



FISH AND FISHERIES

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NEW LIGHTS ON EFFECT OF CLIMATE CHANGE ON WORLD

In 2007, the report submitted by the International Panel on Climate Change (IPCC) indicated that the sea-level rises of between 20 cm and 60 cm would occur by 2100, which were derived from the estimates of how much the sea would increase in volume as it heated up, a process called thermal expansion and from projected increases in run-off water from melting glaciers in the Himalayas and other mountain ranges. In that report, the sea-level rise estimate contained very little input from melting ice sheets in Antarctica and Greenland.

Now the studies on satellite images of Antarctica and Greenland have indicated more accurate forecasts about ice-sheet melting and its contribution to sea-level rises. Based on these studies, a revision on sea-level rises would be between 1.0 and 2.0 m by 2100. Hence, the scientists have warned that the rising sea levels, triggered by global warming will pose a greater danger to the planet than previously estimated. Many coastal low-lying areas such as Bangladesh, Florida, the Maldives and the Netherlands will face catastrophic flooding, while in Britain, the Thames estuary is likely to disappear by 2100. Cities like London will need new flood defense systems. Already, the Government of the Netherlands called for the advices of experts from 20 organizations in drawing future strategies for its coastal defenses. Further, it is estimated that the sea-level rises would be 1.5 to 3.5 m by 2200, unless the world stops its warming.

But the intriguing news is that there is no symptoms of melting of Argentine glaciers!

GREAT WHITE SHARKS



The Great White shark (*Carcharodon carcharias*) is known to attain a maximum size of 5.8-6.1 m. It inhabits the shallow waters to deep oceans, i.e. 1 m to 1,280 m. It is found along the coasts of California to Alaska, the east coast of USA, most of the Gulf coast, Hawaii, coasts of South America, Mediterranean Sea, West Africa to Scandinavia, South Africa, Australia (except north coast), New Zealand, Japan, and the eastern coast of China to Russia. The fish reaches maturity by 9th year after its birth. It grows 25-30 cm per year. The female reproduces twice during her life span and 7-9 baby sharks produced per delivery.

Internationally, the great white sharks are classified as at risk of extinction. Two years ago, New Zealand added the great white shark to the protected species. The species congregate in coastal waters off North America, South Africa, Australia and New Zealand feeding on bony fish, seal penguins, other sharks and whales. It attacks humans by mistake –the silhouette of a surfer/swimmer with legs and arms dangling can resemble that of a seal. It is a rare animal and hence it is not exploited commercially. However, it is being caught as by-catch, particularly juveniles in the sport angling operations in Australia. In South Africa, the use of beach netting to keep off large sharks has resulted in the increase of small sharks and sting rays, which have depleted recreational and commercial fish stocks. The decline of great whites and other large sharks in U.S. has quoted as the cause for increased population of eagle rays, which have devoured scallop beds.

Generally, the sharks have an “extremely sensitive” lateral sensory system, by which, they can detect water movement and distinguish animal vibrations. They also possess a noise reduction system which works like noise-cancelling headphones. To know the migration of great white sharks, the scientists from New Zealand have tagged 15 numbers with satellite-linked electronic tags. One of the tagged great white shark showed the temperature variations of 3 to 26 degree centigrade on a 3,000 km journey that took from off Stewart Island of South Island of New Zealand to Great Barrier Reef of Australia. Some of the tagged great white sharks were found in New Caledonia, Vanuatu and the Louisville seamount chain in the Pacific Ocean.

REMOVAL OF INVASIVE SEAWEED FROM CORAL REEFS IN GULF OF MANNAR

Though the scientific community has divided over the report of bio-invasion of *Kappaphycus alvarezii*, an imported seaweed from the Philippines being grown in part of the Palk Bay in Mandapam, in coral areas, the Government of Tamil Nadu has directed the Gulf of Mannar Marine National Park officials to remove all the affected corals and the *Kappaphycus* seaweed in the Gulf of Mannar in the light of a research article that appeared in the scientific journal *Current Science* on May 10, 2008. According to this article, a group of scientists observed that *K. alvarezii* was found to occupy a large sub-tidal area, including coral patches indicating that this species started spreading to the Krusadai island region in Gulf of Mannar. It also stated that it is likely to spread to other islands, especially those included in the Mandapam group. Further, it is likely to destroy the branching corals, which have already reduced to a minimum life cover in the reserve, owing to bleaching in 1998. In future, it might also affect other native marine communities either directly or indirectly in the Gulf of Mannar. In the second week of March 2009, the Conservator of Forest, Virudhunagar Circle has stated that the removal of *Kappaphycus* seaweed and affected corals in Krusadai and the Shingle islands has already started.

NEW SPECIES OF DEEP SEA CORALS OFF HAWAII

The scientists of the National Oceanic Atmospheric Administration have recently discovered seven new species of yellow bamboo corals off Hawaii where the depth was more than 1000 feet. Among the seven species, six belonged to a new genus.

BEACHED WHALES RESCUED

A total of 194 pilot whales and 7 bottlenose dolphins were stranded on the evening of 1st March 2009 at Naracoopa Beach on Tasmania's King Island, Australia. By 2nd March 2009, the volunteers numbering 150 helped wildlife experts to refloat 53 surviving whales and 5 dolphins.

DEMAND FOR REVIVAL OF NATIONAL CORAL REEF RESEARCH INSTITUTE

On 1-1-2009, the Ministry of Environment and Forest has recommended revival of the National Coral Reef Research Institute (NCRRI) in the Andaman and Nicobar Islands and setting up of Regional Coral Reef Research Institutes in four different places of the country to monitor corals, based on the recommendation arrived at a three-day brain storming session of senior wildlife, forest officials and marine scientists held in Tuticorin recently. To preserve the coral reef and sustaining the development, the institute was originally set up in 2001 under the control of Zoological Survey of India. However, owing to lack of marine scientists and other administrative reasons, the

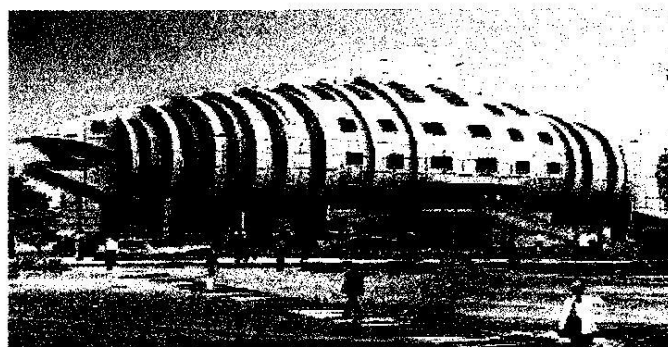
institute could not function effectively. It was felt that the institute must be revived immediately to monitor coral reefs and their development in the country. According to the available statistics, coral reef coverage in the country was 2,400 square kilo meters, of which, the Andaman Nicobar Islands shared 2,000 square kilo meters. The Gulf of Kachchh had 140 square kilo meters of corals, while around 100 square kilo meters of corals were available in the Gulf of Mannar. The senior wildlife officials from the Andaman Nicobar Islands, who attended the brainstorming session, said that coral reefs in 400 square kilo meters in the Andaman and Nicobar Islands were damaged due to tsunami in December 2004. Most of the damage was reported in the Nicobar areas, as they were totally exposed. More than 50 per cent of the remote islands in Andaman and Nicobar region had not been visited to identify damage because of shortage of officials, including marine scientists.

GREAT DEMAND FOR CULTURED MURREL FISH



The Centre for Aquaculture Research and Extension (CARE) of St. Xavier's College, Palayamkottai had organized a 3-day Hands-on Training programme on transfer of technology in murrel seed production and grow-out culture for prospective fish farmers during 16- 18th March 2009. The project got a grant of Rs.3.02 crores under the ICAR's National Agricultural Innovation Project (NAIP). Dr. Kuldeep Kumar Scientist from Central Institute of Freshwater Aquaculture (CIFA), Bhubaneshwar who inaugurated the training programme said that a maximum production of 1.8 tonnes/ha of murrels was achieved. Under NAIP grant, the 46 month-long programme, which is carried out by CARE in association with CIFA and the Post Graduate and Research Department of Zoology, New College, Chennai, will train 100 inland fish farmers every year and also assist them in marketing the harvested adult (one-year-old) murrels, weighing about 1 kg to 1.250 kg. The CARE has already developed and standardized the murrel fish feed using chicken intestine, trash fish and fish waste. As part of NAIP objective on government-private partnership, the CARE has identified a Palaymkottai-based NGO, namely, Tirunelveli Social Service Society (TSSS) for preparing fish feed on large scale through its feed mill and supply to the fish farmers. One of our Forum's member Dr. V. Sundararaj (fourth from left in the picture) who participated in the inaugural function stressed the need to encourage more fish farmers in the production of murrel fish, a much sought after delicacy noted for its medicinal value, eating qualities and flavor.

FISH-SHAPED ADMINISTRATIVE COMPLEX FOR NFDB AT HYDERABAD



Fish-shaped buildings are existing in the US and Hawaii. Such a shaped building plan has been drawn for National Fisheries Development Board, Hyderabad. The total cost of construction will be Rs.25 crores. An artist's impression of the fish-shaped complex is given above.

SPECIAL ECONOMIC ZONE FOR MARINE PRODUCT AT MACHILIPATNAM, ANDHRA PRADESH

Under a joint venture of the Govt. of Andhra Pradesh and the Marine Products Exports Development Authority (MPEDA), Kochi, it has been proposed to set up the first exclusive marine product Special Economic Zone (SEZ) at Machilipatnam on the East Coast. The project has already been approved by the National Fisheries Development Board (NFDB), Hyderabad. The zone will come up in an area of 260 acres at Kara Agraharam near Machilipatnam. A marine product SEZ for the West Coast is already functioning in Gujarat. It is expected that about 40 processing units engaged in value addition to the marine products will be established in the SEZ, which is likely to enhance the employment of coastal rural folks in Krishna, East and West Godavari districts.

EXPORT OF SHRIMPS FROM THAILAND'S ORGANIC FARMING

40 tonnes of organic shrimp were exported to Switzerland and Germany by a private farm, called Sureerath farm, located in Laem Sing district of Chanthabur Province, 220 km east of Bangkok. For the last five years, Sureerath Farm is involved in organic farming by less density stocking, not using any chemical-based feed meal or medicine in its ponds and establishment of recycling system for waste water management to avoid environmental damage. This type of sustainable practices has increased the production cost by about 30 % more when compared to the conventional shrimp farming. However, this farm is the first and only Thailand shrimp farm to receive certification from Naturland, an association of organic farmers in Germany, for meeting standards for raising shrimp and ensuring product quality. The certification paved the way for Sureerath farm to secure orders from Switzerland's Co-op retailer and Germany's Deutsche See, an organic sea food distributor.

INFISH 2009-AN INDIAN FISH FESTIVAL BY NFDB

The National Fisheries Development Board (NFDB), Hyderabad and Department of Fisheries, Govt. of Andhra Pradesh are organizing a 3-day "INFISH 2009" - An Indian Fish Festival from 11th to 13th July 2009 at Hyderabad. The festival aims at promoting and popularizing Fish as Healthy Food and development of Fisheries and Aquaculture in the Country. INFISH 2009 will have an exhibition which will be a window to showcase products and technologies, a food court and recipe competitions are also a part of the exhibition. There will also be Technical session on Fish and Shrimp Aquaculture.

FISH POSTAL STAMPS



