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24th meeting of Regional Committee II at Bhubaneswar

Hon'ble Union Minister of Agri. & FW inaugurating the projects in Bihar wetlands

Ganesh Shankar Vidyarthi Puraskar to Nilanjali

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Director's Column

The six months under report was much eventful and productive. We successfully organized the 24th meeting of the ICAR Regional Committee II comprising members from the states of West Bengal, Odisha, Andhra Pradesh, Telangana and UT of Andaman and Nicobar Islands, at Bhubaneswar on 22-23 June 2018. The institute staff deserve accolades for successfully organizing such a high profile meeting. It is a matter of pride that the institute Hindi magazine 'Nilanjali' bagged the first prize under Ganesh Shankar Vidyarthi Purashkar of ICAR. This is the second time in seven years that same house magazine received the award. Our SFAO, Shri N.V.R.N. Murti also received the award under the ICAR Cash Award Scheme 2017 under administrative category. I congratulate all the staff and hope that more such successes will be coming to us.

A couple of MoUs have been signed with various organizations for conducting collaborative research and development works. Interesting studies have been conducted on fishing gears, fish biology, fish migration, ecology and fisheries of reservoirs, rivers, post flood assessment of riverine fisheries of Kerala etc during this period. Hon'ble Union Minister of Agri. and Farmers' Welfare inaugurated four NFDB funded projects in wetlands of Bihar. A couple of ranching programmes have been organized towards restoration of depleting IMC stock in the River Ganga. We successfully organized a couple of workshops like inception workshop under NMHS project, 1st Barrackpore proteomics workshop, workshop on biosensor technology in inland fisheries, to name a few. We have celebrated International Day of Yoga, Independence Day, World Biodiversity Day, World Environment Day, National Fish Farmers' Day with great fanfare and enthusiasm. We carried out the *Swachh Bharat Abhiyaan* and *Mera Gaon Mera Gaurav* activities religiously.

I welcome the newly joined staff and wish them all the best, I also congratulate the staff those who got promotion. Any suggestions from the learned readers to improve the quality of the Newsletter is welcome.

November, 2018

Dr. B. K. Das
Director

About ICAR-CIFRI

Started as Central Inland Fisheries Research Station in March, 1947 at Barrackpore, West Bengal, the ICAR-CIFRI has carved a niche in inland fisheries research. Induced fish breeding, composite fish culture and other scientific fish production practices developed during the sixties by the institute helped in bringing the blue revolution in the country. Reservoirs and wetland fisheries management technologies developed and disseminated by the institute resulted in enhanced fish production from these resources. By the turn of the year 2000, the research and development agenda of the institute concerning inland open waters shifted from fish as the only benefit to ecosystem health and ecological benefits with emphasis on sustainability, livelihood and nutritional security. In addition to the Headquarters at Barrackpore and two Research Stations at Kolkata and Kochi, the institute has four Regional Research Centres at Allahabad, Guwahati, Bengaluru and Vadodara, through which the region specific issues of inland open water fisheries are being addressed.

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24th ICAR Regional Committee II Meeting

Secretary DARE & DG, ICAR, Dr. Trilochan Mahapatra delivering inaugural speech

The ICAR Regional Committees provide a forum for the stakeholders to examine in depth the major gaps in current research and training efforts, to identify priorities and to decide agenda of research and extension in agriculture, animal husbandry and fisheries for a region for the coming year. The 24th meeting of the Regional Committee II comprising members from the states of West Bengal, Odisha, Andhra Pradesh, Telangana and UT of Andaman and Nicobar Islands, held at Institute on Management of Agricultural Extension (IMAGE), Bhubaneswar on 22- 23 June 2018. Dr. Trilochan Mohapatra, Secretary, DARE and Director General, ICAR, New Delhi, presided over the inaugural session and chaired the two-day long technical sessions. In his address he remarked that the region offers tremendous scope and opportunities for multifaceted growth of agriculture sector, including animal husbandry, fisheries, horticulture, sericulture and others. He called for concerted efforts of ICAR, SAUs and state governments to ensure that doubling of farmers' income becomes a reality by 2022. Dr. J. K. Jena, DDG (Fisheries Science & Animal Science) and Nodal Officer of this region, performed a lead role in successfully organizing this meeting.

Senior officers from ICAR hqrs. New Delhi, including Shri Chhabilendra Roul, IAS, Special Secretary (DARE) & Secretary (ICAR); Shri Bimbardhar Pradhan, Additional Secretary & Financial Advisor (DARE/ICAR); Directors of ICAR Research Institutes, Vice Chancellors of the State Agricultural Universities, Senior Officials of the State Departments of Agriculture, Animal Husbandry, Dairy and Fisheries, participated in the meeting. A total of 39 fresh action points with time frame were formulated.

Secretary, DARE and DG, ICAR chairing the technical sessions

A section of the delegates

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Research Highlights

Baur fishing: A traditional fishing method in the upper stretch of the River Ganga

The *"Baur"* which is also locally called as *Phans/Fandi* is prevalent in the hill streams of the Uttarakhand. A number of loops of fine nylon thread are tied with a knot at a regular interval of 15-20 cm in the main nylon rope. The length of fine nylon thread varies from 30-60 cm with a loop diameter of 3-10cm. The number of loops vary from 60-150. To tighten the fishes, loops are made in such a way that the knot of the loops can easily slip to reduce the diameter of the loop. Stones are tied at an interval of 1-2 meters in the main nylon rope, which act as sinkers. By the activities of the fins of the fishes, the loops start narrowing and fishes are entangled/trapped in the loops. In such a fishing operation, catch usually varies from 3-5 kg. The size of the fishes caught by this method range from 0.5-3.0 kg and is used for catching of *Tor* spp., *Schizothorax* spp., *Crossocheilus* spp., *Labeo calbasu, Garra* spp. etc.

Sketch of Baur fishing

Baur fishing in operation

S. C. S. Das, A. Alam, D. N. Jha, J. Kumar, V. R. Thakur, V. Kumar, K. Srivastava, S. K. Srivastava, U. Singh, H. O. Verma, S. K. Mishra, S. K. Verma, A. R. Pandey and R. S. Shrivastava

Himalayan river fishes tagged for the first time to monitor migratory path

The institute undertook a scientific investigation on fish migration to identify the migratory path and breeding zones of Chocolate Mahseer, *Neolissochilus hexagonolepis* (IUCN: Near Threatend) and *Schizothorax richardsonii* (IUCN: Vulnerable), two important Himalayan migratory fish species of conservational significance in the river Teesta. This type of experiment was conducted for the first time. A mass awareness programme was also conducted on the illegal fishing and importance of fish conservation and habitat protection for fishes of river Teesta. Further, more than 100 fishes with a size range 175 mm to 580 mm weighing 69 g to 1350 g were tagged with Floy T- bar anchor tags of standard size with serial numbers printed.

Awareness programme on conservation of fisheries

Tagged fish

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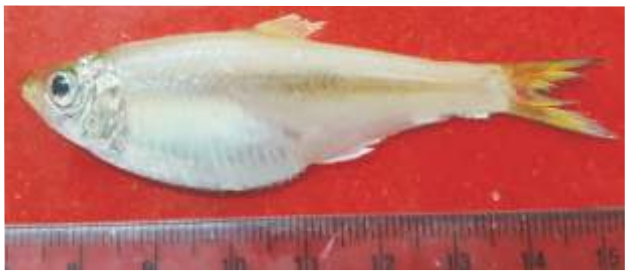
The recovery of these tagged fishes is under progress, which will indicate the geographical location of the migratory path and preferably breeding zones of these fishes, so that suitable conservational measures could be developed for these fishes. The investigation was carried out by ICAR-CIFRI with the support from National Hydroelectric Power Corporation Ltd., New Delhi.

B. K. Das, A. K. Sahoo, D. K. Meena, H. S. Swain, R. K. Raman and T. N. Chanu

The largest ever Ganges river sprat (*Corica soborna* Hamilton, 1822) recorded from the lower stretches of the River Ganga

A giant Ganges river sprat fish species *Corica soborna* Hamilton, 1822 was recorded during 2018 summer in the lower stretches of the River Ganga. The species belongs to Order Clupeiformes and Family Clupeidae and it is reported to occur in Asian countries *viz*. India, Bangladesh, Thailand, Malaysia, Brunei and Indonesia. According to IUCN list, the status of the species is least concern (LC). The species is omnivorous in nature and feed on small invertebrates, zooplankton and other plankton. They are commonly known as '*Ghiya*' along the lower stretches of the Ganga River. The maximum size recorded so far from around the globe is 5.3 cm TL and from India is 4.0 cm SL. The present specimen caught by a drag net in River Ganga landed at Allahabad (Latitude $25^0 30' 14''$ N, Longitude $81^0 51' 30''$ E) in Uttar Pradesh on 16th April 2018. The fish measured 8.5 cm in total length (standard length SL is 6.9 cm and fork length FL 7.6 cm) and weighed 4.25 g in wet condition. It is the longest ever recorded specimen for this fish species in the world. Some of the important hydro-ecological parameters of the habitat, *viz*. temperature, pH, transparency, dissolved oxygen, specific conductivity, dissolved solids, and total hardness were 30.30^0C, 9.92, 36 cm, 8.38 ppm, 484 µS/cm, 313 ppm and 152 ppm, respectively.



Corica soborna Hamilton, 1822

A. Alam, S. C. S. Das, J. Kumar, V. R. Thakur, D. N. Jha, S. K. Verma, H. O. Verma, S. K. Mishra, R. S. Srivastava and B. K. Das

Pelni fishing: a mainstay prawn fishing activity among the tribals in middle stretch of River Tapti

Prawn fishery along Tapti river is subsistence in nature and mainly practiced during monsoon season. *Pelni* is a type of push net designed in triangular shape with a rigid frame made of bamboo that is pushed along the bottom in shallow waters and is used for collecting prawns and small bottom-dwelling fishes. *Pelni* fishing is the only fishing activity adopted by the tribal population inhabiting along the north and south banks of river Tapti in Madhya Pradesh and northern Maharashtra. The study of the ICAR-CIFRI along the middle stretch of river at *Changdev* in Maharashtra revealed that fishers catch ranged from 4 to 10 kg/day/fisher. The migratory fishermen camped in the Tapti-Purna confluence in groups each consisting of 2-3 fishers during late February to early June. The catch composed mainly of small sized prawns, *Macrobrachium lamarei lamarei, M. tiwarii* and *M. kistnense* along with small quantities of other smaller fin fishes and more than 90% of the catch is marketed dried in the nearby markets. There is possibility of destruction of non-targeted species as the mesh size of the nets are very small and it agitates the bottom sediment.

Pelni (Push net)

Catch of prawn in *Pelni*

T. Nirupada Chanu, V. R. Suresh, S. K. Koushlesh, Pranab Gogoi, Raju Baitha, S. K. Das, W. Anand Meetei and J. K. Solanki

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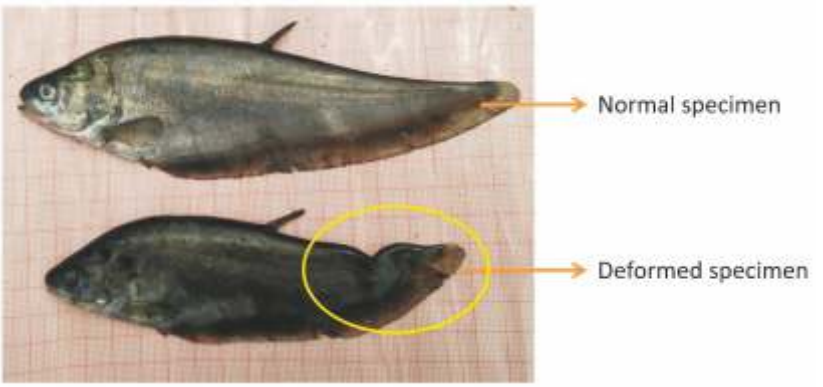
Deformity and parasitic infection of *Notopterus notopterus* (Pallas 1769) in River Cauvery at Kudige, Karnataka

A deformed specimen of *Notopterus notopterus* (Pallas 1769) was recorded from Cauvery river at Kudige (Kodagu district in Karnataka) during the pre-monsoon surveys. The specimen weighed 30 g with total length of 147 mm. The deformity was observed at the caudal peduncle region. Deformity in specimens are not usually seen in the species in the natural river stretches hence the reason for such occurrence is currently unknown. Continued observations are necessary to see the magnitude of the deformity. Presence of a trematode parasite was also recorded on *N. notopterus* at Kudige stretch of the river.



Normal and deformed specimen of *N. notopterus*

Trematode parasite infection on *N. notopterus*

Sibina Mol S., N. Rajendra Naik, M. E. Vijaykumar, A. Sengupta, R. K. Manna, Roshith C. M., Sharma S. K., Raju Baitha, V. R. Suresh and B. K. Das

Ring type crab lift net for mud crab harvesting in Chaliyar River, Kerala

One of the crab gears operated to target all size of mud crabs from the river Chaliyar is the 'Ring type crab lift net'. This gear is operated in the river mouth, particularly at Feroke area, where the river meets the Arabian Sea. The gear locally known as 'ring' is generally round in shape and is operated throughout the year particularly during low tide time at night. The round ring of the gear is made up of iron and the bottom part of the gear is covered by HDPE netting (1.5 cm mesh size). Four synthetic ropes of 0.5 mm diameter and 50-75 cm length are fastened on the ring in equal distance. The ropes are knotted at a single point keeping a distance of about 1.5-2.0 m from the center of the net and a single rope of same diameter is attached at this point. A float made up of broken thermocole

Crab caught in ring type crab lift net

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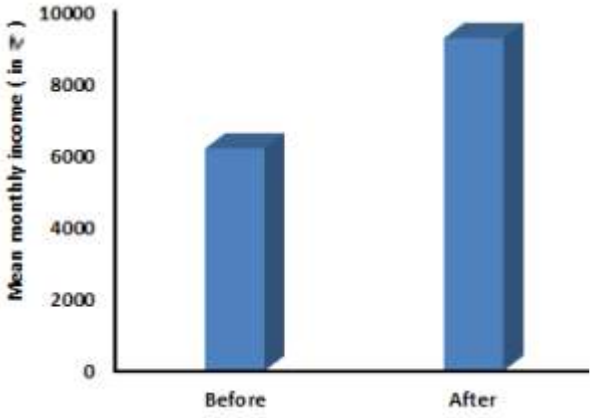
or plastic bottles are attached to the other end of this single rope. Trash fish or poultry meat are commonly used as baits which attract crabs into the net and get entangled. *Scylla serrata* or commonly known as mud crab is mainly caught by this gear. One of the main advantages of this gear is that it can be easily prepared, cost effective and easy to operate. On an average 2-3 crabs with weight around 200-300 g are caught. However, juvenile catch is a concern, hence, a better crab gear may be devised at the earliest.

Ajoy Saha, T. T. Paul, Deepa Sudheeshan, Shravan Kumar Sharma, S. Manoharan, V. R. Suresh and B. K. Das

Success story of pen aquaculture enhancing fishers' livelihood in Loktak lake, Manipur

Loktak lake, with a water-spread area of approx. 26,000 ha, is the largest openwater fishery resource of the state amenable to captured fisheries and fisheries enhancement. The Guwahati Regional Centre of the institute carried out pen (enclosure) aquaculture in Takmu pat (a part of Loktak lake covering 500 ha) during 2012-13 using net pens supported by bamboo poles which was proved to be a viable fishery enhancement option. Subsequently in 2015-16, four pen aquaculture demonstrations were conducted under NEH Component of ICAR-CIFRI in collaboration with Department of Fisheries (DoF), Govt. of Manipur. After these successful demonstrations, the DoF, Govt. of Manipur conducted a few more pen aquaculture demonstrations in the pat. Encouraged by the results, 50 fishers from the vicinity of the lake took lease of 0.5 ha water area each from DoF, Manipur for an annual lease value of Rs. 5,000 per year for undertaking pen aquaculture in the lake. A study by the institute revealed that pen aquaculture was carried out in the pats for table fish production and mainly stocked with advanced fingerlings of grass carp (60-70%) and IMCs (30-40%) @ 0.5-0.7 no./m^2. No supplementary feeding was practiced in the pens and harvesting was done after one year. Fish production from the pen was in the range of 3000-4000 kg/ha. The fishers devoted an additional 3-4 hours a day for its operation/ maintenance apart from 2-3 hours of fishing in the open wetland. Wilcoxcon signed-rank test showed that the mean monthly household income after adoption of the technology (₹ 9,250 per month) was significantly higher than that of before adoption (₹ 6,183 per month); $Z = -3.31$, $p<0.001$. Adoption of the technology resulted in 49.6% increase in mean monthly income of the fishers. The benefit-cost ratio of pen aquaculture in pat ranged from 1.54 to 1.87 indicating that the technology is economically viable.

Series of pen installed in Loktak lake by fishers as observed during 4-8 September, 2017.



Mean household monthly income (in ₹) of fishers before and after pen adoption

A. K. Yadav, B. K. Bhattacharjya, S. Borah, Arun Pandit and B. K. Das

Fish diversity conservation status in Harangi reservoir, Karnataka

The Harangi is the first reservoir across the Cauvery river system which is located in Kodagu district, Karnataka (12°29'30" N 75°54'20" S). Seasonal fish assemblage study conducted in 2017-18 revealed a total of 37 species belonging to 10 families and 6 orders. Shannon diversity of index measures indicated high diversity in post-monsoon season (1.887) followed by pre-monsoon (1.531) and monsoon (1.487). Diversity was more in lotic zone compared to lentic zone and intermediate with Shannon diversity of index values as 1.745, 1.646 and 1.576, respectively. *Tor khudree* which is an endangered species has enormous significance as a sport fish. More than 50% of fishes reported from this reservoir belonged to threatened category. It may be due to increasing environmental stresses owing to a combination of factors like reservoir formation, heavy exploitation and wanton destruction of

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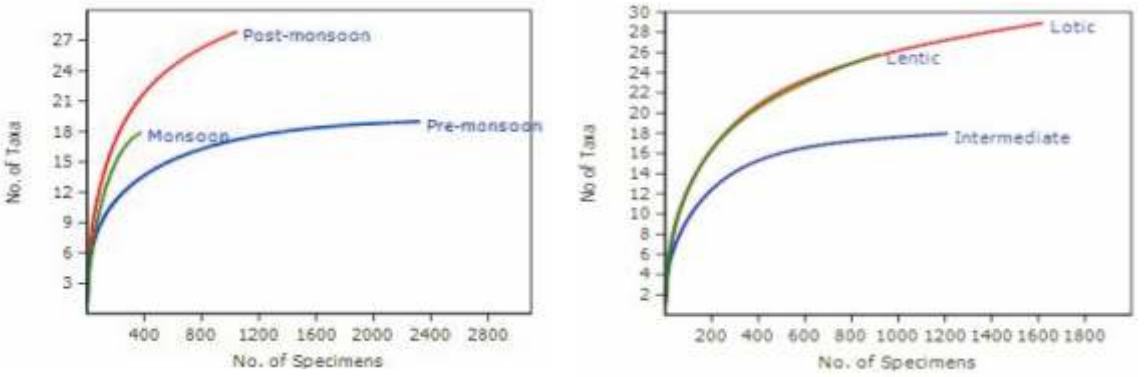

Individual rarefaction curve between species abundance and taxa based on season (left side) and zone (right side)

the habitat. As conservation measures fishing ban is followed during June and July. An onsite hatchery is being established by the state fisheries department for ranching programme for conservation of mahseer. Proper conservation strategies also need to be devised for other species like *Hemibagrus punctatus* (critically endangered), *Salmophasia belachi* (vulnerable), *Ompok pabo*, *O. bimaculatus* and *Wallago attu* (near threatened).

Ramya. V. L., Jesna. P.K., Ajoy Saha., Preetha Panikkar., Sibina Mol. S., Karthikeyan. M. and U.K. Sarkar

Pen aquaculture of small indigenous fishes along with Indian major carps as climatic resilient technology

Pen aquaculture of small indigenous fishes along with Indian major carps (IMCs) was demonstrated in 47-Morakolong beel, Morigaon district, Assam. Five pens of 10 m x 10 m were constructed in the beel margin with low-cost locally available split bamboo screens, nets and LDPE ropes. IMCs, rohu, catla and mrigal along with small indigenous fish species such as *Amblypharyngodon mola*, *Gudusia chapra* and *Puntius* spp. were stocked during January, 2018. All the pens were stocked with IMCs @ 3 no./ m^2 and one SIF in one pen from *A. mola* (@ 30 no./ m^2), *G. chapra* (@ 20 no./ m^2) or *Puntius* spp. (@ 20 no./ m^2) and the 5th pen was stocked with all three SIFs @ 1/3rd of the original stocking density of each species. The stocked fishes were fed with formulated pelleted feed (28.5% CP) using feeding trays at the rate of 5% body weight twice daily. During the winter months, disease condition (such as ulcers) and mortality was observed in IMCs, however, the SIFs were healthy and no mortality was observed indicating the climate resilient nature of the species.

Pen culture demonstration in 47-Morakolong beel, Morigaon district, Assam

After four months of rearing, mrigal showed the maximum growth (weight gain percent: 598.3%), followed by rohu (408.8%) and catla (130.3%) indicating suitability of bottom dwellers during low-water level months (winter and pre-monsoon). Natural spawning of the three economically important SIFs was observed in the pens during the period. This is a significant finding indicating that these SIFs are climate-resilient. No significant difference was observed in salient water quality variables inside and outside the pens. This indicates that the present moderate stocking densities did not lead to crowding related water quality deterioration in the pens. It can be suggested that pen aquaculture using SIFs along with IMCs will lead to additional income of the wetland fishers.

B. K. Bhattacharjya, D. Debnath, S.Yengkokpam and U. K. Sarkar

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Ecological assessment of a small tropical reservoir of Odisha for fisheries enhancement

Fertility status of any aquatic system is reflected through abundance of primary and secondary producers. Derjang is a small reservoir (530 ha), in Angul District of Odisha (20°50'32.0"N, 85°01'14.8"E). It supports livelihood of 150 fisher families. It receives nutrient load through surface and agricultural runoff from catchment. Lingara and Matalia canals drive water to this reservoir. Sampling during monsoon and post monsoon seasons, encompassing a total of 16 physico-chemical parameters, *viz.* depth, temperature, transparency, pH, DO, specific conductivity, Free CO_2, TDS, total alkalinity, total hardness, Ca++, Mg++, Chloride, Nitrate-N, Phosphate-P and Silicate-Si were analysed and found that most of the water quality parameters have significant differences ($p<0.05$) between monsoon and post monsoon periods. Decrease in water depth and temperature and increase in nutrients (nitrate-N, phosphate-P, silica), DO etc. are the important factors for abundance of plankton for fisheries. Total 63 species of phytoplankton and 26 species of zooplankton were identified during both the seasons from this reservoir.

A view of Derjang reservoir

A haul of fish catch of Derjang reservoir

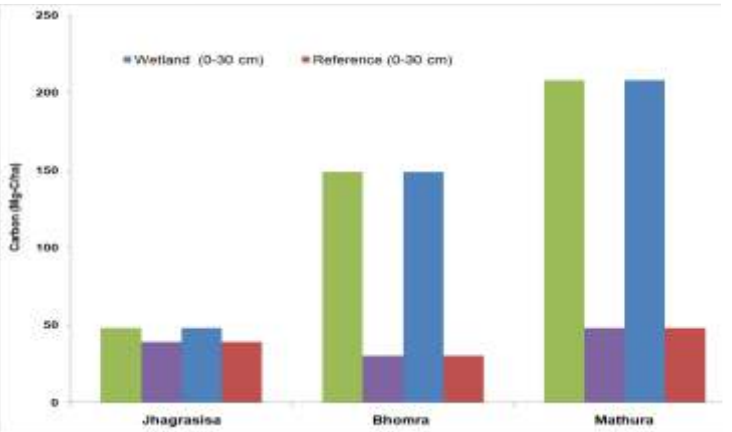
Phytoplankton abundance was recorded highest in post monsoon (78,566 cells/L). Cyanophyceae dominated in both the seasons. Zooplankton abundance also showed a similar pattern. Copepod was dominant in monsoon season and rotifer in post monsoon season. Fish seed stocking is practiced twice in a year in the resrvoir (i.e. Sept-Oct and March-April) with IMC and prawn (*Macrobrachium malcolmsonii*). During study period, 28 fish species were recorded from the reservoir. Productivity was estimated at 200 kg/ha/yr. Fish catch per day during monsoon and post monsoon was estimated at 342 kg and 910 kg, respectively. The major carp catch contribution increased significantly in post monsoon contrary to SIFs and prawn catch which were low during this season. The CPUE was comparatively higher during post monsoon. Species richness was higher in monsoon but diversity and dominance indices were almost similar.

Lianthuamluaia, Pritijyoti Majhi, A. K. Bera, Tasso Tayung, U. K. Sarkar, Mishal P, S. Kumari, G. Karnatak, B. Naskar and Y. Ali

Assessment of carbon sequestration potential of selected wetlands of West Bengal

Wetlands are considered as important carbon (C) sinks in spite of emission of green house gases, particularly methane, to the atmosphere. Carbon sequestration studies were conducted in three wetlands namely, Bhomra beel in Nadia district, Mathura beel in North 24 Paraganas district and sewage-fed east Kolkata wetland (Jhagrasisa) under NICRA project.

Assessment of algal biomass indicated that the phytoplankton population was much more in Jhagrasisa than in Bhomra and Mathura beels. Aquatic macrophytes in wetlands also play a vital role in C accumulation as during degradation of the dead plants, a substantial undecomposed carbonaceous material is deposited and accumulated in the sediments. Among the wetlands, Jhgarasisa has lowest (10%) macrophyte coverage, followed by Mathura beel (20%) and Bhomra beel (40%).



Carbon accumulation at different depths of wetland sediment

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Carbon stock up to 30 cm depth of sediments in wetlands and corresponding value in reference upland sites is given in the figure. In all the wetlands C accumulated is much higher than that in corresponding reference upland site. The data also revealed higher amount of C accumulation in Mathura beel in spite of having less phytoplankton biomass than Jhagrasisa wetland and less macrophyte coverage than Bhomra beel which might be due to more siltation in Bhomra beel and also for the fact that wetland bottom was not excavated for long time. The study indicated the significant role of these wetlands in capturing atmospheric carbon in to converting blue carbon.

S. K. Nag, U. K. Sarkar, Bandana Ghosh and B. K. Das

Exploratory study of Palair reservoir in Telangana

In order to understand the ecology, fish yield potential, fish assemblages and ichthyofaunal diversity, an exploratory survey was carried out in Palair, a medium reservoir (1500 ha) in Telangana covering morphometric and hydrological characteristics, soil and water quality parameters, primary production, abundance of fish food resources and fish catch composition through sampling during pre-monsoon and monsoon season. A total of 25 fish species was recorded by experimental fishing with gill nets of different mesh sizes and cast net. Stocking of IMC, *Macrobrachium rosenbergii* and *M. malcolmsonii* was being done in the reservoir during the month of July. In 2018, the reservoir was opened for fishing on 23rd May. Within the first 15 days, 80% of the fishes were caught and tilapia (*Oreochromis mossambicus* and *O. niloticus*) dominated the total catches. It was found that the reservoir has immense potential for fisheries development.

Fish catch from Palair reservoir, Telangana

Sajina, A. M, Canciyal, J., Mitesh, R., Ajay Saha, Jesna, P. K., Mishal, P., U. K. Sarkar, B. K. Das and A. K. Das

Post flood variations in hydrological parameters in inland open waters of Kerala

Recent flood had catastrophic effects on the hydrological features of rivers in Kerala. Forty one out of forty four rivers in Kerala were inundated by the extreme climatic events which were due to torrential rainfall recording nearly 2344 cm over a period of 75 days. An immediate rapid survey of inland water bodies of Kerala involving lakes, rivers and reservoirs was conducted by Kochi Research Station of the institute involving sampling stations such as Aluva and Eloor in Periyar river, Pallathuruthy in Vembanad lake and Mangalam reservoir. The transparency depth ratio in riverine stations was 0.135 - 0.14 indicating the highly turbid waters, which was coinciding with high values of Total Suspended Solids (TSS) ranging between 3000 to 7000 ppm. The lacustrine station at Pallathuruthy recorded Dissolved Oxygen (DO) of 1.2 ppm, BOD of 0.2 ppm, conductivity of 101.4 µS and Total Suspended Solids of 6000 µS. The basic water quality parameters assessed in these stations indicated that the hydrological regimes immediately after flood was not suitable for the survival and fish production from the respective systems. The samples analysed from Mangalam reservoir did not indicate any drastic changes in hydrological regimes due to flood.

Thankam Theresa Paul, Deepa Sudheesan, Rani Palaniswamy, Usha Unnithan and S. Manoharan

Assessment of loss to inland fishers during Kerala floods

The recent flood occurred in Kerala during August 2018 devastated the inland fishery on a large scale. Fishermen incurred heavy losses due to destruction of their gears, crafts, houses and household items. A rapid survey revealed that 92% of the fishers of Periyar river at Aluva had occupational, gear and infrastructure loss and 83% claimed that there was a drastic decrease in the catch of indigenous fishes which are replaced by the exotic fishes. Similar conditions were also observed in Kuttanad, a low lying

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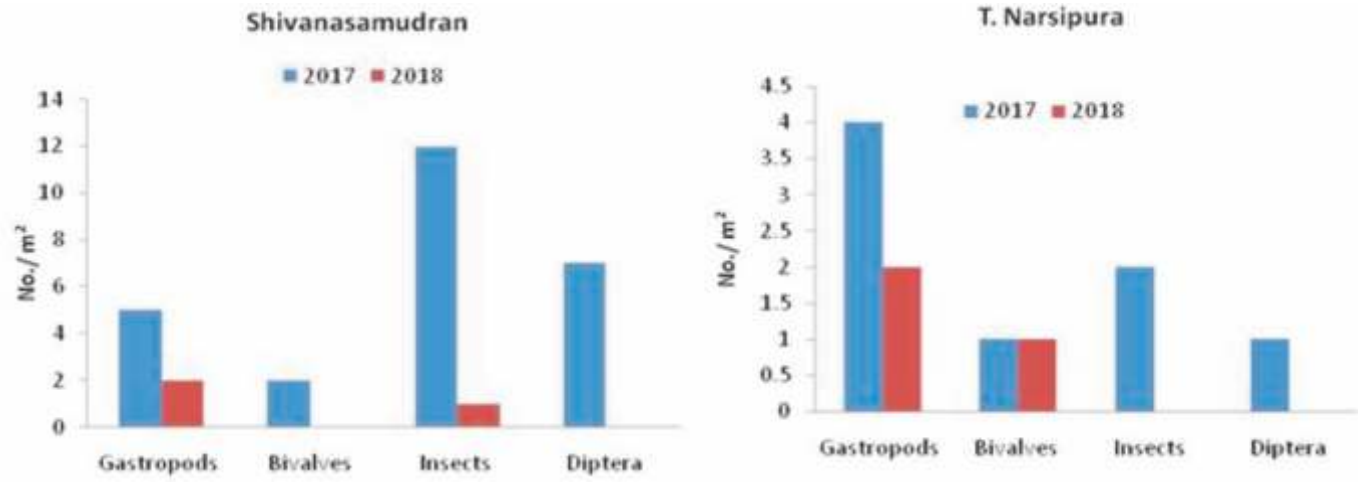
area below sea level, in Alappuzha District which is popular for the rice-fish farming. Kuttanad fishers, as a whole, encountered an extensive loss of craft and gears. Exotic fish, *Pangasianodon hypophthalmus*, *Oreochromis mossambicus* and *Piaractus brachypomus* increased the total landings as reported by 75% of fishers interviewed. However, it fetched lower market value (Rs. 40-60/kg) showing no appreciable increase in fisher's income. Reports by the fishery managers of Palakkad reservoirs indicated that there is an apprehension of escaping the stocked fishes due to the excess discharge of water from upstream dams. An estimation by the State Fisheries Department had shown the loss would be to the tune of 29 metric tonnes amounting to Rs. 34 lakhs. It was assessed that the major fishes loss was from Chuliyar reservoir (27.4%) followed by Mangalam reservoir.

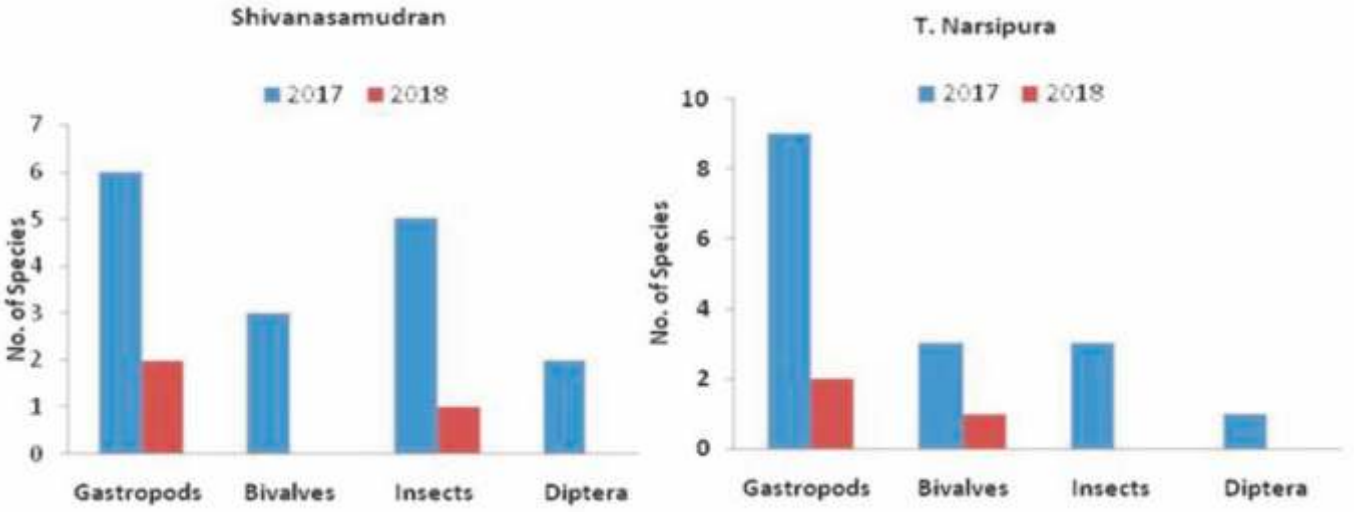
Deepa Sudheesan, Thankam Theresa Paul, Rani Palaniswamy and S. Manoharan

Impact of flood on abundance and diversity of benthic macrofauna in upper stretch of River Cauvery

Studies on macrobenthic fauna during Monsoon 2017 and Monsoon 2018 in Shivanasamudram and T. Narsipura in Karnataka, along river Cauvery showed drastic changes in their abundance and diversity. The abundance was changed from 10 no./m² during the monsoon 2017 to 3 no./m² in 2018 indicating drastic decline in abundance due to higher velocity. During July and first half of August 2018, the whole stretch of river Cauvery witnessed heavy flood. The fast current in river have washed off surface



Comparative macrobenthic abundance in Sivanasamudram and T. Narsipura in monsoon season



Comparative number of species in major benthic faunal groups at Sivanasamudran and T. Narsipura in monsoon season

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sediments along with the benthic organisms. The impact of flood was also visible on number of species present in each major benthic faunal groups, where in species of dipterans and insects completely disappeared while the number of species in Gastropods declined drastically due to flooding. Flooding also resulted in reduced macrophyte cover from 35% in 2017 to 5% in 2018. Macrophytes associated fauna like dipterans, juvenile of bivalves were totally disappeared due to floods.

Shravan K Sharma, Roshith C M, Sibina Mol, R K Manna, M. E. Vijaykumar, V. R. Suresh and B. K. Das

Expression patterns of heat shock protein genes in *Rita rita* from natural riverine habitat as biomarker response against environmental pollution

Heat shock proteins (hsps), the highly conserved proteins across species, many of which act as molecular chaperones playing predominant role in folding/ unfolding of proteins, have been reported to be suitable as stress biomarkers. In the present study, expression analysis of hsp genes (*hsp27, hsp47, hsp60, hsp70, hsc70,* and *hsp90*) and selected hsp regulatory genes (*heat shock factor 1, hsf1; hypoxia upregulated1, hyou1, apoptosis signal-regulating kinase 1; ask1, c JUN N terminal kinase; jnk*) were carried out to investigate the changes in their expression patterns as biomarker responses. Among the hsps studied, *hsp70* and *hsp47* were significantly up-regulated and *hsp27* was significantly down-regulated in most of the polluted stretches. Besides, a *hsp70* variant (*hsp70b*, Acc No. KR809708) appeared in both PCR amplification and immunoblot analysis (HSP72i) in fishes collected from sites highly contaminated with organic pollutants. PCA was employed to correlate the gene expression patterns with the water quality characteristics which showed that up-regulation of *hsp47* positively correlated with BOD. To identify the particular organic pollutant(s) which could be influencing the expression of hsps, multivariate analysis was employed taking concentration of persistent organic pollutants (POPs) and fold changes of hsps, which showed up-regulation of *hsp47* and *hsp70b* (HSP72i) correlated well with concentrations of aldrin and HCH. However, concentration of HCH and aldrin were found to be within the permissible limit in all the stretches studied. Those stretches where concentration of HCH and aldrin are in upper limit of threshold, a good correlation of hsps was observed. It was concluded that synergistic effect of these POPs might be influencing the expression of *hsp47*, and *hsp70b*; although individually they are present in low concentration; thus, indicating synergistic effect of these POPs on *hsp47* and *hsp70b* up-regulation as biomarker response. The findings have been reported in Chemosphere Journal, November 2018, Vol. 211, page 535-546.

B. P. Mohanty, Tandrima Mitra, Arabinda Mahanty, Satabdi Ganguly, Pranaya Kumar Parida, Prajna Ritambhara Behera and Rohan Kumar Raman

Expression patterns and mutation analysis of p53 in fish *Rita rita* from polluted riverine environment

Aquatic environment like rivers, lakes etc. are often the ultimate sink of increasing range of anthropogenic contaminants, a large proportion of which are potentially genotoxic and carcinogenic substances such as pesticides, xenobiotic and other new generation toxicants. In this study the partial p53 gene sequence of *Rita rita* was generated which showed a high degree of similarities with the DNA binding domains of fishes, mice and human. Transcriptomic analysis, showed significant down regulation of p53 in the fishes collected from most of the polluted stretches. Similar trend in protein abundance was observed by immunoblot analysis. Expression patterns of p53 suggest that exposure to multiple varieties of contaminants in the natural riverine ecosystem is suppressing the expression of p53. Mutation analysis identified eight mutations; two mutations at codon level and six missense mutations in the DNA binding domain IV and V. Changes in the protein residues impair the predicted secondary structure of protein. However, genomic DNA showed a low stained smear pattern upon electrophoresis, with no evidence of DNA fragmentation. Thus, the present study indicated that aquatic pollution has impacted the lower vertebrate which is reflected by the down regulation of tumor suppressor protein (p53) in majority of the stretches studied. The findings have been reported in Mutation Research/Genetic toxicology and Environmental Metagenesis, August 2018, Vol. 832-833, page 41-51.

B. P. Mohanty, Tandrima Mitra and B. K. Das

CIFRI developed diagnostic kit for Tilapia lake virus

The institute developed "CIFRI- TiLV one step PCR Kit", for the diagnosis of Tilapia Lake Virus in Tilapia. The kit offers a rapid,

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specific and sensitive detection system from RNA of the infected tissue in three hours. Dr. T. Mohapatra, Secretary, DARE and DG, ICAR, released the kit on 22 June, 2018 during the 24th Regional Committee II Meeting held at Orissa University of Agriculture and Technology, Bhubaneswar. Shri C. Roul, IAS, Special Secretary, DARE and Secretary, ICAR; Shri B. Pradhan, Additional Secretary, DARE and FA, ICAR; Dr. J. K. Jena, Deputy Director General (Fisheries Science), ICAR and Dr. B. K. Das, Director, ICAR-CIFRI, Barrackpore, Kolkata also graced the occasion.

Diseased Fish

TiLV Detection Kit

Memorandum of Understanding (MoU) signed

Signing of MoU

- A MoU was signed between the instittue and Bihar Animal Sciences University, Patna on 06 April 2018 for mutual benefit through close cooperation and sharing of knowledge and resources and jointly contribute towards harnessing the huge potential of integrated farming.

- Another MoU was signed between the institute and Directorate of Fisheries, Government of Odisha for two consultancy projects on 11 April 2018. The first project was the DPR preparation for the development of aquaculture cluster in periphery of Chilika lagoon. And the second project was another DPR preparation for the development of Tampara for commercial unit of aquaculture and culture based fisheries.

- The institute and the National Fisheries Development Board, Hyderabad signed a MoU on 02 May 2018 for popularization of cage culture technology developed by ICAR-CIFRI in wetlands and reservoirs of different states of India.

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Ranching programme for restoration of fish stock in River Ganga

The prized fishes of River Ganga like Rohu (*Labeo rohita*), Catla (*Catla catla*), Mrigal (*Cirrhinus mrigala*) and Kalbasu (*Labeo calbasu*), commonly known as Indian Major Carps (IMC), have declined sharply from 43.50 % few years back, to only 1.48% in the total annual catch. Thus, it is need of the hour to re-establish these highly demanding and ecologically important fishes of Ganga. In this context, the institute has been continuously striving for replenishing the stock with ranching of IMC seeds. During the period under report, under the CIFRI-NMCG project a fish ranching cum awareness campaign was organized on 05 September 2018 at Barendrapara Ghat (22°38'20.10"N 85°17'16.11"E), Bally, Howrah, West Bengal. A total of 5 lakh fry of Rohu, Catla, Mrigal and Calbasu were released into the river. An awareness and sensitization programme of the fishermen was also organized regarding declining fish biodiversity in river Ganga. Dr. B. K. Das, Director of the Institute; Swami Atmapriyananda ji Maharaj, Vice Chancellor, Ramakrishna Mission Vivekananda Educational and Research Institute, Belur; Swami Girashananda ji Maharaj, Manager, Ramkrishna Matha and Ramkrishna Mission, Belur Math, and local councilors were among the dignitaries present on the occasion.

Release of fish seed by revered Swamiji of Belur Math (Ramakrishna Mission)

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Trainings Conducted

Trainings for the fishers/fish farmers

Sl. No.	Name of the training	Date	Participants	Venue
1.	ATMA sponsored 'Inland open water fisheries management & development'	31 March to 04 April 2018	20 Fishers/Fish Farmers & one Official from ATMA, Kumargram Block, Alipurduar	CIFRI, H.Q. Barrackpore
2.	DoF, Bihar sponsored 'Inland open water fisheries management & development'	11-17 May 2018	29 Fishers/Fish Farmers & one Official from Sheikhpura, Bihar	CIFRI, H.Q. Barrackpore
3.	Hands on training on "Electronic Data Acquisition System (e-DAS) for fish catch data collection from reservoirs"	18 June 2018	25 Fishers/Fish Farmers & MP FISHFED Officials	Bhopal, Madhya Pradesh
4.	Productivity enhancement and extra income generation for rubber growers through fisheries	18 July, 2018	26 Fishers / Fish Farmers of Ri-Bhoi district, Meghalaya	Conservation Training Institute, Byrnihat, Meghalaya
5.	DoF, Bihar sponsored 'Inland open water fisheries management & development'	06-12 August 2018	25 Fishers/Fish Farmers & one Official from Nawada, Bihar	CIFRI, H.Q. Barrackpore
6.	DoF, Bihar sponsored 'Inland open water fisheries management & development'	13-19 August 2018	30 Fishers/Fish Farmers & one Official from Rohtas, Bihar	CIFRI, H.Q. Barrackpore
7.	DoF, Bihar sponsored 'Inland open water fisheries management & development'	22-28 September 2018	29 Fishers/Fish Farmers & one Official from Sitamarhi, Bihar	CIFRI, H.Q. Barrackpore
8.	ATMA sponsored 'Inland open water fisheries management & development'	25-27 September 2018	22 Fishers/Fish Farmers & one Official from ATMA, Raghunathgunj	CIFRI, H.Q. Barrackpore

Continued.....

Alipurduar farmer receiving certificate

NFDB sponsored training

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Continued.....

Trainings for the fishers/fish farmers

Sl. No.	Name of the training	Date	Participants	Venue
9.	NFDB sponsored'Fisheries management in wetlands of Bihar' under Central Sector Scheme on Blue revolution	18-22 June 2018	28 fishers from Kararia and Rulhi wetland in East Champaran (Mothihari) district of Bihar	CIFRI, H.Q. Barrackpore
10.	NFDB sponsored'Culture based fisheries for improving livelihood of inland fishers'	09-11 July 2018	50 Fishers/Fish farmers from different states of India	CIFRI, H.Q. Barrackpore
11.	NFDB sponsored'Conservation and culture of small indigenous fishes for livelihood and nutritional security'	02-04 August 2018	50 Fishers/Fish farmers from South 24 Parganas, West bengal	CIFRI, H.Q. Barrackpore
12.	NFDB sponsored'Canal fisheries development for income generation of fishers'	17-19 August 2018	52 Fishers/Fish farmers from South 24 Parganas, West Bengal	CIFRI, H.Q. Barrackpore&Namkhana, Sundarbans, West Bengal
13.	NFDB sponsored'Enclosure culture for doubling fishers' income'	21-23 August 2018	50 Fishers/Fish farmers from Gujarat and Maharashtra	A.P.M.C. Hall, Vadodara, Gujarat
14.	NFDB sponsored 'Reservoir fisheries management for employment generation'	27-31 August 2018	Fisheries Department Officers of Andhra Pradesh, Jharkhand, Karnataka, Maharashtra and Manipur	Organized by Bengaluru centre at ICAR-NBAIR, Bengaluru
	Training under Tribal Sub Plan			
15.	Trainings on canal fisheries development	12-15 June 2018	23 Farmers from Kalitala, Sunderban	CIFRI, H.Q. Barrackpore
16.	Conservation and culture of small indigenous fishes	09-12 July 2018	19 Farmers from Sagar Islands, Sundarbans	CIFRI, H.Q. Barrackpore
17.	Inland open water fisheries management & development	20-24 September 2018	26 Farmers from Purulia, West Bengal	CIFRI, H.Q. Barrackpore

NFDB training on SIFs

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Trainings for Department Officials

Sl. No.	Name of the training	Date	Participants	Venue
1	Inland fisheries management	09-13 April 2018	26 Officials from DoF, Chhattisgarh	CIFRI, H.Q. Barrackpore
2	Beel fisheries management for livelihood improvement	06-10 August, 2018	26 Fishery Officers (Assam, Nagaland, Manipur) and entrepreneurs from Assam	Regional Centre, Guwahati
	NFDB Sponsored			
3	Beel fisheries management for livelihood improvement	06-10 Aug 2018	26 Officers from various states	Regional Centre, Guwahati
4	Field level diagnosis of inland fish diseases for doubling farmers' income	20-24 Aug 2018	25 Officers from various states	CIFRI, H.Q. Barrackpore
5	Enclosure culture (cage and pen) for inland fisheries management	27-31 Aug 2018	23 Officers from various states	CIFRI, H.Q. Barrackpore
6	Reservoir fisheries management for employment generation	27-31 Aug 2018	16 Officers from various states	Regional Centre, Bengaluru

Field visit to Manchanbele reservoir

DoF officials of Chhattisgarh

NFDB sponsored training prog. on fish diseases

Training on e-DAS

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Training programmes for students

Sl. No.	Name of the training	Date	Participants	Venue
1	Fish Disease and ornamental fish breeding	03-06 April 2018	25 B.Sc. (Industrial Fish & Fisheries) students from S. K. Mahila College, Begusarai, Bihar.	CIFRI H.Q. Barrackpore
2	Principles of inland fisheries management	05-07April, 2018	15 students and two teachers of B.Sc. (Zoology) in Industrial Fish & Fisheries of Srikishan Sarda College, Hailakandi, Assam	Regional Centre, Guwahati
3	Orientation training programme on inland fisheries management	01-10 May 2018	24 M.Sc. (Zoology) students of Vinoba Bhave University, Hazaribag, Jharkhand	CIFRI H.Q., Barrackpore
4	Orientation training programme on inland fisheries management	19-26 May 2018	34 M.Sc. (Zoology) students of PK Roy Memorial College, Dhanbad, Jharkhand	CIFRI H.Q. Barrackpore
5	Orientation training programme on inland fisheries management	05-15 June 2018	24 B.Sc. (Agri.) students of Benaras Hindu University	CIFRI H.Q., Barrackpore
6	Orientation training programme on inland fisheries management	28 August-11September 2018	8 M.F.Sc. (FRM) students of ICAR-CIFE, Mumbai	CIFRI H.Q., Barrackpore

M.Sc. (Zoology) students of Vonobha Bhave Univ, Hazaribag

Students of P. K. Roy Memorial College, Dhanbad

Paid training programmes

Sl. No.	Name of the training program	Duration	Participants	Venue
1	1st National training on advanced analytical tools – Gas Chromatography, Mass Spectrometry	28 May – 01 June, 2018	9 (research scholars and post-doctoral fellows from OUAT, Bhubaneswar and Vidyasagar University, Medinipur, West Bengal, scientists and technical staff from CIFRI	CIFRI H.Q., Barrackpore
2	Concept building and basic statistical analysis for inland fisheries management	03 -10 August 2018	20 students, scientists, research scholars from WBUAFS, Kolkata and ICAR-CIFRI	CIFRI H.Q., Barrackpore
3	Advanced training on sediment and water quality assessment for managing sustainable fisheries in inland open waters	27 August-01 September 2018	12 students, research scholars and Officers from DVC, GBPUAT and Vinoba Bhave College	CIFRI H.Q., Barrackpore
4	Modelling of aquatic ecosystem-ECOPATH with ECOSIM	24-29 September 2018	15 ICAR-CIFRI Scientists	CIFRI H.Q., Barrackpore

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Exposure/Educational Visits

Sl. No.	Particulars of visitors	Date of visit
1	42 Students (M.Sc. Zoology) and 02 Teachers from Manipur University, Manipur visited the ICAR-CIFRI Regional Centre, Guwahati, Assam	11 April 2018
2	09 M.Sc. Students and 01 Teacher from Sidhu Kanhu Birsha University, Purulia visited the ICAR-CIFRI H.Q., Barrackpore.	11 May 2018
3	29 Fish farmers from Manipur, Sponsored by NFDB, Hyderabad visited the ICAR-CIFRI H.Q., Barrackpore.	02 June 2018
4	25 Trainees from Inland Fisheries Management Centre (I.F.T.C.), Manipur visited the ICAR-CIFRI Regional Centre, Guwahati, Assam	11 July 2018
5	22 (MSc. Zoology) Students and 01 Teacher from Andhra Fisheries College visited the ICAR-CIFRI H.Q., Barrackpore.	16 July 2018
6	31 (MSc. Zoology) Students and 01 Teacher from Vidyasagar University, Medinipur , West Bengal visited the ICAR-CIFRI H.Q., Barrackpore.	18 August 2018
7	18 Farmers from Karbi Anglong, Assam visited the ICAR-CIFRI Regional Centre, Guwahati, Assam	13-15 September 2018

Manipur University students at ICAR-CIFRI Regional Centre, Guwahati

Mass Awarness Programmes

- Awareness programme on 'Conservation of endangered fish species of Teesta River, West Bengal' was conducted in collaboration with NHPC Limited at Teesta Low Dam IV, Kalijhora, Darjeeling, West Bengal on 19 April 2018. The programme was attended by 60 participants comprised of fishermen and fish farmers from Reang, Kalijhora, Kalimpong, Raninagar and Jalpaiguri villages and six members from Himalayan Angling & Conservation Organization, Kalimpong, West Bengal.

- Awareness camp was organized on 30 August 2018 on 'Importance of SIFs and culture techniques in happa' for the tribal fishermen of Ranibandha, Kaptipada under Ranibandha MIP of Mayurbhanj district, Odisha. More than 60 tribal fishermen attended the awareness programme.

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Awareness camp at Polavaram, West Godavari, Andhra Pradesh

- A fishermen awareness programme was organized at Bally (Debendrapara ghat), Howrah, West Bengal under the 'Namami Gange' programme on 05 September, 2018 on 'Conservation of Ganga fisheries'.

- A mass awareness programme on 'Fisheries and habitat conservation in river Godavari for sustainable livelihood' was organised at Polavaram, West Godavari, Andhra Pradesh, on 27 September 2018 jointly by the ICAR-CIFRI and Department of Fisheries, Government of Andhra Pradesh. Around 100 fishers dependent on river Godavari for their livelihood, participated in the meeting.

- A sensitization workshop cum-awareness camp on 'Reservoir fisheries management for tribal fishers' was conducted under TSP on 29 June 2018 at Lingasugur, Raichur district, Karnataka. About 70 Tribal fishermen attended the meeting.

Fishers in the awareness programme at Bally (Inset : Dr. B. K. Das addressing the fishers)

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Staff Corner

Appointment

Ms. Sukanya Som, Scientist, Agricultural Extension joined ICAR-CIFRI on 30 July 2018

Promotions

Sl. No.	Name	Promoted to	With effect from
1.	Ms. Sunita Prasad	Assistant Chief Technical Officer	04.10.2016
2.	Shri Loknath Chakraborty	Technical Officer	30.05.2017
3.	Mrs. Mousumi Banerjee	Assistant	28.05.2018
4.	Shri Bijoy Roy	Assistant	28.05.2018
5.	Shri Ashwini Kumar (Promotion-on-Transfer)	Assistant Finance & Accounts Officer	30.06.2018
6.	Shri Pradipta Sen	Assistant	28.09.2018
7.	Shri Ganesh Bhanja	Upper Division Clerk	28.09.2018
8.	Shri Somenath Banerjee	Lower Division Clerk	28.09.2018

MACP of employees

Sl. No.	Name of the staff with designation and grade	Benefits granted		With effect from
1	Mr. R. Nagarajan, SSS (₹ 2000/L-3)	3rd MACP	₹ 2400/L-4	14.04.2018
2	Mr. Sarbeswar Kalita, SSS (₹ 2000/L-3)	3rd MACP	₹ 2400/L-4	16.04.2018
3	Mr. Shabbir Ahmed, SSS (₹ 2000/L-2)	2nd MACP	₹ 2000/L-3	23.04.2018
4	Mr. Sukhen Das, SSS (₹ 2000/L-2)	2nd MACP	₹ 2000/L-3	09.06.2018
5	Mr. Prabodh Ranjan Mahata, SSS (₹ 2000/L-2)	2nd MACP	₹ 2000/L-3	15.06.2018

Transfer

Sl. No.	Name & Designation	From	To
1.	Shri Lohith Kumar, Scientist	ICAR-CIARI, Port Blair	ICAR-CIFRI, Kolkata
2.	Mrs. Chayna Jana, Scientist	ICAR-IISWC, Dehradun	ICAR-CIFRI, Barrackpore
3.	Shri N.R. Naik, Scientist	ICAR-CIFRI, Barrackpore	ICAR-CIFT, Kochi
4.	Dr. Sandhya K.M., Scientist	ICAR-CIFRI, Barrackpore	ICAR-CIFT, Kochi
5.	Shri D. Karunakaran, Scientist	ICAR-CIFRI, Barrackpore	ICAR-CIARI, Port Blair
6.	Shri N.V.R.N Murty, SFAO	ICAR-CIFA, Bhubaneswar	ICAR-CIFRI, Barrackpore
7.	Shri Ashwini Kumar, AFAO	ICAR-IINRG, Ranchi	ICAR-CIFRI, Barrackpore

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Intra Institutional Transfer

Sl. No.	Name & Designation	From	To
1.	Shri Ram Prasad, Driver	Barrackpore H.Q.	Vododara Regional Centre
2.	Shri S.R. Meena, Assistant Chief Technical Officer	Barrackpore H.Q.	Allahabad Regional Centre
3.	Dr. Archana Sinha, Principal Scientist	Kolkata Research Station	Barrackpore H.Q.
4.	Shri Vikas Kumar, Scientist	Barrackpore H.Q.	Allahabad Regional Centre
5.	Shri Rahul Das, Scientist	Allahabad Regional Centre	Kolkata Research Station

Superannuations

Sl. No.	Name & Designation	Last place of posting	Date of superannuation
1	Shri S. Govindarajan, SSS	Kochi Research Station	30.04.2018
2	Shri K.C. Malakar, SSS	Barrackpore H.Q.	31.05.2018
3	Shri Shitla Prasad, SSS	Allahabad Regional Centre	31.07.2018

Awards and Recognitions

- The institute Hindi magazine "Nilanjali" was awarded with the first prize under the Ganesh Shankar Vidyarthi Hindi Magazine Puraskar for 2016-17 by the Indian Council of Agricultural Research. The same magazine was also conferred with the first prize under the same category by the Council in the year 2011.

The Ganesh Shankar Vidyarthi Hindi Magazine Puraskar for 2016-17

The Nilanjali team of ICAR-CIFRI

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Shri N.V.R.N. Murty receiving the award from Hon'ble Minister of Agriculture & FW in presence of Secretary DARE & DG, ICAR

The ICAR-Cash Award Scheme - 2017 Certificate

- Shri N.V.R.N. Murty, SFAO received awards under the ICAR Cash Award Scheme 2017 for administrative category for his efficient management of finance and audit in the institute.

- Dr. B. K. Bhattacharjya, Principal Scientist and Head, ICAR-CIFRI Regional Centre, Guwahati, Assam, served as a Member of State level Fish Seed Certification and Accreditation Committee, Assam during 2018. He along with Shri Simanku Borah, Scientist served as fishery expert in Doordarshan, Guwahati to advice on fisheries related queries in a Live phone-in programme. Dr. Bhattacharjya also acted as a member of Technical Expert Committee of Assam Fisheries Development Corporation Ltd., Guwahati during the period under report.

Meetings

1st Barrackpore Proteomics Workshop

The 1st Barrackpore Proteomics Workshop was organized by the Institute at Barrackpore during 27 June-2 July, 2018. Dr. B. P. Mohanty, HOD-FREM was the Course Director. The participants of the workshop included faculties from Stewart Science College, Cuttack and CFSc, Sri Venkateswara Veterinary University, Nellore; Scientists from ICAR-CIFRI and Research Scholars from College of Veterinary Sciences, OUAT, Bhubaneswar, and Kalyani University. The six-days' workshop included lectures by eminent researchers in this field. Hands-on training including analytical techniques like SDS-PAGE, 2D gel electrophoresis, Western Blot, 1D and 2D Gel Image analysis and transcript analysis by RT-PCR was imparted to the participants.

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Prof. Vipul Bansal delivering lecture

Inception workshop at Guwahati

IMC meeting in progress

Workshop on 'Biosensor Technology in Inland Fisheries'

The institute in collaboration with the Inland Fisheries Society of India (IFSI) organized an one day workshop on "Application of Biosensor Technology in Inland Fisheries" on 01 August 2018 at ICAR-CIFRI, Barrackpore. Eminent personalities like Prof. Vipul Bansal, RMIT University, Melbourne, Australia; Dr. Nabarun Bhattacharyya, Director, C-DAC, Kolkata; Dr. D. Pradhan, Professor, IIT-Kharagpur; Prof. Priyabrat Sarkar, Calcutta Institute of Technology; Prof. Rajib Bandyopadhay, Jadavpur University, Kolkata; Dr. P. Swain, Principal Scientist, ICAR-CIFA; Dr. K. Krishnani, Principal Scientist, ICAR-CIFE; Prof. A. K. Dasgupta, Calcutta University; Dr. Anindya Sen, Heritage Institute of Technology, Kolkata have delivered lectures in the workshop.

Inception Workshop under NMHS Project

The ICAR-CIFRI, Guwahati Regional Centre organized an inception workshop on 'Up-scaling of climate-friendly pen aquaculture technology for improved livelihood, employment generation and enhanced income of wetland fishers of North-Eastern India' on 24 Aug 2018 at the College of Veterinary Science, AAU, Khanapara. The project is sponsored by the National Mission on Himalayan Studies, Ministry of Environment and Forest, Govt. of India. The project would be implemented by ICAR-CIFRI in collaboration with Directorate of Fisheries, Govt. of Manipur, Meghalaya and Arunachal Pradesh. The workshop was graced by Dr. J. K. Jena, Deputy Director General (Fisheries and Animal Sciences), ICAR. Dr. B. K. Das, Director, ICAR-CIFRI, Barrackpore; Prof. R. N. Goswami, Dean, College of Veterinary Science (AAU), Khanapara; Dr. S. Rajkhowa, Director, NRC on Pig, Rani; Shri J. K. Samal, Deputy General Manager, NABARD, Guwahati; Fisheries officers and fishers from Manipur, Meghalaya and Arunachal Pradesh participated in the workshop.

47th Institute Management Committee Meeting

The 47th Institute Management Committee meeting of ICAR-CIFRI was held at the institute headquarters on 07 September 2018 under the chairmanship of Dr. B. K. Das, Director. The Chairman briefed the members about activities carried out by the institute since last meeting, in the field of research, extension, overall institute management and linkages established with other stakeholders. The members appreciated progress of

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research work at the institute and complemented the Director, Scientists and other staff of the institute. Dr. S. K. Nag, Principal Scientist of the institute delivered a presentation on heavy metal and pesticide contamination in inland open waters.

Workshop on Pension and Retirement Benefits

A two days workshop was organized at ICAR-CIFRI, Barrackpore during 3-4 September 2018. Officials from Audit & Accounts of the Institute, Officials from other ICAR Institutes attended the workshop. Dr. K. K. Panth, retired Professor, ISTM delivered special lectures on the occassion.


Dr. K. K. Panth delvering lecture in the workshop

Meeting with Pensioners

A meeting was organized at the institute Headqarters for addressing the pending issues and other grivences of the pensioners. Around 20 retired ICAR Employees attended the meeting, Their grievences and other pending issues were discussed in the presence of Director, Chief AO, SFAO, AFAO and Bank Officials. The pensioners felt satisfaction over the discussion and desired to have this kind of meeting frequently.


Meeting with pensioners

Mid-term Institute Research Committee Meeting

The mid-term Institute Research Committee meeting for the year 2018-19 was held at the Institute Headquarters, Barrackpore on 25-26 September 2018. The objective of the meeting was to assess the achievements made so far and mid-course correction, if any. Dr. B. K. Das, Director, ICAR-CIFRI chaired the meeting. Scientists from the CIFRI Headquarters, Kolkata Research Station and Project Principal Investigators from Regional Centers/Stations attended the meeting. The Chairman stressed on on-time completion of the objectives of the projects and on time submission of RPP III of the completed projects. He stressed upon proper and systematic sampling plans to collect the seasonal data for good research outputs and international publications. He urged scientists to quickly publish the output in the form of research paper, policy paper, advisories, database development etc.


Mid-term IRC Meeting

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Oxford University Press - User Awareness Programme

CIFRI has organised a programme on "Flavours of Oxford University Press - User Awareness Programme on Oxford Journals and How to Publish with Oxford University Press" at CIFRI, Barrackpore on 10 Sept. 2018. Mrs. Sumita Sen, Asst. Manager, Training, South Asia & South East Asia, Oxford University Press, gave a detailed presentation on various aspects of journals and books published by Oxford University Press. She highlighted the facilities available for Oxford journals through Consortium of e-Resources in Agriculture (CeRA) and also enlightened about the download facilities for books. She also discussed about the modalities of incorporation of new Oxford journals into CeRA, against any specific need of scientists of CIFRI.

Mrs. Susmita Sen delivering lecture in the awarness programme

Events

Honourable Union Minister of Agriculture and Farmers Welfare Inaugurated Four Wetland Development Projects at Motihari, Bihar

Inauguration of Wetland Development projects

Honourable Union Minister of Agriculture and Farmers Welfare, Shri Radha Mohan Singh inaugurated four wetlands fisheries development projects on 13 April 2018 on the sidelines of Regional Agriculture fair at Motihari, Bihar. The projects aim at enhancing nutritional security and livelihood of the dependent fishers. These projects are being executed by ICAR-CIFRI in East Champaran district of Bihar in four wetlands namely, Kararia, Sirsa, Majharia and Rulhi through stakeholders' participatory fisheries management model (co-management) in a sustainable manner. Shri Sachindra Prasad Singh, Honourable MLA, Shri Bablu Gupta, Honourable MLC; Dr. J. K. Jena, DDG (Fishery Science); Dr. A. K. Singh, DDG (Agril. Extension); Dr. A. K. Singh, DDG (Horticulture), Dr. Gopal Krishna, Director, ICAR-CIFE, Mumbai; Dr. S. Raizada, ADG (Inland Fisheries); Dr. B. K. Das, Director, ICAR-CIFRI, Barrackpore, Dr. B. P. Bhatt, Director, ICAR-RCER, Patna, were present on this occasion.

Rabindra Jayanti

The institute celebrated the birth anniversary of Rabindranath Tagore with fervour, zeal and enthusiasm. The staff had put up a cultural programme based on Tagore's composition. Many staff recited poems and showed deep respect to the Bard by their exclusive performances. The celebration commenced with garlanding Gurudev by the Director. A mesmerizing performance by Ms. Keya Saha and other enthralled the audience. The Director discussed "Tagore's

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Love for Nature", his profound interest in conservation of nature. Wonderful messages by the Heads of the Divisions made the audience spellbound. They remarked that Tagore and his compositions should be imbibed in every soul and every heart. We need to inculcate the values of life through his compositions.


Celebration of Rabindra Jayanti

World Biodiversity Day

The institute celebrated World Biodiversity Day on 23 may, 2018 fervently at the Head Quarters, Barrackpore with an aim to create awareness among the institute staff, research scholars, young professionals, students on importance of conservation of biodiversity especially aquatic ones. Dr. Jose T Mathew, IFS, Principal Chief Conservator of Forests, Govt. of West Bengal; Dr. Arun Padiyar P, Project Coordinator, Odisha World Fish Project and Dr. B. K. Das, Director, ICAR-CIFRI were the dignitaries present on the occasion. The Chief Guest elaborated the basic principles of biodiversity conservation in the present perspective. Thirty four M.Sc., Zoology students of P.K.R. Memorial College (PG), Dhanbad; Shri K. L. Manjhi, Chief General Manager and Shri R. K. Chowdhury, Regional Manager, MP Fisheries Federation were also present.

World Environment Day

The Institute celebrated World Environment Day on 05 June 2018 at its HQs and different Regional Centres. The day was marked by planting saplings of Mangrove Sundari trees (*Heritiera fomes*) on the bank of river Ganga involving native populace and sensitizing them about river bank erosion and role of plantation in its mitigation. Local school children were also encouraged in planting the mangrove saplings. Tulsi and Neem (medicinal plants) saplings were also planted in the institute campus.


Celebration of World Environment Day

International Day of Yoga

The institute celebrated 4th International Day of Yoga on 21 June 2018 at its HQs and different Regional Centres. At Barrackpore, the yoga session was conducted under the guidance of eminent yoga expert, Mr. Sujit Ghorei and his group of Yoga Kendra, Barrackpore, based on the Common Yoga Protocol provided by the Ministry of AYUSH,

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Government of India. Around 150 staff members and their families attended the program in the morning of 21 June in the lobby of ICAR-CIFRI. Earlier, on the previous day a lecture on 'Health benefits of Yoga' was also organized at the institute auditorium. ICAR-CIFRI Regional Centres Guwahati, Bangalore and Vadodora also celebrated yoga day on this occasion.

Barrackpore

Guwahati

Vadodara

National Fish Farmers' Day

National Fish Farmers' Day

The Institute celebrated the National Fish Farmers' Day on 10 July 2018 at its Headquarters. The day commemorates the revolutionary induced breeding technology developed by Dr. Hiralal Choudhury of this Institute. Shri Swami Atmapriyanandji, Vice Chancellor of Ram Krishna Vivekanand University and Research Institute, Belur Math was the Chief Guest of the function. Dr. A. N. Roy, Director NIRJAFT, Prof. B. C. Mall, Vice Chancellor of JIS Group University, Kalyani and Dr. B.K. Das, Director of the institute were present on the occasion. Around 150 fish farmers from various states, namely, West Bengal, Bihar, Odisha, Jharkhand, Uttar Pradesh and Chhattisgarh, participated in the event. Among them, 11 fish farmers were awarded "Best Fish Farmer Award" at the function for their contribution to fisheries and aquaculture sector of India.

Independence Day

The institute celebrated 72nd Independence Day on 15 August 2018. Dr. B. K. Das, Director unfurled the tricolor and paid rich tribute to the nation. He remarked that in the last 72 years the institute has grown tremendously along with the growth of the country. He congratulated all the staff of the institute for the great achievements. However, he cautioned that there is no room for complacency. Some of the security staff of the institute were decorated for their outstanding services. A cultural programme was also organized.

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The institute observed the first monthly death anniversary of late Prime Minister, Bharat Ratna Shri Atal Bihari Vajpayee at the Institute Head quarters on 16 September 2018.

Staff members recited the poems pained by him and discussed his achievements and contributions to the nation.

हिन्दी सप्ताह 2018

संस्थान द्वारा राजभाषा हिंदी के प्रचार–प्रसार एवं प्रोत्साहन की कड़ी में हिंदी सप्ताह दिनांक 14 से 20 सितंबर 2018 के बीच मनाया गया। इसका उद्घाटन दिनांक 14 सितंबर, 2018 को माननीय निदेशक महोदय जी ने किया और सभी अधिकारियों और कर्मचारियों से यह अपील किया कि वे कार्यालय कामकाज में राजभाषा हिंदी का अधिकाधिक प्रयोग करें तथा अधिकतम पत्र–व्यवहार हिंदी में करें। इस अवसर पर उन्होने हिंदी कक्ष को निर्देश दिया कि प्रत्येक महीने संस्थान के अनुभागों से राजभाषा हिंदी कार्य की प्रगति पर ध्यान दिया जाए। इस अवसर पर मुख्य अतिथि डा. एन. सिंह, निदेशक, विवेकानन्द मिशन, पांसकुड़ा ने अपने व्याख्यान के प्रारंभ में संस्थान के निदेशक को हिन्दी सप्ताह पर बधाई देते हुए कहा कि वे संस्थान में हो रहे हिन्दी के कार्यों से बहुत प्रसन्न हैं। उन्होंने कहा कि कार्यालय के कामकाज में सरल और आसानी से समझ आने वाली हिन्दी भाषा का प्रयोग करें। उन्होने कहा कि सामान्य रूप से प्रचलित शब्दों के साथ अन्य भाषाओं के प्रचलित शब्दों का भी बेहिचक प्रयोग करें। कठिन हिन्दी शब्दों के स्थान पर मूल अंग्रेजी शब्द को देवनागरी लिपि में लिख सकते हैं। वर्तमान में इंटरनेट पर उपलब्ध सभी सर्च इंजन और ऐप्स जैसे फेसबुक, ब्लॉग और ट्विटर आदि भी हिंदी में उपलब्ध हैं। विशेष अतिथि डा. बी. सी. झा, पूर्व प्रभागाध्यक्ष; डा. वी. आर. सुरेश, प्रभागाध्यक्ष एवं श्री राजीव लाल, मुख्य प्रशासनिक अधिकारी ने हिन्दी भाषा प्रयोग की सुगमता हेतु अलग – अलग प्रक्रिया बताया।

डा. श्रीकान्त सामन्ता, प्रधान वैज्ञानिक एवं सर्वकार्यभारी, हिंदी कक्ष ने संस्थान में हो रहे हिंदी कार्य का संक्षिप्त विवरण प्रस्तुति के साथ महानिदेशक, भारतीय कृषि अनुसंधान परिषद्, नई दिल्ली द्वारा जारी राजभाषा हिंदी से संबंधित अपील भी अधिकारियों व कर्मचारियों के बीच पढ़कर सुनाई गयी। श्री एस. के. साहु, वैज्ञानिक ने धन्यवाद ज्ञापन प्रस्तुत किया।

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हिंदी सप्ताह के दौरान विभिन्न प्रतियोगिताएं जैसे हिंदी निबंध प्रतियोगिता, हिंदी श्रुत लेखन प्रतियोगिता, हिंदी शब्दावली प्रतियोगिता, प्राज्ञ पास अधिकारियों के लिए प्रश्नोत्तरी, आशु भाषण प्रतियोगिता एवं कविता पाठ का आयोजन किया गया तथा इन प्रतियोगिताओ में उत्कृष्ट प्रदर्शन करने वाले अधिकारियों व कर्मचारियों को पुरस्कृत किया गया।

संस्थान के क्षेत्रीय केंद्रों में भी हिन्दी सप्ताह/पखवाड़ा मनाया गया। संस्थान के बेंगलुरु व वडोदरा केंद्र में दिनांक 14 से 20 सितंबर 2018 के दौरान हिन्दी सप्ताह मनाया गया। इस दौरान दिनांक 15 सितम्बर 2018 को बेंगलुरु केंद्र में दो कार्यशालाएं आयोजित की गयीं– "कार्यालयीन शब्दावली का परिचय" और "हिंदी एवं स्थानीय भाषाएं"।

Recreation Club Activities

Health check-up for the staff


Ganesh puja celebration


The institute staff donated generously for flood victims of Kerala

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Important visitors

Shri V. P. Kothiyal (2nd from right), Director (Works), ICAR (06.04.18)

Dr. Arun Padiyar (2nd from right), Project Coordinator, Odisha World Fish Project (23.05.2018)

Shri Sandeep K. Sultania, IAS, (at the entre) Secretary, Animal Hasnbadry, Dairy Devt. & & Fisheries, Govt. of Telangana State (06.07.2018)

Ms. I. Rani Kumudini, IAS, CEO, NFDB (extreme right) (17.08.2018)

Shri Soumen Mitra, IPS, (1st from left) ADG Training Kolkata Police (15.09.2018)

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Tribal Sub-plan (TSP) activities

The institute has undertaken several activities for livelihood improvement of marginalized tribal population across the states under TSP. Currently, the TSP activities are being undertaken in West Bengal (4 districts, 6 locations), Odisha (2 districts, 3 locations), Kerala (1 location), Madhya Pradesh (1 location) and Assam (1 location), Karnataka (1 location), Gujarat (1 district, 2 locations). During the period of April to Sept 2018, the institute conducted four in-house trainings, eight awareness camp-cum-scientist - fish farmer / fishers interface programmes and input distribution programmes.

Purulia tribal fishers in a training programme at CIFRI, Barrackpore

Sagar tribal fishers getting certificate after the training programme at CIFRI, Barrackpore

CIFRI HDPE PEN has been installed at 7 locations in which fingerlings are being raised by the tribal fishers. The tribal fishers of Kalitala (WB) were trained on scientific culture aspects for production enhancement from the canals. The canals were applied with lime and stocked with the Indian major carp (IMC) fingerlings. Hapas were distributed to women fishers of Ranibandha, Mayurbhanj, Odisha and Gardanmari wetland, Burdwan, West Bengal for culture of SIFs (Small Indigenous Fishes), which is a unique intervention by ICAR-CIFRI. The SIFs cultured in hapa are targeted for the household nutritional security of the tribal fishers. Fish seeds were released in pens installed in Kalo reservoir in Mayurbhanj and Gardanmari wetland, Burdwan.

Training programme on 'Pen Aquaculture in Beels' at Barjhora, Goalpara district, Assam

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Guwhati Regional Centre of ICAR-CIFRI organized a pre demonstration of "pen" for the tribal of Barjong beel, Golpara district of Assam on 21 June 2018. Officials from State Fisheries Department, Ajagar Social Circle, Rubber Producers' Society, Rubber Board Regional Office, Agia, were present. Scientists interacted with the local fishers/ tribal community members (> 90 nos.) on different aspects of pen aquaculture technology in the training programme.

Cage culture demonstration to tribal fishers

Demonstration on fish feed production

The Bangalore Research Centre of the institute organized a sensitization programme on "Reservoir fisheries management" at Lingasugur in Raichur district of Karnataka state on 29 June 2018. The programme was attended by seventy tribal fishermen of the "Sri Lakshmi Fishermen Co-operative Society. The CIFRI staff discussed various management practices to be followed in the reservoirs. Officials from state fisheries department and office bearers of the cooperative society also participated in the programme. Similarly Baroda Centre of the institute organized a fishers-scientist interaction programme for tribal fishers of Karjan reservoir on the best practices for production enhancement in reservoirs.

Sensitization programme at Lingasugur, Raichur, Karnataka

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Glimpses of Swachh Bharat activities during Oct 2017 to March 2018

Swachh Bharat Pakhwada oath at the Institute Headquarters on 16.05.2018

Green pit for vermicompost production at Barrackpore

Cleaning of CIFRI library at Barrackpore

Clean Ganga campaign at Barrackpore

Swachhta rally in Kathuria village of Barasat block, W.B.

Sit and draw on *swachhta* for children

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Distribution of sanitizers among villagers

Awareness generation by CIFRI staff among school children

Swachhta activity at Markandyaghat, Godavari River

Oath taking ceremony during *Swachh Bharat Pakhwada* at Bangalore centre

Swachh Bharat activities at Kochi Research Station, Kerala

Cleanliness activities by the staff of Guwahati Centre

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सिफरी समाचार

अनुसन्धान उपलब्धियां

बाऊर मात्स्यिकी : गंगा नदी के ऊपरी क्षेत्र में मछली पकड़ने की एक पारंपरिक विधि

"बाऊर" मछली जिसे स्थानीय रूप से फाँस/फाँडी भी कहा जाता है, उत्तराखंड की पहाड़ी धाराओं में अधिक पायी जाती है। इस मछली का पकड़ने के लिए एक मुख्य नायलॉन रस्सी में 15–20 से.मी. के नियमित अंतराल पर गाँठ के साथ सठीक लूप के कई छोरों को एक गाँठ के साथ बांधा जाता है। सठीक नायलॉन धागे की लंबाई 3–10 से.मी. के लूप व्यास के साथ 30–60 से.मी. से भिन्न होती है। छोरों की संख्या 60–150 से भिन्न होती है। मछलियों को कसने के लिए लूप इस तरह से बनाए जाते हैं कि लूप की गाँठ लूप के व्यास को कम करने के लिए आसानी से फिसल सकती है। पत्थर मुख्य नायलॉन रस्सी में 1–2 मीटर के अंतराल पर बंधे होते हैं, जो सिंक के रूप में कार्य करते हैं। मछलियों के पंख की गतिविधियों से, छोरों को संकीर्ण करना शुरू हो जाता है और मछलियां छोरों में उलझ जाती हैं/फंस जाती हैं। इस तरह के एक मछली पकड़ने के संचालन में, पकड़ आमतौर पर 3–5 किलोग्राम से भिन्न होती है। इस विधि द्वारा पकड़ी गई मछलियों का आकार 0.5–3.0 किलोग्राम से लेकर *टॉर* एसपीपी, *सिजोथोरैक्स* एसपीपी, *क्रॉसोशीलस* एसपीपी, *लेबियो कोलबासु, गैरा* एसपीपी आदि को पकड़ने के लिए उपयोग किया जाता है।

एस. सी. एस. दास, ए. आलम, डी. एन. झा, जे. कुमार, वी. आर. ठाकुर, वी. कुमार, के. श्रीवास्तव, एस. के. श्रीवास्तव, यू. सिंह, एच. ओ. वर्मा, एस. के. मिश्रा, एस. के. वर्मा, ए. आर. पांडे और आर. एस. श्रीवास्तव

हिमालय नदी की मछलियों को प्रथम बार उनके अभिगमन मार्ग की निगरानी हेतु टैग किया गया।

संस्थान ने एनएचपीसी के साथ मिलकर तीस्ता नदी की अभिगमन करने वाली मत्स्य प्रजातियों जैसे *चॉकलेट महासीर, नियोलिसोकिलस हेक्सागोनेलेपिस* (आई यु सी एन के अनुसार ये प्रजातियां खतरे की स्थिति में हैं), *साइजोथेरैक्स रिचर्डसोनी* (आई यु सी एन के अनुसार यह प्रजाति असुरक्षित हैं) तथा अन्य दो हिमालयी प्रजातियों के अभिगमन मार्ग का प्रथम बार अध्ययन किया। इसके साथ, मछलियों की अवैध मत्स्ययन, उनका संरक्षण तथा उनके आवास संबंधी विशयों पर एक जन–जागरूकता कार्यक्रम किया गया। लगभग 100 मछलियों (175–580 मि.मी.) को फ्लॉय टी–बार एंकर टैग से टैगिंग किया गया। इन मछलियों को पुनः प्राप्त करने की प्रक्रिया चल रही है जिससे उनके अभिगमन संबंधी भौगोलिक स्थिति का पता लगाया जा सकेगा।

बि. के. दास, ए. के. साहू, डी. के. मीणा, ए. के. स्वैन, आर. के. रमन और टी. एन. चानू

गंगा नदी से सबसे बड़ी मत्स्य प्रजाति, *कोरिका सोबोरना* हैम. 1822 का पाया जाना

गंगा नदी में वर्श 2018 के मानसून सैम्पलिंग में स्प्राट प्रजाति, *कोरिका सोबोरना* हैम. 1822 की सबसे बड़ी मछली को पकड़ा गया। सामान्यतः यह मछली एषियाई देषों जैसे बंगलादेश, थाईलैण्ड, मलेषिया, ब्रुनेई और इंडोनेशिया में पाई जाती है। आईयुसीएन सूची के अनुसार यह मछली किसी खतरे के मुक्त है। यह मछली सर्वाहारी होती है आर इसका भोजन छोटे केशरुकी जीव, जंतुप्लवक एवं अन्य प्लवक हैं। इनहें गंगा नदी के निचले क्षेत्र में 'घिया' मछली के नाम से जाना जाता है। इनका अधिकतम आकार वैश्विक तौर पर 5.3 से.मी. और भारत में 4.0 से.मी. दर्ज किया गया है। पर अप्रैल 2018 में उत्तर प्रदेश में गंगा नदी में पकड़ी गई इस मछली का आकार 8.5 से.मी. और भार 4.25 ग्रा. पाया गया है। अब तक का यह सबसे बड़ी मछली होने का रिकार्ड है।

ए. आलम, एस. सी.एस दास, वी. आर. ठाकुर, डी. एन. झा, एस के वर्मा, एच. ओ. वर्मा, एस. के. मिश्रा, आर. एस. श्रीवास्तव एवं बि. के. दास

पेलनी मात्स्यिकी – ताप्ती नदी में जनजाति मछुआरों द्वारा झींगा मात्स्यिकी

ताप्ती नदी की झींगा मात्स्यिकी यहां के जनजाति मछुआरों के आजीविका निर्वहन का मुख्य आधार है। पेलनी एक प्रकार का तिकोना पुश जाल होता है जो बांस से बना होता है तथा झींगा और तलछट में जमी मछलियों को पकड़ने के लिये प्रयोग किया जाता है। मध्य प्रदेश और महाराष्ट्र के जनजाति मछुआरें मात्स्यिकी हेतु केवल इसी जाल का प्रयोग करते हैं। महाराष्ट्र के चांगदेव नदी में संस्थान के सर्वेक्षण के अनुसार, लगभग 4 से 10 कि.ग्रा. मछली प्रति दिन प्रति मछुआरा दर्ज किया गया है। ताप्ती–पुरना संगम में 2.3 मछुआरों का एक समूह छोटी झींगा प्रजाति, *मैक्रोब्रेकियम लमारिमारी*, एम टिवारी और एम किसनेंन का मत्स्ययन करते हैं। पर इस प्रकार के मत्स्ययन के कारण तलछट में वास करने वाली अन्य मछलियां पर भी खतरा बना रहता है।

टी निरूपदा चानु, वी आर सुरेश , सतीश कोशलेष , प्रनव गोगोई, राजू बैठा, एस के दास, आनंद मिति और जे के सालंकी

कर्नाटक के कुदगी में कावेरी नदी से *नॉटोप्टेरस नॉटोप्टेरस* (पोलास 1769) में विकलांगता और परजीवी संक्रमण

मॉनसून पूर्व सर्वेक्षणों के दौरान कुदेगी (कर्नाटक में कोडागु जिला) में कावेरी नदी से *नॉटोप्टेरसो नॉटोप्टेरस* (पलास 1769) में विकलांगता दर्ज किया गया था।

मछलियों की लंबाई 147 मिमी और शारीरिक भार 30 ग्राम थी। कौंडल पेडुनल क्षेत्र में विकलांगता देखी गई। आमतौर पर प्राकृतिक नदी के प्रजातियों में इस प्रकार की विकलांगता नहीं देखी जाती है ।

सिबिना मॉल, एस., एन. राजेंद्र नायक, एम. ई. विजयकुमार, ए. सेनगुप्ता, आर. के. मन्ना, रोशिथ सी. एम., शर्मा, एस. के., राजू बैठा, वी.आर. सुरेश और बि. के. दास।

केरल के चलियार नदी के दलदली क्षेत्र में केकड़ा कृषि हेतु रिंगनुमा नेट जाल का प्रयोग

केरल के चलियार नदी के दलदली क्षेत्र में केकड़ा कृषि हेतु रिंगनुमा नेट जाल का प्रयोग किया जाता है। इस जाल का प्रयोग बहुतया नदी के मुहानों पर किया जाता है। स्थानीय तौर पर इस जाल को 'रिंग ' के नाम से जाना जाता है तथा इसका प्रयोग पूरा वर्ष विशेषकर रात्रि के समय निम्न ज्वार के सामय किया जाता है। यह जाल लोहे का बना होता है तथा इसका निचला तल संपूर्णतः एचडीपीई नेट से ढका होता है। इस रिंग में सुनिश्चित अंतराल पर 0.5 मिमी व्यास वाली चार नाइलोन रस्सी को कसा जाता है। इन रस्सियों को समान व्यास वाली एकल रस्सी के साथ बांध दिया जाता है। इसके बाद थर्मोकोल अथवा प्लास्टिक बोतल के साथ जोड़ दिया जाता है। इसमें छोटी मछलियों अथवा मुर्गी के मांस के छोटे टुकड़ों को चारे के तौर पर रखा जाता है जिससे ये केकड़े जाल में आते हैं और फंस जाते हैं। इस क्षेत्र में *स्काइला सेरेटा* आदि प्रजातियां अधिक पाई जाती हैं। इस जाल को सरलतापूर्वक बनाया और इसका प्रयोग किया जा सकता है तथा इसकी लागत मूल्य भी कम होती है। औसतन 200–300 ग्रा. वाले 2–3 केकड़े पकड़े जा सकते हैं पर इसमें छोटे केकड़े भी फंस जाते हैं इसलिये इस जाल में तदनुसार परिवर्तन करना चाहिये।

अजय साहा, टी टी पॉल, दीपा सुधीसन, श्रवण कुमार शर्मा, एस मनोहरन, वी आर सुरेश और बि. के. दास।

मणिपुर के लोकतक झील में पेन पालन द्वारा आय वृद्धि

मणिपुर का लोकतक झील सबसे बड़ा खुलाजल क्षेत्र है जिसमें मात्स्यिकी विकास किया जाता है। इसमें संस्थान के गुवाहाटी केन्द्र ने ताकमु पाट में पेन पालन द्वारा मत्स्य संवर्धन का कार्य प्रारंभ किया। इसके लिये बांस के लट्ठों की सहायता से पेन को वर्ष 2012–13 में लगाया गया। परिणामस्वरूप वर्ष 2015–16 में मात्स्यिकी विभाग, मणिपुर सरकार के सहयोग से पेन पालन तकनीक का प्रदर्शन एवं प्रचार किया गया। इससे प्रेरित होकर 50 मछुआरों ने 0.5 हे. जलक्षेत्र में पट्टे पर पेन पालन किया। इस पालन से प्रति हे0 3000 से 4000 कि.ग्रा. मछली उत्पादन हुआ। इस कृषि का लाभ–लागत अनुपात 1.54 से 1.87 हुआ जो यह दर्शाता है कि पेन पालन मछुआरों के आय वृद्धि के लिये उपयुक्त पालन पद्धति है।

ए. के. यादव, बी. के. भट्टाचार्य, एस. बोराह, अरुण पंडित और बि. के. दास।

कर्नाटक के हरंगी जलाशय में मछली विविधता संरक्षण की स्थिति

कर्नाटक में हरंगी कावेरी नदी में स्थित है। वर्ष 2017–18 में सीजनल फिश असेंबल अध्ययन में 10 परिवारों के कुल 37 प्रजातियों का अध्ययन किया गया। शैनन डायवर्सिटी इंडेक्स के अनुसार मॉनसून पूर्व 1.531 और मानसून के बाद 1.487 प्रजातियों को दर्ज किया गय स अध्ययन में यह देखा गया कि मानसून में मत्स्य प्रजातियों कि विविधता अधिक होती है। *टोर खुदरी,* जो एक लुप्तप्राय प्रजाति है, का आखेट मत्स्ययन के रूप में बहुत महत्व है। इस जलाशय से मिली 50% से अधिक मछलियाँ खतरे वाली श्रेणी की हैं। यह बढ़ते पर्यावरणीय तनाव के कारण हो सकता है जिसमें जलाशय के गठन, मछलियों का दोहन और उनके वास स्थान के विनाश के कारण संभव है। संरक्षण उपायों के रूप में मछली पकड़ने पर प्रतिबंध जून और जुलाई के दौरान लगाया गया है। राज्य मत्स्य विभाग द्वारा महाशीर के संरक्षण के लिए रैंचिंग कार्यक्रम किया जा रहा है। अन्य प्रजातियों जैसे *हेमीबाग्रस पंक्टैटस* (गंभीर रूप से लुप्तप्राय), *साल्मोफैसि बालाची* (असुरक्षित), *ओमपोक पाबो, ओ. बिमाकुलैटस* और *वालैगो अट्टू* (निकट खतरे में) के लिए उचित संरक्षण उपायों को भी तैयार करने की आवश्यकता है।

राम्या वी. एल., जेसना पी. के., अजय साहा, पृथा पणिक्कर, सिबिना मोल. एस., कार्तिकेयन एम. और यु. के. सरकार

जलवायु परिवर्तनशील तकनीक के रूप में भारतीय प्रमुख कार्प के साथ–साथ छोटी देशी मछलियों का पेन पालन

भारतीय प्रमुख कार्प के साथ छोटी देशी मछलियों का पेन क्षेत्र में पालन का प्रदर्शन मोरकोलांग बील, मोरीगांव जिला, असम में किया गया। बील में स्थानीय स्तर पर उपलब्ध बांस स्क्रीन, नेट और एलडीपीई रस्सियों के साथ पेन क्षेत्र बनाया गया स भारतीय मेजर कार्प प्रजातियों, रोहू, कतला और मृगल के साथ–साथ छोटी देशी मछलियों जैसे *एंबिलीफ्रेंजोडोन मोला, गुडूसिया चपरा* और *पुंटियस* एसपीपी का संचयन किया गया । संचयित की गई मछलियों को प्रतिदिन दो बार 5% शरीर भार के अनुसार भोजन दिया गया। भारतीय मेजर कार्प प्रजातियों में सर्दियों के महीनों के दौरान, रोग की स्थिति (जैसे अल्सर) और मृत्यु दर देखी गई थी, हालांकि छोटी देशी मछलियां स्वस्थ थीं और कोई भी मृत्यु नहीं देखी गई थी।

चार महीने के पालन–पोषण के बाद (मई में), मृगल ने अधिकतम वृद्धि (वजन बढ़ने का प्रतिशतः 598.3%) देखा गया, इसके बाद रोहू (408.8%) और कतला (130. 3%) आती हैं अतः यह कहा जा सकता है कि भारतीय प्रमुख कार्प के साथ–साथ छोटी देशी मछलियों का पेन पालन से मछुआरों को अतिरिक्त आय प्राप्त होगी।

बी. के. भट्टाचार्य, डी. देबनाथ, एल. एंगोपाम और यु. के. सरकार

मत्स्य उत्पादन वृद्धि के लिए ओडिशा के एक छोटे उष्णकटिबंधीय जलाशय का पारिस्थितिक मूल्यांकन

किसी भी जलीय प्रणाली की उर्वरता स्थिति प्राथमिक और माध्यमिक उत्पादकों की बहुतायत से परिलक्षित होती है। ओडिशा के आंगुल जिले में स्थित दरजंग एक छोटा जलाशय (530 हेक्टेयर) है जिस पर 150 मछुआरे निर्भर करते हैं। लिंगरा और मटालिया नहरों से इस जलाशय तक पानी पहुंचता हैं। मानसून और मानसून के मौसम के दौरान कुल 16 भौतिक–रासायनिक प्राचलों जैसे गहराई, तापमान, पारदर्शिता, पीएच, डीओ, विशिष्ट चालकता, मुक्त कार्बन डाई ऑक्साइड, टीडीएस, कुल क्षारीयता, कुल कठोरता, Ca++, Mg++, क्लोराइड, नाइट्रेट–एन, फॉस्फेट–पी और सिलिकेट–सी का विश्लेषण किया गया और पाया गया कि अधिकांश प्राचलों का मानसून और मानसून पश्चात् अवधि के बीच गुणवत्ता मापदंडों में अंतर लगभग (पी<0.05) का है। पानी की गहराई और तापमान में कमी और पोषक तत्वों में वृद्धि आदि के लिए प्लवक की प्रचुरता होना चाहिए। इस जलाशय से पादप प्लवक की कुल 63 प्रजातियों और जंतु प्लवक की 26 प्रजातियों की पहचान की गई। अध्ययन की अवधि के दौरान, जलाशय से 28 मछली प्रजातियों तथा अनुमानित उत्पादकता 200 किलोग्राम/हेक्टेयर/वर्ष को दर्ज किया गया।

लियानथूमुलुइया, प्रीति ज्योति माझी, ए. के. बेरा, तसो तायुंग, यु. के. सरकार, मिशाल पी. , जी. कर्नाटक, बी. नस्कर और वाई. अली

पश्चिम बंगाल के चयनित आर्द्रक्षेत्रों में कार्बन सीक्वेस्ट्रेसन क्षमता का आंकलन

आर्द्रक्षेत्रों को ग्रीन हाउस गैसों, विशेष रूप से मीथेन के उत्सर्जन के बावजूद महत्वपूर्ण कार्बन (C) सिंक माना जाता है। देश के विभिन्न भौगोलिक क्षेत्रों में आर्द्रक्षेत्रों के कार्बन सीक्वेस्ट्रेसन क्षमता (सीएसपी) का आकलन और उनकी कार्बन शमन क्षमता का निर्धारणकरते हैं। कार्बन सीक्वेस्ट्रेसन अध्ययन पश्चिम बंगाल के तीन आर्द्रक्षेत्रों में किए गए थे – नदिया जिले में भोमरा बील, उत्तर 24 परगना जिले में मथुरा बील और पूर्वी कोलकाता आर्द्रभूमि में झगरासीया बील।

अलगी बायोमास के आकलन से संकेत मिलता है कि भोमरा और मथुरा के बील की तुलना में झगरासीया में पादप प्लवकों की संख्या बहुत अधिक पाई गयी। आर्द्रभूमि में जलीय मैक्रोफाइट भी सी संचय में एक महत्वपूर्ण भूमिका निभाते हैं क्योंकि मृत पौधों के क्षरण के दौरान, तलछट में पर्याप्त अघुलनशील कार्बोनेस सामग्री जमा और जमा हो जाती है। आर्द्रभूमि के बीच, झगरासीसा में सबसे कम (10%) मैक्रोफाइट पाया जाता है स इसके बाद मथुरा बील (20%) और भोमरा बील (40%) हैं।

एस. के. नाग, यू. के. सरकार, बंदना घोष और बि. के. दास

तेलंगाना में पालेयर जलाशय का अध्ययन

तेलंगाना के मध्यम जलाशय (1500 हेक्टेयर) पालेयर की पारिस्थितिकी, मछली की पैदावार की क्षमता, मछलियों का घनत्व और मत्स्य प्रजाति विविधता पर विस्तृत सर्वेक्षण किया गया। यह सर्वेक्षण मानसून और मानसून पूर्व तथा मानसून पश्चात् के मौसम में भूमि संरचना और जलीय विशेषताओं, मिट्टी और जल की गुणवत्ता, प्राथमिक उत्पादन, मत्स्य आहार संसाधनों की बहुतायता और मछली पकड़ संरचना आदि विषयों पर किया गया। कुल 25 मछली प्रजातियों को विभिन्न जाल आकारों और गिल नेट के द्वारा पकड़ा गया था। जुलाई 2018 के दौरान जलाशय में इंडियन मेजर कार्प, *मैक्रोब्रेकिअम रोजेनबर्गी* और *एम. माल्कोमसोनी* की स्टॉकिंग की जा रही है। वर्ष 2018 में 23 मई को मछली पकड़ने के लिए जलाशय खोला गया था। पहले 15 दिनों के भीतर, 80% मछलियाँ पकड़ी गईं । इस जलाशय में मत्स्य पालन विकास की अपार संभावनाएं हैं ।

साजिना ए., कान्सियल जे., मितेश आर., अजय साहा, जेसना पी. के., मिशाल पी., यू. के. सरकार, बि. के. दास और ए. के. दास

केरल के अन्तर्स्थलीय खुला जल क्षेत्र में में बाढ़ के बाद जलीय परिवर्तन

हाल ही में केरल की नदियों में आई बाढ़ से जलविद्युत विशेषताओं पर विनाशकारी प्रभाव पड़ा है। केरल की चालीस में से चालीस नदियों को भयंकर बाढ़ सा सामना करना पड़ा जिसका कारण 75 दिनों में लगभग 2344 सेमी की मूसलाधार वर्षा। केरल के अन्तर्स्थलीय जल निकायों जैसे झीलों, नदियों और जलाशयों का सर्वेक्षण संस्थान के कोच्चि केंद्र द्वारा किया गया था जिसमें पेरियार नदी में अलुवा और एलोर स्टेशन तथा वेम्बालड लेक में पल्लथुर्थी और मंगलम जलाशय शामिल हैं। नदीय क्षेत्र में पारदर्शिता और गहराई का अनुपात 0.135 – 0.14 था जो अत्यधिक अशांत पानी का संकेत देता है ।

थैंकम थेरेसा पॉल, दीपा सुधीसन, रानी पलानीस्वामी, उषा उन्नीथन और एस. मनोहरन

अन्तर्स्थलीय मछुआरों को केरल बाढ़ के दौरान मत्स्य नुकसान का आंकलन

हाल ही में अगस्त 2018 के दौरान केरल में आई बाढ़ ने बड़े पैमाने पर अन्तर्स्थलीय मात्स्यिकी को सम्पूर्णतः तबाह कर दिया। मछुआरों को उनके गियर, शिल्प, घरों और घरेलू सामानों को नष्ट होने के कारण भारी नुकसान का सामना करना पड़ा। एक सर्वेक्षण से पता चला है कि पेरियारिवर के अलुवा नदी के 92% मछुआरों को व्यावसायिक, गियर और बुनियादी ढाँचे में नुकसान हुआ था और 83% ने दावा किया कि देशी मछलियों की पकड़ में भारी कमी आई है। चावल–मछली की खेती के लिए लोकप्रिय अलाप्पुझा जिले में समुद्र तल से कम ऊंचाई वाले क्षेत्र कुट्टनाड में भी ऐसी ही स्थिति देखी गई। विदेशी मछलियों, *पंगेशियनोडोन हाइपोफथाल्मस, ओरोक्रोमिस मोसबिकस* और *पाइरैक्टस ब्रैकिपोमस* के कुल लैंडिंग में वृद्धि की। पलक्कड़ जलाशयों के मत्स्य प्रबंधकों के अनुसार, अपस्ट्रीम बांधों से पानी के अतिरिक्त निर्वहन के कारण स्टॉक की गई मछलियों से बचने का संकेत मिलता है। राज्य के मत्स्य विभाग का अनुमान है कि नुकसान 29 मीट्रिक टन के बराबर हो सकता है, जिसकी राशि रु.34 लाख होगी।

दीपा सुधीसन, थैंकम थेरेसा पॉल, रानी पलानीस्वामी और एस. मनोहरन

कावेरी नदी के ऊपरी हिस्से में बेनथिक मैक्रोफ्यूना की बहुतायत और विविधता पर बाढ़ का प्रभाव

कर्नाटक में शिवानसमुद्रम और टी. नरसीपुरा में मानसून 2017 और मॉनसून 2018 के दौरान मैक्रोबेंथिक जीवों का कावेरी नदी ने उनकी बहुतायत और उनकी जैव विविधता में परिवर्तन अध्ययन किया गया। मानसून 2017 के दौरान इनकी उपलब्धता 10 no./m² थी जो 2018 में 3 no./m² हो गई स यह उच्च वेग के कारण बहुतायत में भारी गिरावट का संकेत है। जुलाई और अगस्त 2018 की पहली छमाही के दौरान, कावेरी नदी के पूरे क्षेत्र में भारी बाढ़ देखी गई। नदी में तेजी से प्रवाह ने सतह के तलछट को पूरा निकल दिया स बाढ़ का प्रभाव प्रत्येक प्रमुख बेंटिक समूह की प्रजातियों की संख्या पर भी दिखाई दिया, जहां डिप्टेरा और कीटों की प्रजातियां पूरी तरह से गायब हो गईं, जबकि गैस्ट्रोपोड्स में प्रजातियों की संख्या बाढ़ के कारण काफी कम हो गई। बाढ़ के कारण 2017 में 2017 में 35% से 5% तक मैक्रोफाइट की संख्या कम होगयी। मैक्रोफाइट्स से जुड़े हुए जीव जैसे डिप्टरटर, बाइवलेव की अंगुलिकाएँ पूरी तरह से गायब हो गयीं ।

श्रवण के शर्मा, रोशिथ सी. एम., सिबिना.मॉल, आर. के. मन्ना, एम. ई. विजयकुमार, वी. आर. सुरेश और बि. के. दास।

पर्यावरणीय प्रदूषण के कारण प्राकृतिक नदीय क्षेत्र वाली रीता रीता मछली के हीट शॉक प्रोटीन जीन का एक्सप्रेसन पैटर्न

हीट शॉक प्रोटीन की भूमिका अत्यंत ही महत्वपूर्ण होती है। इसलिये इन्हे उपयुक्त जैव सूचक माना जाता है। वर्तमान अध्ययन में एचएसपी जीन (एचएसपी 27, एचएसपी 47, एचएसपी 60, एचएसपी 70, एचएसपी 90) तथा कुछ चानित एचएसपी नियमक जीन का अध्ययन किया गया जिससे प्रदूषित जल में जैव सूचको में परिवर्तन के अनुसार एक्सप्रेसन पैटर्न के लक्षणों का पता लगाना है। वर्तमान अध्ययन में, hsp जीन (hsp27, hsp47, hsp60, hsp70, hsc70 और hsp90) के अभिव्यक्ति विश्लेषण और चयनित hsp विनियामक जीन (हीट शॉक फैक्टर 1, hsf1; हाइपोक्सिया upregulated1, hyou1, एपोप्टोसिस सिग्नल–रेगुलेटिंग किनेज़ 1; ask 1, c JUN N टर्मिनल kinase; jnk) को बायोमार्कर प्रतिक्रियाओं के रूप में उनके अभिव्यक्ति पैटर्न में बदलाव की जांच करने के लिए किया गया था। अध्ययन किए गए hsps के बीच, hsp70 और hsp47 में काफी ऊपर–विनियमित किया गया था और hsp27 को अधिकांश प्रदूषित हिस्सों में काफी कम–विनियमित किया गया था। इसके अलावा, एक hsp70 वैरिएंट (hsp70b, Acc No. KR809708) पीसीआर प्रवर्धन और इम्युनोब्लॉट विश्लेषण (HSP72i) दोनों में दिखाई दिया, जो जैविक प्रदूषकों से अत्यधिक प्रदूषित जल क्षेत्रों की मछलियों में हैं।

प्रदूषित नदी के वातावरण से मछली रीता रीता में पी53 की अभिव्यक्ति पैटर्न और उत्परिवर्तन विश्लेषण

जलीय पर्यावरण जैसे नदियाँ, झीलें आदि अक्सर मानवजनित दूषित पदार्थों की बढ़ती हुई सीमा के अंतिम छोर होते हैं, जिनमें से एक बड़ा हिस्सा संभावित जीनोटॉक्सिक और कार्सिनोजेनिक पदार्थ जैसे कीटनाशक, ज़ेनोबायोटिक और अन्य प्रकार के विषैले तत्व होते हैं। अतः प्रदूषित नदी से एकत्र की गई कैटफ़िश, रीटा रीटा में ट्यूमर एक्सप्रेशर जीन, पी 53 के जीन अभिव्यक्ति पैटर्न और म्यूटेशन में परिवर्तन की जांच करने के लिए वर्तमान अध्ययन किया गया था। *रीटा रीटा* का आंशिक p53 जीन सिक्वेंसिंग किया गया था जो मछलियों, चूहों और मानव के डीएनए बाइंडिंग डोमेन के साथ समानता को दिखाता है स ट्रांसक्रिप्टोमिक विश्लेषण, अधिकांशतः प्रदूषित हिस्सों से एकत्र की गई मछलियों में पी 53 के महत्वपूर्ण विनियमन को दर्शाता है। p53 के अभिव्यक्ति पैटर्न के अनुसार प्राकृतिक नदी के पारिस्थितिकी तंत्र में कई प्रकार के प्रदूषणों का संपर्क p53 को ठीक प्रकार से नहीं दिखाता है।

बी. पी. मोहंती, तंद्रिमा मित्रा और बि के दास

संस्थान द्वारा तिलापिया झील वायरस के लिए डायग्नोस्टिक किट का विकास

संस्थान ने तिलपिया में तिलपिया लेक वायरस के निदान के लिए "CIFRI–TiLV पीसीआर किट" को विकसित किया है। यह किट तीन घंटे में संक्रमित ऊतक के

आरएनए से एक तेज, विशिष्ट और संवेदनशील पहचान प्रणाली द्वारा रोग संक्रमण की पहचान करता है। डॉ. टी. महापात्र, सचिव, डेयर और महानिदेशक, आईसीएआर, ने 22 जून, 2018 को उड़ीसा विश्वविद्यालय के कृषि और प्रौद्योगिकी, भुवनेश्वर में 24 वीं क्षेत्रीय समिति द्वितीय बैठक के दौरान किट का लोकार्पण किया की। श्री सी. राउल, आईएएस, विशेष सचिव, डेयर और सचिव, आईसीएआर; श्री बी. प्रधान, अतिरिक्त सचिव, डेयर एंड एफए, आईसीएआर; डॉ. जे के जेना, उप महानिदेशक (मत्स्य विज्ञान), आईसीएआर और डॉ. बि. के. दास, निदेशक, आईसीएआर–सीआईएफआरआई, बैरकपुर, कोलकाता इस अवसर पर उपस्थित थे ।

समझौता ज्ञापन

ज्ञान और संसाधनों के घनिष्ठ सहयोग और साझाकरण के माध्यम से आपसी लाभ के लिए 06 अप्रैल 2018 को पटना और बिहार पशु विज्ञान विश्वविद्यालय, पटना के बीच एक समझौता ज्ञापन पर हस्ताक्षर किया गया और एकीकृत खेती की विशाल क्षमता का दोहन करने की दिशा में संयुक्त रूप से योगदान दिया गया।

11 अप्रैल 2018 को दो परामर्श परियोजनाओं के लिए संस्थान और मत्स्य निदेशालय, ओडिशा सरकार के बीच एक अन्य समझौता ज्ञापन पर हस्ताक्षर किया गया। पहली परियोजना चिलिका लैगून की परिधि में एक्वाकल्चर क्लस्टर के विकास के लिए डीपीआर तैयार और दूसरी परियोजना एक्वाकल्चर और संस्कृति आधारित मत्स्य पालन की वाणिज्यिक इकाई के लिए तम्पारा के विकास के लिए एक और डीपीआर तैयार करने के लिए किया गया।

संस्थान और राष्ट्रीय मत्स्य विकास बोर्ड, हैदराबाद ने भारत के विभिन्न राज्यों केआर्द्रक्षेत्रों और जलाशयों में संस्थान द्वारा विकसित पिंजरे में मछली पालन तकनीक को लोकप्रिय बनाने के लिए 02 मई 2018 को एक समझौता ज्ञापन पर हस्ताक्षर किया गया

गंगा में मछली के स्टॉक के पुनरुत्थान के लिए रैंचिंग कार्यक्रम

गंगा नदी की बहुमूल्य मत्स्य प्रजातियां जैसे रोहु (लेबीओ रोहिता), कैटला (कटला कटला), मृगेल (सिरहिनस म्रिगला) और कालबासु (लेबीओ कालबासु), जिन्हें आमतौर पर भारतीय मेजर कार्प्स (आईएमसी) के रूप में जाना जाता है, की कुल वार्षिक पकड़ संख्या में (43.50%) से कुछ वर्षों से तेजी से गिरावट देखने को मिल रही है। इस प्रकार, गंगा की इन अत्यधिक मांग और पारिस्थितिक रूप से महत्वपूर्ण मछलियों को फिर से पुनरुत्थान करने की नितांत आवश्यकता है। इस संदर्भ में, संस्थान लगातार आईएमसी बीजों के स्टॉक को फिर से नदी में डालने के लिए प्रयास कर रहा है। सिफरी–नमामि गंगे परियोजना के तहत 05 सितंबर 2018 को बारेंद्रपाराघाट, हावड़ा, पश्चिम बंगाल में मछली पालन–सह–जागरूकता अभियान का आयोजन किया गया। रोहू,कटला, मृगल और कैलाबसु की कुल 5 लाख बीजों को नदी में छोड़ा गया। गंगा नदी में मछली की जैव विविधता में गिरावट के संबंध में मछुआरों के बारे में जागरूकता और संवेदनशीलता कार्यक्रम भी आयोजित किया गया। इस अवसर पर संस्थान के निदेशक डॉ बि के दास; स्वामी आत्मप्रियायनंदजी महाराज, कुलपति, रामकृष्ण मिशन विवेकानंद शैक्षिक और अनुसंधान संस्थान, बेलूर; स्वामी गिरशानंदजी महाराज, प्रबंधक, रामकृष्णमाथा और रामकृष्ण मिशन, बेलूर मठ, और स्थानीय पार्षद उपस्थित थे।

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Chilika lagoon possesses 20% of India's seagrass

Seagrass plays a vital role in oxygen production and absorption of carbon dioxide thereby acts as a purifier in aquatic ecology. According to the Chilika Development Authority, in the Chilika lagoon Seagrass was distributed over an estimated area of 152 sq. km in 2018, an increase from 135 sq km in the last year. The findings are reported in daily "The Hindu". As per the report the lagoon possesses 20% of India's seagrass distribution which provides nursery habitat to important fish species.

FISH FACT