# fish for the future 2017

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Fish for the Future is a series of calendars celebrating the Lakshadweep Islands and their unique, traditional pole and line tuna fishery, and highlighting community efforts in monitoring their fishery resources. This year's edition emphasizes the need to ensure the sustainability of fisheries in order to protect the oceans as well as the millions of livelihoods dependent on them. The boats showcased in this calendar have actively participated in Dakshin Foundation's on-going community-based fisheries monitoring programme in Agatti, Kadmat, Kavaratti and Minicoy in the Lakshadweep Islands.



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# **JANUARY 2017**



New Year's Day\* Republic Day\*\*

Oceans have always played an important role in human life. Early humans' search for food led them to the oceans. Primitive fishing was done using pieces of bones as hooks and lengths of vine as line and then progressed to other simple implements such as spears and nets. Historically, oceans have provided plentiful resources, opportunities for trade and commerce, adventure and discovery. More than half of the oxygen in the atmosphere is produced in the oceans by microscopic plants called phytoplankton. They also absorb and store atmospheric carbon dioxide.



FEBRUART 2017						
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FEDDULADV 2047

4 million fishers in 37.9 million India<sup>2</sup> livelihoods worldwide Total global 87% 13% fish production Used for human consumption<sup>1</sup> Used for other applications<sup>1</sup> Fish oil Fish meal 10 mill Pharmaceuticals Ornamental fisheries

**ROLE OF FISHERIES IN LIVELIHOODS AND FOOD SECURITY** 

Mahashivrathri\*

Fish are by far the most significant oceanic resource exploited by humans. Today, the fisheries sector provides sustenance, generates income and alleviates poverty for many communities. Being excellent sources of animal protein and other essential nutrients, fish also play a significant role in ensuring food and nutritional security, especially for coastal populations.



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**MARCH 2017** 





The global human population is growing by approximately 83 million annually<sup>1</sup>. This has lead to an increase in the demand for fish, putting more pressure on fish stocks. Better technology enables greater fish catch in lesser time, exacerbating the situation. Rising demands have led to increased competition among fishers leading to a scenario where too many boats are chasing too few fish.



# **APRIL 2017**

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**IMPACTS OF FISHING - CHOICE OF METHOD** 





# **MAY 2017**

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**IMPACTS OF FISHING - CHOICE OF TARGET SPECIES** 



May Day\* Buddha Purnima\*\*

Top predators such as bluefin tuna, sharks and groupers have high commercial value. These fish maintain a balance in the ecosystem by regulating the numbers of other species. Being slow-growing and late-maturing, their intensive removal can quickly deplete their stocks and cause ecological imbalances. Hence, the biology and ecological role of target species must be considered in fisheries planning.



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**IUNE 2017** 

### **EXAMPLES OF OVERFISHING - LESSONS TO LEARN**



Eid-ul-Fitr

Large-scale, unregulated and indiscriminate fishing has depleted fish stocks around the world and has therefore affected the many livelihoods that were dependent on them. According to the UN-FAO's estimate, nearly 31.4% of global fish stocks are overfished. This means that the proportion of fish caught is so high that not enough remain to naturally breed and sustain the population. Overfishing has led to the collapse of several fisheries across the world and threatens many others.

**Source:** 1. Commission for Conservation of the Southern Bluefin Tuna (CCSBT), 2010. 2. Ransom A. Myers; Jeffrey A. Hutchings; Nicholas J. Barrowman (1997).



JULY 2017								
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### WHAT MAKES A FISHERY SUSTAINABLE?



Fishing is one of the most prolonged and extensive human interventions in the ocean. It is essential to ensure that fishing activities are sustainable in order to preserve the balance of the oceans and to protect the livelihoods that depend on them. A sustainable fishery is one where exploitation levels are optimal and do not cross a critical threshold, and cause minimal damage to the ecosystem.



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**AUGUST 2017** 

POLE AND LINE TUNA FISHERY OF LAKSHADWEEP – A SUSTAINABLE FISHERY



Independence Day\* Ganesh Chaturthi \*\*



Lakshadweep's traditional pole and line tuna fishery is an important source of livelihood for the islanders. It utilizes small baitfish from island reefs and lagoons to capture the fast-growing oceanic skipjack tuna in a selective and lowimpact manner. It is one of the last remaining examples of a sustainable fishery in India and has thus generated interest in scientific community which is keen on promoting and preserving this unique, bestpractice fishing technique.



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**SEPTEMBER 2017** 



### LIMITING FACTORS IN LAKSHADWEEP FISHERIES

Eid-ul-Adha (Bakrid)\* Thiru Onam \*\* Dussehra \*\*\*

To promote Lakshadweep's pole and line tuna fishery, research and management must focus on addressing the major issues affecting the fishery which include declining numbers of baitfish, high operational costs and lack of cold storage Geographical infrastructure. isolation often leads to interrupted supply of diesel, difficulty in obtaining engine spare parts, poor access to larger markets and stagnating prices for masmin - Lakshadweep's indigenously processed dried tuna product.



	Parameters monitored	
Economic	Ecological	Social
	2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Individual researcher	Institutions	Fishing community
	Who can monitor?	

**FISHERIES MONITORING - WHAT AND WHO?** 

# **OCTOBER 2017**

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Muharram\* Gandhi Jayanti\*\* Deepavali\*\*\*

Efficient monitoring is the first step towards the sustainable management of a fishery. Monitoring involves gathering data on ecological, social and economic aspects of the fishery as well as information about fishers, fishing craft and gear. Long-term monitoring helps understand how complex systems such as oceans change over time and can contribute to effective policy making and planning.



# **NOVEMBER 2017**

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**BENEFITS OF COMMUNITY-BASED MONITORING** 



Guru Nanak Jayanti\*



Local fishing communities rely on the ocean for their livelihood and survival, and interface with the ocean on a daily basis. Therefore, involving them in fisheries monitoring offers a platform for regular, large-scale and long-term monitoring of fishery dynamics. Communitybased fisheries monitoring also provides scope for the integration of data with the traditional knowledge of the communities.













# **DECEMBER 2017**

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Dakshin Foundation's community-based fisheries monitoring programme in Lakshadweep involves members of the local fishing community in regular and voluntary monitoring of their pole and line fishery. Participating fishers say that detailed record-keeping helps them plan fishing trips better, and understand patterns in baitfish availability, diesel consumption and catch locations over time. This data can also aid fishery improvement plans and certification programmes such as those by the Marine Stewardship Council (currently being advocated by WWF), which can in turn open foreign markets and enable higher price premiums for this fishery.

Eid-e-Milad\* Christmas Day\*\*

Dakshin Foundation is a non-profit, non-governmental organization that works towards natural resource conservation and management through approaches that are based on sound science and support sustainable livelihoods, social and environmental justice. In Lakshadweep, our work aims to fill data gaps while empowering local communities in natural resource monitoring. By encouraging stakeholder participation we hope to increase stewardship as well as provide a platform for policy-making and management.

Dakshin Foundation's community-based fisheries monitoring programme in Lakshadweep began in January 2014 with the objective of involving the local fishermen in knowledge generation and management. The larger aim of the programme is to strengthen the pole and line fishery to ensure sustainable livelihoods while preserving marine biodiversity. The program is adapted from time to time to meet the requirements of the community.

Our work in the Lakshadweep Islands is possible thanks to the support of the Lakshadweep Administration, Department of Science and Technology, Department of Fisheries, Department of Environment and Forests and LMRCC (Lakshadweep Marine Research and Conservation Centre). We would also like to thank the Lakshadweep fishing community, in particular the fisheries unions and the individuals in these islands who make this work possible.

World Wide Fund for Nature (WWF) is a non-governmental organization with a vision to build a future in which humans live in harmony with nature by conserving the world's biological diversity, ensure sustainable use of its resources and promote reduction of pollution and wasteful consumption. In order to achieve these goals, the organization works in close association with multiple stakeholders across different sections of the society. Our strength lies in environmental governance through legislation, policy and advocacy.

The Ocean & Coast programme of WWF-India aims at conserving India's marine and coastal biodiversity and manages its resources to enhance ecosystem resilience as well as ensure sustainable livelihoods. In Lakshadweep, WWF has collaborated with the Lakshadweep Administration and Fisheries Department to strengthen and sustain the Lakshadweep Pole & Line Fishery via seafood certification and market improvements to promote sustainable fisheries that will benefit livelihoods as well as long-term ecological security of the Islands.

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