

INSIDE STORIES:



Japanese IIFET Fisheries Meetings
Pg 1



Eel-like Fishes of Nearshore and Bay Habitats
Pg 2



New Fisheries Extension Position
Pg 4

Japanese IIFET Fisheries Meetings

Text and photos by Christopher M. Dewees

I was privileged to participate in the 12th Biennial Conference of the International Institute of Fisheries Economics and Trade (IIFET) organized by Japan International Fisheries Research Society (JIFRS) and held at the Tokyo University of Marine Science and



Typical Japanese coastal fishing vessel on Matsushima Bay in Miyagi Prefecture.

Technology (TUMSAT). The primary theme was what are responsible fisheries. A wide range of topics were covered including fisheries management, capacity reduction, community fisheries management, aquaculture, fish processing and marketing, illegal and unreported fishing, fisheries education, and bio-economic modeling. Economists, fishery managers, industry representatives, anthropologists, and fishery scientists presented at this uniquely multi-disciplinary conference.

Nearly 500 people participated with over 100 from developing nations. Donations from dozens of Japanese organizations, companies and individuals supported participation by developing nation representatives as well as students. There was a strong emphasis on Asian fisheries with many examples of community-based resource management. Dr. Tadashi Yamamoto, professor emeritus at Tokyo University and Dr. Yoshiaki Matsuda of Kagoshima University, led the organizational team with assistance from Ann Shriver, executive director of IIFET.

See the conference web site, <http://oregonstate.edu/Dept/IIFET/Japan/Japanupdate.html>, to download a list of the

papers and presenters. The conference proceedings will be available on CD for sale through the IIFET Secretariat, Department of Agriculture and Resource Economics, Oregon State University, Corvallis, OR 97331-3601; email: Ann.L.Shriver@oregonstate.edu. The proceedings will include all submitted papers, summaries of special sessions and an expanded edition of the new *Japan and Her Fisheries* book which was compiled by the Japan International Fisheries Research Society for the conference. The CD is expected by the end of this year and the cost for non-IIFET members is expected to be somewhere between \$120 and \$150.

In addition to the conference, JIFRS led a 3-day study tour of Fishery Cooperative Associations (FCAs) in Fukushima and Miyagi Prefectures north of Tokyo. With an annual *per capita* consumption of 145 pounds of seafood annually, Japan places a high priority on fisheries and aquaculture. The central, prefecture, and city governments provide much of the fisheries facilities (harbors, cold storage, processing plants) and other financial



A wide variety of seafood appears at Japanese wholesale fish markets.

support vital to the FCAs. There are approximately 1600 local FCAs in Japan. Almost all coastal fishermen belong to an FCA because the FCA is allocated local fishing rights by the prefecture government (similar to states in the USA) and only FCA members may harvest those quotas.

(Continued on page 2)

(Continued from page 1)

Fishery Cooperative Associations conduct a wide range of integrated activities. The ones we visited were involved in auctions between fishermen and dealers, aquaculture for sale and for resource enhancement, buying supplies and fuel in bulk, fishery management, marketing, processing, cold storage, and habitat enhancement (i.e., artificial reefs). Auctions appear to be a vital part of the interactions between producers/harvesters and dealers. Some FCAs also become involved with coastal planning issues that affect water quality and essential habitat.



Rearing abalone for outplanting in Fukushima Prefecture.

We observed sophisticated systems of aquaculture for flounders, abalone, *nori* (seaweed), scallops, sea urchins, and oysters. Fish processing facilities were extremely modern and clean with an emphasis on high quality. Substantial amounts of seafood are shipped live, and in wholesale markets we saw live flounder, sea bream, eels, octopus, abalone, urchins, tunicates, greenlings, rockfish, prawns, squid, lizard fish, scallops and other bivalves.

We also had an opportunity to visit the huge Tsukiji wholesale fish market in Tokyo where 20% of Japan's seafood is sold. Fresh and frozen tuna from around the world are auctioned and transported out of the market early each morning. Watching the auction and then observing seafood from around the world (50% of Japan's seafood is imported) was a unique experience. For an in-depth description of Tsukiji, see Harvard anthropologist Theodore Bestor's new book *Tsukiji: The Fish Market at the Center of the World* just published by UC Press. The book is based on his 12 years of fieldwork at the market.

Buyers inspect frozen tuna from around the world before Tsukiji market auction (right).



Carefully cutting fresh tuna for use as sashimi (left).

The next IIFET conference will take place in July 2006 in England at the University of Portsmouth. Contact Sean Pascoe at sean.pascoe@port.ac.uk for information.

Eel-like Fishes of Nearshore and Bay Habitats

Text and photos by Susan McBride

Marine Advisor, Humboldt and Mendocino Counties

Over the past two years, fishermen and Sea Grant Extension staff have trapped many unusual fishes in our collaborative research project while studying juvenile rockfishes from nearshore and bay habitats between Newport, Oregon to Morro Bay, California. Among the fishes trapped were eel-like fishes that are often misidentified as eels. Eels and eel-like fishes are evolutionarily widespread worldwide. The only true eel in North America is the American common eel found in the Atlantic. In our study region, eel-like fishes belong to same sub order, Zoarcoidea.

Eel-like fishes have elongate, flexible bodies and usually soft fin rays. Their heads are often blunt or wedge-shaped and the tails rounded or tapering. Dorsal and anal fins often run the entire length of the body. This fin arrangement results in swimming patterns where the whole body moves in lateral waves with the tail fin acting like an oar and the dorsal and anal fins functioning as rudders. The swimming behavior results in movements to avoid turbulence. These fishes squeeze into narrow crevices and often live under rocks. Swim bladders are reduced or absent as they are not necessary for these bottom dwelling fishes that spend little time in the water column. Pectoral fins are often absent or very rudimentary.

The gunnels and wolf eels are the most common eel-like fishes we have encountered in our traps. We have also trapped a few cusk eels and fringeheads, which are often misidentified as eels due to their snake-like or slithering movements when held in the hand.

(Continued on page 3)

(Continued from page 2)



Fig. 1
Project trap.

These traps (Fig. 1), 24" x 24" x 10" with 2 funnel openings, were set once a month in nearshore habitats such as kelp forests, rock reef, eelgrass, and near harbor pilings.

The gunnels, family Pholididae, are well represented in the North Pacific and we have four of the 14 species. They inhabit shallow waters from the intertidal to 120 feet. Generally the dorsal fin is twice as long as the anal fin. The most common species found in our study was the saddleback gunnel, *Pholis ornata* (Fig. 2).



Fig. 2.
Saddleback gunnel.

Saddleback gunnels reach lengths of 12 inches. They are olive green to brown above and yellowish to red below. This bottom-dwelling species lives inshore on muddy bottoms and in eelgrass or algae in depths to 120 feet. They feed on small mollusks and crustaceans. Males and females guard the egg masses.



Fig. 3.
Penpoint gunnel.

Penpoint gunnels, *Apodichthys flavidus* (Fig. 3), grow to 18 inches in length. They are found in red, green and brown color forms, usually matching their habitat. They are most commonly found in tidepools but we have trapped them in depths of 15 feet in eelgrass meadows. This species has no pelvic fin. Penpoint gunnels also guard egg masses in pairs and can breathe air when out of water! This is probably an adaptation to intertidal habitats where penpoint gunnels may find themselves in an algal patch after the tide has receded.

Other gunnels we have trapped are the crescent gunnel, *Pholis laeta*, and the kelp gunnel, *Ulvicola sanctaerosae*.



Fig. 4.
Wolf eel.

A more ferocious eel-like fish, the wolf eel (Fig. 4), *Anarrhichthys ocellatus*, can grow to almost 7 feet in length. It is of minor commercial significance in the aquarium trade, where it is primarily used for display in public aquaria. The flesh is reported to be tasty. Adults seek shelter among rocks in subtidal reefs. A wolf eel will occupy a shelter until driven out by a larger wolf eel or a large octopus. The juveniles are pelagic for up to two years. They feed on hard shelled invertebrates and fishes. Large individuals can inflict a painful bite. The teeth have been described as "doglike." Wolf eels will attack a diver if the wolf eel is guarding an egg mass.



Fig. 5
Spotted cusk eel.

The spotted cusk eels, *Chilara taylori*, are found from Baja California to Northern Oregon. They reach lengths of 14 inches. These fish burrow tail first into the sand and make mucus-lined holes. They are most active at night. Sea lions and cormorant are important predators of spotted cusk eels.



Fig. 6.
One spot fringehead.

One-spot fringeheads, *Neoclinus uninotatus*, have huge jaws and distinctive fringe-like cirri above the eyes. This species is found from Bodega Bay to northern Baja California. This fish shown above was trapped in Monterey and is usually found in nearshore bays. They often live inside old tires, bottles or cans. Most likely our trap was a possible new home for this fish. One spot fringeheads seldom leave their "homes." Females lay masses of orange colored eggs. Males and females guard the egg masses to keep predators and unwanted objects off the eggs. While guarding the eggs, these fringeheads also circulate water around the eggs.

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Sea Grant Fisheries

New Fisheries Extension Position

California Sea Grant has received funding for a third Fisheries Extension Advisor, this one covering Humboldt and Del Norte Counties. The position will focus on collaborative projects and research related to north coast fisheries issues. The full position description is at <http://ucanr.org/jobs.shtml#ncmj>. Application deadline is **October 15, 2004**.

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