NEWS AND UPDATES

This section is compiled by Sudarshan Rodriguez, Coordinator of WAVES, a weekly marine and coastal news compilation. You can submit news items via e-mail and subscribe to WAVES by writing to Sudarshan Rodriguez (sudarshanr@yahoo.com). News items are taken directly from various media sources and do not necessarily reflect the views or opinions of the editorial members of the IOTN.

INDIA

Mangrove research centre planned
Ignatius Pereira

KOLLAM: The Fisheries Department has taken the initiative to start a Mangrove Eco-system Research and Demonstration Centre at Ayiramthengu, near here.

An ad hoc proposal will be submitted to the State Government soon. If the project materialises, it reportedly will become the first mangrove research centre in the country.

The 50-acre mangrove forest owned by the department at Ayiramthengu is an environmental hot spot. Many species of animals feed and breed here. The forest provides a glimpse of how the mangroves function as a habitat for many marine species, a safe haven for otters and a favourite destination of migratory birds. While the demand to conserve mangrove forests to protect the environment has been raised for years, it was after the tsunami in December 2004 that the need for mangrove-protected waterfronts as a dependable defence against the waves gathered serious momentum.

The fact that mangrove forests enhance the fish wealth also began to get recognition. Mangroves are also a traditional social link with coastal human communities dependent on the sea for their livelihood. They preserve wildlife and provide precious food for livestock. Yet no serious efforts have been made to protect them.

The Ayiramthengu mangrove forest was also threatened with extinction. In 1996, the Fisheries Department stepped in with a programme to preserve it.

The success of the programme has now prompted the department to put forth the proposal to start a mangrove research centre. The department will provide the facilities for research.

M.K. Prasad, chairman and executive director, Information Kerala Mission, and an authority on mangroves, says Ayiramthengu is an ideal location for research on mangroves and the Fisheries Department is the best agency to promote it.

Dr. Prasad says that with the mangrove forests in the State disappearing by the day, a research centre can work wonders in augmenting mangrove forests.

Source: The Hindu, Monday,8 January, 2007, available at http://www.hindu.com/2007/01/08/stories/2007010811650400.htm

Olive ridleys washed ashore
Special Correspondent

NAGAPATTINAM: More than a dozen olive ridleys (sea turtles) have been washed ashore at Nagapattinam, Vedaranyam and Point Calimere in the last two days.

Fisheries and Forest department officials believe mechanised trawlers might have killed them. Forest department officials are taking steps to remove the carcasses. The Wildlife department is investigating the cause of death.

Olive ridley, an endangered species, weighs about 50 kg. They feed on crabs, shrimp, rock lobsters, sea grasses, algae, snails and fish. Sometimes they feed on jellyfish in shallow waters.

The beaches of Orissa are nesting grounds of olive ridleys. Their population continues to dwindle in the Atlantic Ocean but is rising in the tropical regions of Pacific and Indian oceans.

Source: The Hindu, 11 January, 2007, available at http://www.hindu.com/2007/01/11/stories/2007011107170400.htm

Remove the ban on exports of marine species: Experts
Ashok B. Sharma

CHIDAMBARAM, JAN 10 : Experts have urged the government to lift the ban on export of marine species having medicinal value - seahorses and pipefishes.

Many experts have cited that these marine creatures are no longer in the category of endangered species. A good number of them have bred and cultured and kept safe in the sanctuary – Gulf of Mannar.

The breeding of seahorses and pipefishes are being undertaken in the Centre of Advanced Study in Marine Biology of the Annamalai University located in the remote village, Parangipettai.

"We bred 10,000 species of seahorses and pipefishes and handed over to the Gulf of Mannar. We have trained 40 Tsunami-affected women fisher folks in two batches in the art of breeding," said the professor in marine biology, S Rajagopal.

Two years back the government-banned exports of two species of seahorses – Hippocampus kuda and hippocampus trimaculatus and also pipefishes as they were considered 'endangered.' These marine creatures have high medicinal value and are usually exported to China.

Traditional Chinese medicines use extracts of these species to cure a number of chronic ailments.
SM Raffi of the Centre said that these marine species are priced around Rs 2,400 per kg.

"It will immensely benefit the Tsumani-affected families, if the government considers lifting the ban on exports."

When asked as to why these marine creatures cannot be of use in the country for preparing medicines, Raffi said, "In India no one has this knowledge. The knowledge of preparing medicines from these marine creatures is only in the traditional Chinese system."

Rajagopal said that the world has recognised the Centre's effort in breeding these once endangered species. India has been invited to partner in the International Project on SeaHorse Breeding, based in the Philippines.

Source: The Financial Express, 11 January, 2007, available at http://www.financialexpress.com/fe_full_story.php?content_id=151353

Aquaculture to be developed in coastal States
Our Bureau

CHENNAI , JAN. 10: The Marine Products Export Development Authority (MPEDA) is pushing for development of aquaculture in coastal States such as Gujarat, Maharashtra and Orissa through a mission mode programme, according to its, Director (Marketing), Mr Kuruvilla Thomas.

Mission mode programme

Addressing a press conference on the eve of the inauguration of Indaqua 2007, a conference and exhibition of the aquaculture industry to be held here from Thursday, he said the mission mode programme was part of an action plan for the development of aquaculture industry.

Development of coastal aquaculture and use of waste and barren lands for freshwater shrimp farming were among the components of the master plan. The mission mode programme would target bringing under aquaculture over 50,000 hectares in Gujarat over the next five years, 30,000 hectares in Maharashtra and over 10,000 hectares under freshwater prawn farming in Orissa.

Tech tie up

MPEDA will also sign an agreement with the Swiss Import Promotion Programme for

consultancy and technical collaboration on organic aquaculture in India. Exclusive sessions to promote ornamental fish culture and exports will also be conducted.

The event will showcase and promote aquaculture products and services, address technical issues in aquaculture and highlight practices like good seed cultivation and quality of output. Over 120 exhibitors including hatcheries, feed mills, input suppliers, machinery manufacturers and services providers will put up stalls.

Source: Business Line,11 January, 2007, available http://www.thehindubusinessline.com/2007/01/11/stories/2007011103731200.htm

INTERNATIONAL

Hot waters make it hard for fish to breathe

Climate change causes eelpout population to crash from suffocation.

Katharine Sanderson

The warming of the oceans is having a cruel effect on some fish: they can't breathe fast enough to survive in a hotter home.

Hans Pörtner and Rainer Knust from the Alfred Wegener Institute for Polar and Marine Research in Bremerhaven, Germany, studied the viviparous eelpout (Zoarces viviparus), a fish that lives in the northern Wadden Sea. When summer water temperatures were about 20 degrees C the fish were fine, but after a hot summer of 25 degrees C, the fish population crashed to nearly zero.

The reason, the team concluded after lab studies of the fish, is that the animals' cardiovascular systems were working at the limits of their comfort zone. As the fishes' metabolism speeds up in higher temperatures, they need more oxygen, but their hearts can't pump fast enough to provide it.

Every species has a temperature range, or 'thermal window', within which it can breathe comfortably. The eelpout of the Wadden Sea are now butting up against the upper limits of their window, says Pörtner. The fish don't like to move too far from their natural habitat, so are unlikely to swim north to cooler waters. The alternative is suffocation.

The largest of the species die off first, says Pörtner, because it takes even more energy to pump oxygen around a large animal than a smaller one.

What makes things worse is the fact that warmer waters contain less dissolved gas, including oxygen. And warm conditions may become more common in the future: these waters have warmed by 1.13 degrees C over the past 40 years.

Combined, the future looks bleak for fish struggling to catch a breath, they report in Science1.

Hotting up

Michael St John, an oceanographer at Hamburg University's Institute for Hydrobiology and Fisheries Science in Germany says that Pörtner's physiology experiments are first rate. But he suspects there are a raft of different effects causing the eelpout crashes.

Other factors to do with warming waters can spell bad news for fish, such as new predators or competing species that arrive in their habitat. But Pörtner says that the physiological process of oxygen demand is the first thing to respond to warmer seas, and is the major mechanism to blame for the decline of the eelpout.

The notion that animals have a thermal window within which they are comfortable is not new. But the eelpout study is unique in showing how climate change can cause a species to cross the upper limits of their window and crash.

Tobias Wang, a zoophysiologist at Aarhus University, Denmark, is impressed that Pörtner has linked observations of populations declining with this physiological explanation. Both he and Pörtner suspect that this mechanism will cause many other species to crash too.

The eelpout will need to shift their thermal window if they are to survive the higher temperatures of their habitat. But there is no sign of that happening,

says Pörtner. "They may be able to adapt over long times but the current speed of global warming won't allow that."

References

Pörtner O., Knust R., et al. Science, 315. 95 - 97 (2007).

Source: Nature News available at http://www.nature.com/news/2007/070101/full/070101-5.html

Sea Snakes Conquered by Salt

By Elizabeth Pennisi

ScienceNOW Daily News, 5 January 2007

PHOENIX, ARIZONA--Shipwrecked sailors shouldn't drink ocean water no matter how thirsty they get. And neither should sea snakes. Contrary to the current dogma, at least some of these serpentine mariners must have freshwater to survive. Research shows that without it, at least one group of sea snakes--and likely others--will gradually waste away, researchers reported here yesterday at the annual meeting of the Society for Integrative and Comparative Biology. The need for access to fresh water may limit where these snakes can live, explaining their patchy distribution along certain coastlines.

All organisms must work to keep dehydration in check. Kidneys concentrate urine to conserve water, and many marine animals have special adaptations for getting rid of the excess salt taken in from the surrounding environment. Sea snakes--dozens of species of which live in the open ocean, while a few others hang out inshore--have a gland under their tongues for this purpose. Researchers have long assumed that this gland worked so well that the snakes could get away with sipping salt water whenever they needed a drink.

But Harvey Lillywhite, an ecological physiologist at the University of Florida in Gainesville, began to suspect otherwise when he had trouble keeping file snakes, which live almost fulltime in the ocean, alive in his lab. He discovered the snakes did fine once he put them in fresh water and began to wonder if the same was true of other marine snakes.

With the help of Ming Tu from the National Taiwan Normal University in Taipei, Lillywhite and his colleagues collected three species of sea kraits, snakes that live in the coastal waters of islands off Taiwan but, at the very least, come ashore to lay their eggs, usually in rocky caves close to the intertidal zone. Two of the species also visit land occasionally. All have the brine-secreting gland, suggesting they are well adapted to constant immersion in salt water.

For their experiments, the researchers first took the snakes out of water long enough to allow them to dehydrate. They then put the snakes in different concentrations of seawater. None of the dehydrated snakes tried to drink anything that was 50% or more salt water (They live in full-strength seawater.) But they did gulp down water fresh water and imbibed 25% saltwater concentrations, Lillywhite reported.

In a second study, Lillywhite's team tracked the weight of the snakes for 10 days. For the experiment, they kept the snakes in the seawater without food. The researchers placed half of the snakes in fresh water every other day for an hour. All the snakes experienced dehydration and lost weight, but the ones exposed to fresh water lost significantly less, says Lillywhite.

The results help explain the demographics of these Taiwanese snakes, Lillywhite says. They tend to be most plentiful along the shore, where there are springs or other sources of fresh water nearby. Furthermore, there are more sea snake species in areas with higher mean annual rainfalls, notes Lillywhite. Under calm conditions, thin layers of rain will float on top of the salt water, apparently providing ample supplies for the snakes.

It's a "major finding," says Harold Heatwole, an ecologist at North Carolina State University in Raleigh. Physiologist Lisa Hazard from Montclair State University in Upper Montclair, New Jersey, agrees. "He shows pretty clearly that [sea snakes] have to have access to fresh water," she says.

Source : Science Now News, available at http://sciencenow.sciencemag.org/cgi/content/full/2007/105/1

ProFauna's Annual Reflection on Turtle Trade in Indonesia

A new modus in smuggling turtles

The year 2006 was "the Year of Turtles" proclaimed by IOSEA (Indian Ocean and South East Asia) Secretariat and signed in agreement by the Indonesian government. Indonesia with its shoreline and vast seas possess 6 out of 7 of the world's turtle species. All turtle and parts of turtles are protected under statutory law in Indonesia. According to Act. No. 5/1990 on Biodiversity and Ecosystem Conservation, conduct of protected wildlife trade, including turtles, are subject to a maximum sentence of 5 years in prison and a fine up to Rp. 100 million.

Although regulated by law, turtle and parts of turtle trade is still frequently taking place in many places around the country. Turtles are traded in the form of meat, eggs, shell, and souvenirs made from parts of the turtle's body.

Since 1999, ProFauna Indonesia has worked on a campaign for turtle protection and a campaign against all manifestations of turtle trade. The following are ProFauna's records on turtle trade in Indonesia during the year 2006.

Turtle smuggling into Bali

In 1999, ProFauna proved that Bali is a center for turtle meat trade. At that time, 27,000 turtles were slaughtered every year to get the meat. Following ProFauna's campaign to halt turtle trade in Bali in 2001, the police conducted mass-scale confiscation to stop turtle trade in Bali. The operation resulted in four turtle traders brought to court and sentenced to prison for a period of 6 months up to 1 year. Since then, turtle trade in Bali has decreased to 80%.

Although turtle meat trade in Bali has significantly been reduced, it does not mean that turtle trade has stopped altogether. Smuggling of turtles into Bali is a frequently sighted activity. Today, ProFauna estimates that there are around 1000–2000 green turtles (*Chelonia mydas*) being smuggled every year to Bali. This is proven by the fact that in the last 3 years (2004–06) there were 12 cases in which ship vessels carrying turtles into the island had been seized.

In the year of 2006, the local Bali marine police managed to capture 2 vessels carrying turtles to Bali and 1 vessel was caught by the West Nusa Tenggara police. The seized vessels had been found to be carrying 7–200 green turtles each. This is evidence that smuggling of turtles is still happening in Bali until today.

Those turtles are of Banyuwangi, Madura and Sulawesi dan Flores seas origin. The relatively high demand for turtle meat in Bali has caused smugglers to take chances in breaking into the island despite strict law enforcement by the police. If previously the turtle traders smuggled live turtles, now they are more keen on smuggling turtle meat. Along the journey, those turtles are slaughtered in the middle of the sea, chopped into small pieces to disguise their cargo, and later make it hard for the officers to inspect and identify.

To meet the needs for turtle meat in Bali, people often come to the seas in Merubetiri and Alas Purwo National Parks in East Java to obtain catch. Turtles are caught one by one through diving, no longer using nets as were used in previous years.

Turtle trade in the southern Java beaches

According to ProFauna records, roughly 1000 turtles are slaughtered each year to create stuffed turtles and sold along the shores of the Southern Java beaches. In addition, 60 turtles are accidentally caught in random fishermen's nets every year. Those accidentally caught turtles are then slaughtered and consumed for their meat.

Turtle trade in the shores of the Southern Java Beaches occurs particularly at the following locations: Teluk Penyu Beach, Cilacap, Central Java; Puger Banyuwangi Beach; Pangandaran Beach, West Java; Pelabuhan Ratu Beach, West Java; and Pangumbahan Beach, Sukabumi, West Java.

Current progress to curb turtle trade can be seen through the fact that the number of turtle material-

derived merchandise have decreased to as low as 90% following ProFauna's publication of the organisation's investigation report on turtle trade in Cilacap in 2005. Now 'turtle stock' that had once been in Cilacap has been moved to Pangandaran Beach in West Java.

The trade of turtles and its parts in the Southern Java beaches is now hard to find due to the impacts of the tsunami several months ago that hit the shores of Southern Java quite hard.

Trade of merchandise sourced from hawksbill turtle shells

Positive developments have taken place in Kota Gede, Yogyakarta. Kota Gede, once renowned as the centre for souvenirs made from Hawksbill turtle shells (*Eretmochelys imbricata*), by the end of 2006 has managed to decrease the trade by 90%. After receiving reports from ProFauna, officials from the Conservancy of Natural Resource Council (BKSDA Yogyakarta) carried out awareness and law enforcement efforts at Kota Gede. This resulted in a rapid decline in sales of merchandise of hawksbill turtle shells, and the area is proclaimed to be nearly free of illegal products.

It is a shame that the positive results achieved in Kota Gede were not followed by the same developments of hawksbill turtle souvenir trade in Malioboro Road, Yogyakarta. Although the number has declined, trade of souvenirs made from Hawksbill turtle shells still takes place in several outlets along Malioboro Road. At the end of 2006, ProFauna recorded that there were 500 souvenirs made from Hawksbill turtle shells.

Turtle egg trade in Sukabumi, west Java

Although turtle egg trade is regulated and protected nationally, it is still legalised by a few regional governments, such as what is happening in Pangumbahan Beach, Sukabumi, West Java. Previously in 2001, the Sukabumi local government released Regional Law (Perda) No.. 2/2001 regulating turtle egg trade conducted by private businesses.

Luckily, the law was cancelled by Domestic Affairs Minister the following year through Domestic Affairs Minister Decree No. 9/2005 on Cancellation of Perda No. 2 year 2001. Agreement on the legislation of the decree was achieved due to the hardwork done by the Animal Advocacy Institute (LASA) supported by ProFauna Indonesia.

At the moment, Sukabumi police is handling a law case regarding turtle egg trade. Although proceeding very slowly, ProFauna is hoping that this case will be handed over to court and more law will be enforced strictly in the hope that turtle egg trade will not occur again in Sukabumi.

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