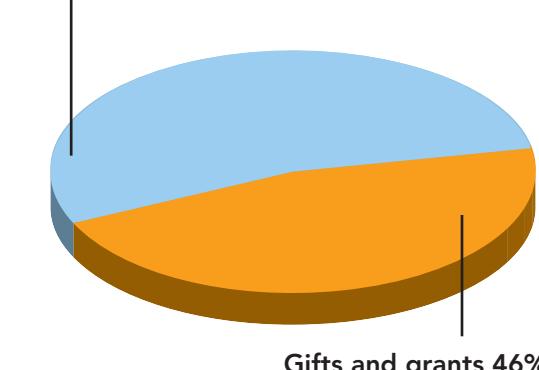
Financial Data



These charts represent Encyclopedia of Life's budget for the first two years. With funds from grants and private donors, EOL undertakes new ventures and provides the critical financial foundation for carrying out innovative research, expanding and strengthening our international partnerships, developing new projects and technologies, and reaching out to the world's diverse communities.

Sources of Funds

Initial funding 54%
MacArthur and Sloan Foundations



SOURCES OF FUNDS

Initial funding \$12,500,000

MacArthur and Sloan Foundations

Gifts and grants \$10,593,148

Total \$23,093,148



Steering Committee

The Steering Committee is composed of senior figures from the cornerstone institutions and liaisons from EOL's financial sponsors. It provides hands-on guidance and serves as the major forum for coordination of the various facets of the project. The Committee meets quarterly and is accountable for EOL's success and meeting performance metrics.

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Gary G. Borisy

Director and Chief Executive Officer
Marine Biological Laboratory
Woods Hole, MA

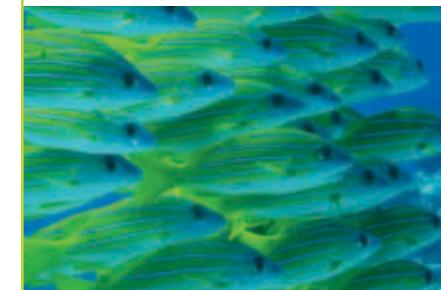
James L. Edwards

Executive Director, Encyclopedia of Life
National Museum of Natural History
Smithsonian Institution, Washington, DC

Graham Higley

Head of Library and Information Services
Natural History Museum, London, UK
Chair, Biodiversity Heritage Library

Blue dragon, *Glaucus atlanticus*
Paul Anthony Stewart
(Flickr: paulhypnos)



Distinguished Advisory Board



The Distinguished Advisory Board is made up of accomplished individuals—both inside and outside of the biodiversity community—around the world. The Board helps develop and advocate for the EOL vision and provides high-level, expert guidance.

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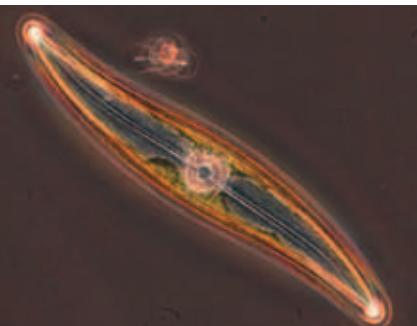
Oxford University
Oxford, United Kingdom



Institutional Council



The Institutional Council consists of representatives from institutions around the world. They meet annually and provide a global perspective for EOL.



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Catalogue of Life Partnership
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Species 2000



Girdled glossodoris
Glossodoris cincta
TANAKA Juuyoh
(Flickr: TANAKA Juuyoh)



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Global Biodiversity Information Facility
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Asian vine snake, *Ahaetulla prasina*
Matt Reinbold (Flickr: furryscaly)



American desert millipede
Orthoporus ornatus
Matt Reinbold (Flickr: furryscaly)



Content Partners



Encyclopedia of Life content partners work closely with the EOL component groups to provide authenticated species information through the EOL portal.

EOL gratefully acknowledges its original content partners:

AmphibiaWeb	International Union for Conservation of Nature
Catalogue of Life Partnership	Solanaceae Source
FishBase	Tree of Life (ToL) Web Project
Global Biodiversity Information Facility	

EOL would like to recognize its newest partners from 2008-2009:

AnAge	Illinois Wildflowers
Animal Diversity Web	micro*scope
AntWeb	MorphBank
ARKive	Mushroom Observer
AskNature	National Geographic Society
Atlas of Living Australia	Naturalis
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Cynthia Parr, Species Pages Group, Smithsonian Institution

David Patterson, Biodiversity Informatics Group, Marine Biological Laboratory

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THE ENCYCLOPEDIA OF LIFE HAS THE POWER TO EDUCATE, INSPIRE AND
BRING US TOGETHER.

Support for EOL comes from the generous contributions of individuals,
foundations and corporations.

Gifts, both large and small, will help provide EOL species information and
biodiversity literature to millions around the world.

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e-mail confirmation is provided.

To learn more about how you can support the Encyclopedia of Life, please
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Encyclopedia of Life



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