
HSWRI Aquaculture Program Research Report

**** April & May 2010 ****



The AQUACULTURE 2010 Triennial Meeting

The Triennial is the largest aquaculture conference and tradeshow in the world. Over 4000 attendees from more than 80 countries have attended this conference in the past, and AQUACULTURE 2010 was even bigger. Held March 1-5 of this year in San Diego, California, the Triennial combined the annual meetings of the National Shellfisheries Association, Fish Culture Section of the American Fisheries Society, and the World Aquaculture Society. The conference was a very exciting event for Hubbs-SeaWorld Research Institute (HSWRI). Conference attendees and visitors participated in guided tours of both the Mission Bay and Carlsbad hatchery facilities. HSWRI staff also put on a wildly successful sushi party (Figure 1) attended by hundreds of guests, including the mayor of San Diego!



Figure 1: Sushi Tuesday at HSWRI on March 2, 2010, was attended by over 350 guests

Most importantly, however, HSWRI scientists were able to present their findings in several well-received talks, with topics ranging the full breadth of aquaculture research at the Institute. Chris Peters presented research on advances in rearing of larval and juvenile California halibut (*Paralichthys californicus*). Dave Jirsa spoke about the development of practical soy-based diets and minimizing the use of fishmeal in diets for white seabass (*Atractoscion nobilis*) and California yellowtail (*Seriola lalandi*). Jeff Smiley presented his work on thermal preference and tolerance of white seabass. Kevin Stuart talked about advances in larval rearing of white seabass and yellowtail, while his research technician Kent Bollfrass talked on egg disinfection in three species of marine finfish. Dr. Kristen Gruenthal spoke about genetic determination of spawning patterns and its application to white seabass enhancement in California. Mike Paquette talked on the use of PVC foam sheet in construction of custom aquaculture equipment. Mike Shane presented research results on two topics: a quantitative assessment of California's white seabass stock enhancement program and a practical method for environmental assessment of cage farming in southern California. Even HSWRI President Don Kent was a participant, giving a talk on balancing environmental concerns and business development initiatives.

Special Sessions and Workshops at AQUACULTURE 2010

The Global Soy in Aquaculture planning meeting was held February 27 and 28 in San Diego, where HSWRI scientist Dave Jirsa presented research findings on development of soy-based diets for white seabass and California yellowtail. The studies were funded by the United Soybean Board (USB), and the purpose of the meeting was to enable researchers to discuss the development of soy inclusion in aquafeeds and plan a strategy for future research. Dave Jirsa and Mark Drawbridge also organized a nutrition workshop held at HSWRI on March 1. The workshop brought together scientists that are working collaboratively on fish nutrition projects aimed at species in southern California. The goals of the workshop were to present research findings and next steps for existing projects, as well as to discuss future nutrition research opportunities. Attending the workshop were Dr. Rick Barrows (USDA Agriculture Research Service); Dr. Ron Hardy (University of Idaho); Dr. Lus Lopez, Dr. Marcela Flores, and graduate student Jose Velazquez (Universidad Autonomá de Baja California); Dr. Juan Pablo Lazo (El Centro de Investigación Científica y de Educación Superior de Ensenada); Dr. Mike Rust (NOAA Northwest Fisheries Science Center); Kevin Stuart (HSWRI); and graduate student Daniel Wroblewski (University of San Diego). It was a very productive workshop and great to have everyone together in person!

On March 4, the Science Consortium for Ocean Replenishment (SCORE) held a workshop entitled, “Impacts of stock enhancement on genetic diversity and fitness in supplemented populations.” The workshop was organized and chaired by Dr. Eric Saillant, assistant professor in aquaculture and conservation genetics at the University of Southern Mississippi Gulf Coast Research Laboratory. Issues discussed included the effective population size in the hatchery and wild supplemented populations, monitoring genetic diversity during the execution of a supplementation program, and the fitness of both hatchery-raised and wild fish. Three well-recognized scientists – Drs. Mike Tringali, Robin Waples, and Patrick Gaffney – gave invited talks on their species of interest, Dr. Saillant updated the participants on the development of a new genetics program in Mississippi, and Dr. Kristen Gruenthal from HSWRI gave an update on the genetic management of broodstock and juvenile production for white seabass enhancement in California. The workshop was completed with a round-table type discussion of concepts and ideas for practical application of genetic research, with the scientists above representing an expert panel on genetic assessment in stock enhancement programs.

HSWRI Hosts a Fantastic Sushi Tuesday

Along with HSWRI, two other San Diego-based companies, Aquaneering, Inc., and Ewing, hosted “Sushi Tuesday” during the



Figure 1: Sliced abalone donated by The Abalone Farm.

AQUACULTURE 2010 conference. Sushi Tuesday was attended by over 350 conference delegates, including members of the commercial aquaculture industry, research, government, and academia. Most notably, San Diego Mayor Jerry Sanders joined the party, opening the event by welcoming guests to beautiful San Diego and highlighting the importance of environmentally and economically sustainable aquaculture for this region and our nation in terms of maintaining a healthy seafood supply and creating jobs throughout the seafood industry.



Figure 3: A chef from Surfside Sushi prepares a beautiful Pacific bluefin tuna from Baja Aquafarms.

The event showcased premium-quality seafood donated from fish farms in California, Northern Baja California in Mexico, and British Columbia in Canada, including: Pacific bluefin tuna from Baja Aquafarms; striped bass from Pezco/HSWRI; California yellowtail and California halibut from HSWRI; mussels from Carlsbad Aquafarms; sturgeon from Sterling Caviar; red abalone from The Abalone Farm; salmon from British Columbia; and uni (sea urchin) from Catalina Offshore Products. Chefs from a local restaurant, Surfside Sushi, made the event a special success by preparing all the sashimi, sushi, and cooked styles. SeaWorld San Diego Catering provided critical

support, as well, in helping set up the venue and running the beverage stations. Local brews were also showcased from Green Flash Brewing Company, located in northern San Diego County.

Acknowledgements

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The Aquaculture Research Program has been active for more than 25 years at HSWRI. The primary objective of this Program is to evaluate the feasibility of culturing marine organisms to replenish ocean resources through stocking, and to supply consumers with a direct source of high quality seafood through traditional aquatic farming. Please direct any questions to Dr. Kristen Gruenthal at kgruenthal@hswri.org



Aquaculture research at HSWRI is currently supported by these major contributors:

- The California Department of Fish and Game's Ocean Resources Enhancement and Hatchery Program
- Cabrillo Power/NRG
- SeaWorld San Diego
- SeaWorld Parks and Entertainment
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- Chevron Corporation
- The Catalina Seabass Fund
- The Shedd Family
- The Fletcher Foundation
- California Sea Grant
- NOAA Fisheries
- National Institute of Food and Agriculture
- United Soybean Board
- San Diego County Fish and Wildlife Advisory Commission
- NOAA's Saltonstall-Kennedy Program

Hubbs-SeaWorld Research Institute is a 501(c)(3) non-profit charity. If you would like to become a financial supporter of the Institute's aquaculture research, please contact Karen Terra at (619) 226-3870. You can also make an online donation by clicking here: [Donate Now](#)