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# Fighting forest fires with a plan and community cooperation

The Forest department has undertaken a process of knowledge-sharing with people who live on the periphery of Kerala's jungles, while a volunteer group is actively helping prevent wildfires. The Hindu travels to Palakkad district to understand the means employed to counter the danger

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The forest staff across the state are on alert with the onslaught of summer, with temperatures reaching as high as 40-41 degrees Centigrade, unusual for this time. Kerala's 11,524.14 sq km forest cover occupies 29.65% of the land dominated by deciduous and semi-deciduous woods. They are drying up, especially on the forest periphery.



Forest staff in Malampuzha clearing the biomass by resorting to controlled early burning as part of their drive to prevent forest fires in March.

Kerala has reported 163 wildfire incidents since January this year in which 230 hectares of forest have burnt. This is, however, much less than the fires reported in the previous years. Around this time last year, there were more than 300 forest fires in the State; 600 hectares were burnt. According to Global Forest Watch, an open-source web application that monitors global forests in near real-time, there were 97 VIIRS (Visible Infrared Imaging Radiometer Suit) fire alerts in Kerala between March 15 and 22 this year, and only 5.2% of them were high-confidence alerts, foresters' jargon for serious alerts. Global Forest Watch data says that fires were responsible for 0.33% forest cover loss in Kerala between 2001 and 2022.

### Detailed preparedness

Taking lessons from the fires that ravaged forest covers in previous years, meticulous fire management plans have been made at the block level within each forest range. "Our requirement is at least ₹6 crore for this season. But we are managing with the ₹3 crore that we got," says K. Vijayanathan, Chief Conservator of Forests (CCF), Eastern Circle that covers Nenmara, Palakkad, Mannarkkad, Nilambur South, and Nilambur North forest divisions.

The preparedness against wildfires includes removal of biomass cover, often through controlled or prescribed burning, taking 5.2-metre-wide fire-lines or fire-belts in areas where people have access, engaging fire watchers on a temporary basis, desilting of water sources within the forest, and procuring fire safety equipment. "Biomass removal or fuel load reduction is the key to forest fire prevention. We start doing it from December," says Vijayanathan.

Sporadic groundfires often help prevent large fires because they clear the accumulation of biomass. “Once it is burned or cleared, then it is very difficult for another immediate fire there. That’s why sometimes fire experts say small fires are a blessing,” says Vijayananthan.

It takes about 20 people to make a 1 kilometre fire-belt or fire-line, a preventive early-burning measure to avoid future fires. The standard width of a fire-belt is 5.2 metres as a normal ground-fire tends not to cross this burned area. In the Palakkad forest division, which caters to Ottapalam, Olavakkode, and Walayar ranges, a 25-km-long fire-line has been taken. Palakkad Divisional Forest Officer (DFO) Joseph Thomas says the next three weeks will be crucial and they will be on enhanced vigil. Depending on the vulnerability of the areas and the fire plans of each block, fire watchers are appointed for daily wages during summer. Twelve fire watchers are currently on duty in Olavakkode forest range headed by Imrose Elias Navas. But the needs and plans are different for other forest ranges.

In Mannarkkad range, which had witnessed several fires until 2022, the conservation volunteer concept has made an impact. “We have a 100-odd group of volunteers who are ready to assist us in tackling forest fires anytime, anywhere. We even sent them to Thrissur when a fire was reported there recently,” says Mannarkkad Range Forest Officer N. Subair. He believes they were able to ensure a zero-fire year in 2023 in several sensitive areas because of sensitising the people living on forest fringes.

Subair says increased drone surveillance has had effective results in preventing forest fires. “When people realise that they are being monitored inside the forest, they are cautious. It is a wonderful deterrent,” says Subair. As part of sensitising people, forest authorities conducted football tournaments and bicycle rallies. “Taking people into confidence is very important,” says Vijayananthan.

Unni says the drone experiment in some sensitive areas has had its result. “We flew the drones in Attappady seven times,” he says. Showing people high-resolution videos and still images from the drone cameras, of people inside the forest convinced those living on forest fringes as well as tribespeople living inside the jungle about their vulnerability of being caught for carelessness.

## People’s involvement

The satellite-based fire alert system offered by the Forest Survey of India (FSI) has made it easy for the forest staff to get to know of any fires inside the forest. But fighting forest fires, especially in rocky terrains, is a challenge. Inside the forest, the staff do not depend on the Fire and Rescue Services that use water to douse flames. Instead, they depend on methods like beating the fire with green, leafy boughs; and counter-fires. When a wildfire advances, forest staff set fire to the area in front of it, and the blaze is extinguished as both the fires meet. The personnel fighting wildfires invariably carry fire beaters and blowers with them. “Blowers are very effective in clearing the dry leaves and other fuel load,” says Subair.

Sadik P.Y., watcher attached to Palakkayam forest station, had a tough time when he set out to fight a fire inside the forest on March 15. It took about three hours for Sadik’s dozen-odd group to reach the fire because of the steep terrain. “Reaching the spot is often tougher than fighting the fire. On learning about the fire incident, we started around 2.30 p.m. and reached there by 6 p.m. As the fire was raging, we created a boundary by clearing the undergrowth and the debris. We controlled the fire by 11 p.m., but could not return from the forest that night,” says Sadik, describing his latest firefighting experience. Sadik had to skip his Ramzan fasting the next day.

Most incidents reported in Kerala are ground-fires, where grass, dry leaves, and undergrowth burn due to the heat. Crown fires rarely happen because of the deciduous nature of the forests. In areas where fires happen frequently, trees are found to be fire hardy. Besides, trees with oil content that can fuel fires are rare in Kerala forests.

Reptiles and rodents are most vulnerable to groundfires. When larger animals find their escape routes, reptiles like snakes get caught in the burning dry leaves on the ground. “Animal casualties are not very common in forest fires that we fight. However, we often find burned snakes,” says a forest guard, requesting anonymity.

The biggest fire the State witnessed in recent years was at Parambikulam Tiger Reserve, where 200 hectares were lost in March 2017. It took several days for the Forest Department to bring the blaze under control, despite Indian Air Force choppers using heli-buckets to douse the fire. “The fire went out of control because of the gregarious flowering of bamboo clumps at that time. The dry bamboo clumps gave us a crown fire then,” says Vijayananthan.

Better awareness among farmers living on forest fringes has considerably brought down fire incidents. Some farmers who used to graze their cattle in grasslands within the forest would burn the grass for better growth the next year. There were incidents of forest fires breaking out from them. “Cattle grazing inside the forests has reduced now. We have been telling people that forest fires can dry up streams that bring water for some villages,” says Fr. Saji Joseph, vicar of the Ponkandam parish near Mangalam Dam in Palakkad district and a patron of the Karshaka Samrakshana Samiti. Fr. Joseph’s efforts recently helped Ponkandam to be the first net-zero parish in the country.

## Accolades and success

P. Muhammed Shabab, Chief Conservator of Forests (Wildlife), Palakkad, says that more than 90% of the forest fires are artificial. However, he says 100% reporting is achieved because of the high alertness of the forest staff and those who help them.

Unni and his volunteer group have won accolades for their conservation efforts. Last year, he received the government's award from the Forest Minister and the Green Project Award of the Thrissur Management Association. "We could work so effectively and with so much pride because of the trust placed on us as well as the wonderful guidance by the RFO," he says.

Most members of the volunteer group are social workers involved in other humanitarian activities, including trauma care. They have undergone training in disaster management as well as basic life support. During a recent training in fire management, they took a pledge not only to fight forest fires, but also to prevent them. Leading the training session, Nazar P., Fire and Rescue Services assistant station officer at Mannarkkad, warned them of the huge consequences if forest fires are allowed to last for days and weeks. "Out of 500-odd fire calls our station gets a year, about 400 are in February-March-April. So be on your guard now," he told them. Advising them to use personal protective gear available, including gumboots and masks, Nazar said that people living in forest fringes should be prevented from resorting to fireworks during the summer. "No one should be allowed to enter the forest in these months," he said.



The Mahashivratri festival at Malleswaram Mudi in Attappady was incident-free this year largely because of the awareness created by the Forest Department and the volunteer corps. In the previous years, the Attappady festival used to be a trigger for forest fires as the tribespeople returning home with burning torches would leave some sparks in the dry grass, thus accidentally igniting fires. “Last year, we had a tough situation in Attappady as it caused several forest fires. But this time, the situation was different because we sensitised the people there,” says Vijayananthan.

Parallel to preventing and fighting forest fires, Unni and team have been involved in an eco-restoration and afforestation drive. They threw 12,400 seed balls in different parts of the forests. “We did it systematically. From collecting quality seeds of different trees suitable for the forest to preparing the balls and dispersing them at an apt time within the forest was not easy. But it was heartening to see a large number of jamun, wild mango, palmyra palm, neem, and jackfruit trees growing in the forest,” says Unni.

