

Workshops on DNA Barcoding for Regulating Fish Species and Surveying Marine Biodiversity

DNA barcoding is an emerging global standard for identifying species using gene sequences, and it has far-reaching applications for society and the study of biodiversity on Earth. The Consortium for the Barcode of Life (CBOL; see www.barcoding.si.edu) announces two DNA barcoding workshops, to be held in conjunction with the Second International Barcode of Life Conference (see www.dnabarcodes2007.org) at Academia Sinica in Taipei, Taiwan. The workshops will be held on the days immediately before and after the International Conference (18-20 September 2007), making it possible for participants to attend all three events.

The first workshop, to be held on Monday, 17 September, will explore the use of DNA barcode data for regulatory and enforcement activities related to true fishes – a major source of protein for society. Representatives of trade regulatory bodies, fisheries management agencies, and species conservation organizations are invited to learn about a global initiative to create an identification system for all cartilaginous and bony fish species. Workshop participants will then explore the potential use of DNA barcodes for regulatory and enforcement activities.

The second workshop will be held on Friday, 18 September, and will be devoted to the use of DNA barcoding for exploring the full range of marine biodiversity. This workshop is being organized in cooperation with the Census of Marine Life (CoML), a global initiative to survey the more than 200,000 known species of marine organisms, and to document potentially millions of undiscovered species. CoML's field projects are sampling populations from different marine ecosystems around the world. DNA barcoding is becoming a standard tool for studying the samples collected by CoML and for constructing a global database of marine biodiversity.

Background. DNA barcoding began in 2003 with the proposal that organisms could be assigned to their correct species using a short gene sequence from a standardized position in the genome. By using genetic data rather than morphological features, barcoding can identify specimens that challenge the most expert taxonomist: larval forms, eggs, damaged or partial specimens (including gut contents and fecal matter), and derivative forms (e.g., fish filets). Since its introduction, barcoding has proven effective as an identification system for a wide range of taxonomic groups and for varied applications of importance to science and society. Two important examples are:

- ***Barcoding the world's fish species.*** In 2005, CBOL launched the Fish Barcode of Life campaign (FISH-BOL; www.fishbol.org) to create a global reference library of all 30,000+ species of cartilaginous and bony fishes from marine, estuarine and freshwater ecosystems. Ten Regional Working Groups have been established for the FAO regions and approximately 160 researchers are participating. All FISH-BOL data are being integrated in a single database and will be made available to the public without charge.
- ***Barcoding marine life.*** Marine species remain the least studied organisms on Earth. There are approximately 200,000 known marine species but specialists estimate that there are millions, perhaps tens of millions remaining to be discovered. The Census of Marine Life includes 14 field projects that are collecting samples from diverse marine habitats around the world. Identifying and cataloging the known species, and describing the newly discovered species, is a daunting task. DNA barcoding is a valuable tool in this endeavor.

Final workshop agendas will be posted on the conference website by 1 August 2007. Potential participants should write to ballaa@si.edu to express their interest in attending the workshops.

Workshop on DNA Barcoding for Regulating Fish Species, 17 September 2007.

The goals of the workshop are to:

- Introduce regulatory and enforcement officials to DNA barcoding;
- Review the progress that FISH-BOL is making;
- Raise awareness among FISH-BOL participants to regulatory and enforcement issues facing national and international agencies;
- Explore potential uses of barcoding for the regulation and protection of fish species; and
- Identify areas of common interest between regulatory agencies and FISH-BOL.

Workshop participants will consider the impact of DNA barcoding on:

- Assessment of fish stocks through the identification of larval fishes;
- Identification and monitoring of bycatch;
- Enforcement of catch limits;
- Regulation of international trade of ornamental fishes and endangered species; and
- Consumer protection and enforcement of food quality regulations.

Invitees to the workshop will include:

- FISH-BOL's Steering Committee and Regional Working Group Chairs;
- Representatives of major fish research centers; and
- Officials from national and international regulatory bodies and fisheries agencies.

Workshop on DNA Barcoding for Surveying Marine Biodiversity, 21 September 2007.

The goals of the workshop are to:

- Engage participants in CoML field projects and curators of museum collections of marine organisms in barcoding projects;
- Increase the use of DNA barcoding by taxonomists, marine ecologists, and marine ecosystem managers;
- Build partnerships among CoML participants, barcoding labs, and potential users of marine barcode data; and
- Identify potential marine barcoding projects and establish Steering Committees for them.

Discussion topics at the workshop will include:

- The use of barcode data for the study and management of marine ecosystems;
- Incorporating DNA barcoding into CoML field projects;
- Sampling, preserving, curating and documenting specimens for barcoding; and
- Developing PCR primers for diverse groups of marine invertebrates.

Invitees to the workshop will include:

- Leaders of and participants in CoML field projects;
- Curators and collection managers of major museum collections of marine organisms; and
- Government officials with responsibility for marine and coastal environments.

Logistics. CBOL will provide transportation between conference hotels and the meeting venues. There are no fees to attend these workshops and lunch will be provided for all workshop participants. An evening cocktail reception will be held on Monday, 17 September and participants in the Workshop on Regulating Fish Species are invited to attend.

