PD/A CRSP Central Database

The World's Largest Inventory of Standardized Aquaculture Data

The PD/A CRSP Central Database is a centralized data storage and retrieval system containing more than one million observations of pond variables from over one hundred production studies. The studies contained in the Database pertain principally to the tropical and sub-tropical production of tilapia and penaeid shrimp in ponds receiving inputs such as composts, inorganic and organic fertilizers, and prepared feeds. (Other warmwater culture species studied by the CRSP include freshwater prawns, catfish, *Piaractus*, tambaquí, carp, milkfish, guapote tigre, and snakehead.)

The Central Database stores observations of pond variables from production studies at PD/A CRSP *sites in* Honduras, Panama, Peru, Egypt, Kenya, Rwanda, Indonesia, *the* Philippines, *and* Thailand.

Internet users can query the Central Database and view the data in raw and summary forms and in graphic and tabular formats. Datasets may be searched and retrieved based on:

- geographic location,
- fish culture method and species, and
- data type (including weather, water quality, pond soil management schedules for water, fertilizers, and fish feeds, and fish production).

The Central Database also houses source information related to other available aquacultural software, databases, and tools. For example, the PD/A CRSP Central Database is linked with the Consortium for International Earth Science Information Network (CIESIN), which provides gateway software for accessing a wide range of global, climate, and environmental databases and a comprehensive listing of data sets available on the Internet.

This valuable resource for educators, students, outreach and extension agents, and aquaculturists is available free of charge.

US and International Pond Dynamics/Aquaculture CRSP Affiliates

Management Entity ~ Oregon State University

United States
- Auburn University, Alabama
- Harbor Branch Oceanographic Institute, Florida
- Michigan State University
- Ohio State University
- Oregon State University
- Southern Illinois University at Carbondale
- The University of Michigan
- University of Alabama, Birmingham
- University of Arizona
- University of Arkansas at Pine Bluff
- University of California at Davis
- University of Delaware
- University of Hawaii
- University of Georgia
- University of Nebraska
- University of Oklahoma
- University of Pittsburgh
- University of Texas at Austin
- United States Department of Agriculture

International
- University of Tabasco, Mexico
- Zamorano Panamerican Agriculture School, Honduras
- Institute for Investigation of the Peruvian Amazon, Peru
- National University of the Peruvian Amazon, Peru
- Ministry of Natural Resources, Kenya
- Asian Institute of Technology, Thailand
- Royal Thai Department of Fisheries, Thailand
- Central Luzon State University, Philippines

The PD/A CRSP is funded in part by the US Agency for International Development under Grant No. LAG-G-00-96-90015-00 and by the participating US and Host Country institutions.

POND© Software

A Valuable Tool for Analyzing Pond Management Regimes

POND© software is a decision support system that uses powerful analytical tools to rapidly assess the individual pond- or facility-level performance of aquaculture systems under different management regimes. Aquaculturists, researchers, extension agents, educators, producers, farmers, and students can use POND© to explore planning and management options along with the biological, chemical, physical, and economic issues relevant to the optimization of pond production. For example, users can conduct multiple simulations to examine the effects of management scenarios, including:

- varied stocking densities and combinations of species,
- specific stocking and harvest dates of individual populations,
- feed and fertilization schedules, and
- water balance and flow through pond facilities.

CRSP *researchers conduct* POND© *workshops ~ this one, held in* Bangkok, Thailand, *was attended by 12 participants from 10 countries*

POND© software analyzes pond systems through hierarchically organized simulation and progressively more complex models.

POND© contains an economics package for generating pond facility enterprise budgets. It also includes a parameter estimation package which can compare multiple simulation runs with user-provided fish growth data, arriving at "best-fit" parameters to customize the software to specific culture conditions, sites, and species.

Additionally, the software features highly configurable, user-friendly interfaces to:

- define new ponds and new populations associated with specific ponds,
- generate fertilization recommendations and feed schedules to more efficiently attain specified fish target weights,
- estimate lime requirements,
- conduct facility-level simulations at a given site, and
- present simulation results in graphical and tabular formats.

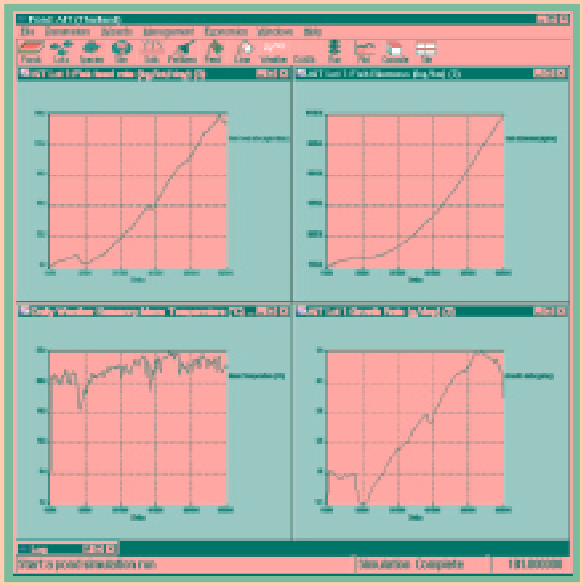
PD / A CRSP Data Tools are accessible, user-friendly resources vital to the promotion of aquacultural research and dialogue and the ongoing development of efficient pond aquaculture systems.

Pond Dynamics/Aquaculture Databases and Software

Promoting Research and Dialogue within the World Aquaculture Community

The Pond Dynamics / Aquaculture Collaborative Research Support Program is one of nine collaborative international agricultural research programs funded by the United States Agency for International Development. The PD / A CRSP successfully brings together host country and US institutions to:

- optimize the efficiency of aquaculture systems,
- minimize the negative environmental impacts of fish culture,
- explore the socioeconomic intricacies associated with fish farming,
- disseminate scientific and technical information, and
- develop economical and culturally appropriate aquaculture strategies.



The PD / A CRSP is committed to improving food supplies and human nutrition on a long-term basis through the development and enhance-ment of semi-intensive aquaculture systems. The CRSP has sponsored comprehensive, long-term research to study the physical, chemical, and biolo-gical processes of pond ecosystems in Central and South America, Africa, and Southeast Asia since 1982.

Field study results are compiled in the Central Database, the world's largest inventory of standardized aquaculture data, available on the Internet. The Central Database has in turn facilitated CRSP research leading to the development of a variety of computer models. One model uses stochastic weather inputs to generate probability distributions for pond water quality and fish yields. Another can analyze the flow of nutrients in integrated aquaculture / agriculture systems. A third is POND©, a decision support system that employs predictive models to improve pond aquaculture management.

Applications of PD/A CRSP Data Tools

In combination with Geographic Information Systems (GIS), POND© has been used to estimate fish yields over large geographic regions and assess production potential at various levels of intensity. The CRSP and the Food and Agriculture Organization of the United Nations collaborated to assess the potential for aquaculture at the regional level in South America and Africa using POND© and GIS as an integrated tool. In South America, large areas were determined suitable for the culture of Nile tilapia, tambaquí, pacu, and common carp. Roughly a quarter of continental Africa was found suitable for both the small-scale and commercial fish farming of Nile tilapia, common carp, and African catfish.

Key Contacts

PD / A CRSP Data Tools Information:
biosys.bre.orst.edu / crspDB / default.htm

John Bolte, PhD
Oregon State University ~ Gilmore Hall
Corvallis OR 97331.1641 USA
boltej@engr.orst.edu 541.737.6303

Doug Ernst, PD / A CRSP Database Manager
Oregon State University ~ Gilmore Hall
Corvallis OR 97331.1641 USA
ernstd@engr.orst.edu 541.737.3217

Program Information:
www.orst.edu / dept / crsp / homepage.html

Hillary S. Egna, PhD, PD / A CRSP Director
Oregon State University ~ Snell Hall
Corvallis OR 97331.1641 USA
egnah@ucs.orst.edu 541.737.6415