

Phone (033) 2335-7751/8581/8755,
Fax (033) 2335-8756



e.mail : pccfhoff.office-wb@gov.in
Visit us at : www.westbengalforest.in

Government of West Bengal
DIRECTORATE OF FORESTS
Office of the Principal Chief Conservator of Forests
& Head of Forest Force, West Bengal
Aranya Bhawan, Block LA-10A, Sector-III,
Salt Lake City, Kolkata-700 106.



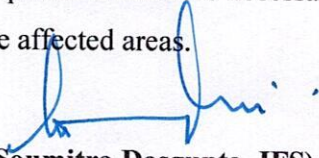
Office Order No. 04/CS/2023

Dated : 23/03/2023

**Sub: Standard Operating Protocol to Prevent, Suppress and Manage
Forest Fires in West Bengal-reg**

Whereas, West Bengal is bestowed with abundant and biodiversity rich forests and whereas considerable portion of forests in the State are deciduous in nature and are threatened by forest fires annually. Forest fires not only result in loss of flora, fauna and biodiversity, but also will lead to soil erosion, in addition release carbon to already polluted air. Detection, prevention, suppression and post forest fire management are important steps in mitigating the forest fires and thus ensuring protection and conservation of Forests and wildlife.

In order to ensure timely action and uniformity, a Standard Operating Protocol (SOP) is developed to address forest fires in West Bengal. This will identify specific activities that the field units are expected to provide and the standards which must be met in managing forest fires. Divisional units are requested to refer to the protocol and take necessary steps in prevention, suppression of forest fires and in restoring the affected areas.


(Soumitra Dasgupta, IFS)
Principal Chief Conservator of Forests &
Head of Forest Force, West Bengal.

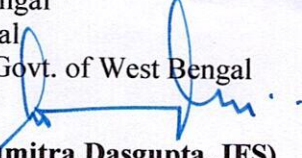
Encl.: Copy of Standard Operating (SOP) protocol
to Prevent, Suppress and Manage Forest Fires

No: 13595/CS/2M-1504

Date: 23/03/2023

Copy forwarded for information, to :

1. PS to Minister-in-Charge, Forests, Govt. of West Bengal
2. PS to Minister of State, Forests, Govt. of West Bengal
3. Additional Chief Secretary, Department of Forests, Govt. of West Bengal


(Soumitra Dasgupta, IFS)
Principal Chief Conservator of Forests &
Head of Forest Force, West Bengal.

Contd....P/2

No: 261/2M-52

Date: 23 /03/2023

Copy for information and necessary action, to :

1. Principal Chief Conservator of Forests, Wildlife & Chief Wildlife Warden, West Bengal
2. Principal Chief Conservator of Forests, General, West Bengal
3. Principal Chief Conservator of Forests, Research, Monitoring & Development, WB
4. Principal Chief Conservator of Forests, CAMPA, West Bengal
5. All Addl. Principal Chief Conservator of Forests, W.B.
6. All Chief Conservator of Forests, W.B.
7. All Conservator of Forests, W.B.
8. All Field Directors, W.B.
9. Jt. Director, SBR, W.B.
10. All DFOs/DFDs, W.B.



(Bhaskar J. V., IFS)
Conservator of Forests
Working Plan & GIS

Standard Operating Protocol to Prevent, Suppress and Manage Forest Fires in West Bengal

Introduction

Forest fires are regular in subtropical regions of the country and cause considerable damage to forests both quantitatively and qualitatively. West Bengal is having recorded forest area of 11883.75sq km. The forest area constitutes 13.38 % geographical area. Varied type of forest is found in the state starting from Sub alpine forests to Mangroves. Considerable portion of East Himalayan Sal, Northern dry Mixed deciduous forests and dry peninsular Sal and teak forests are prone to high intensity forest fires. As per the assessment of FSI around 9-10 % of forest area of the state is highly prone to forest fires. *The fire season usually starts from the Month of November and lasts till May end in the state.* Several executive orders, working Plan prescriptions, management plans and Tiger Conservation plan prescriptions provide the basic guidelines to field units in managing forest fires. However, the Standard operating protocol will assist field level units with comprehensive directions in preparing, handling the forest fires and post forest fire management effectively.

This protocol is intended to be a means for providing oversight of the management of forest fire operations for the West Bengal forests. The protocol will identify specific activities that the field units are expected to provide and the standards which must be met in managing forest fires. This will also will define roles, responsibilities, and operational procedures for the Divisional units, Range units and firefighting teams.

Goals

1. To provide safe, cost-effective mobilization of resources to divisions witnessing frequent forest fire incidents.
2. To promote efficient forest fire fighting operations through inter-departmental cooperation and standardized protocols.
3. To emphasize safety of Staff, JFMC members, firefighting teams, public and firefighter safety in all aspects of operations.
4. To identify priority areas according to criteria, vulnerability, weather parameters and allocate resources accordingly.
5. To protect human life and wildlife life and minimize damage to biodiversity.
6. To recognize inter departmental coordination, specific roles and requirements on forest fire emergencies, special equipment requests and skills etc.

7. To provide timely communications on information and decisions that affect the ability of divisional units, Range units and field units in forest fire management.
8. Involvement of SDMA, NDMA and other agencies depending on the gravity of forest fires.

Pre fire season Activities:

- i. Field units like Divisions, Ranges and Beats should prepare the check list of firefighting equipment available and keep the equipment like fire blowers, rakes, shovels, fire extinguishers, water sprayers, fire resistant helmets, shoes and gloves in full readiness. Additional equipment required should be procured before the onset of fire season.
- ii. Extensive awareness programmes should be conducted to educate the society, people living in and around the forests, visitors, tourists etc. including the legal implication.
- iii. Workshops and trainings should be conducted for field staff, JFMC members and other department personal in firefighting, use of firefighting equipment and safety protocols etc.
- iv. Emergency communication details such as contact numbers of nearest Fire tender, Police station, Revenue administration and hospitals should be available with Beat, Range and other such firefighting field units.
- v. All the water tanks in Ranges, Beats, timber depots should be inspected and kept in readiness. Water refilling points for fire tenders should be identified and see to it that the communications to such places is available.
- vi. A preordination meeting with departments involved in forest fire prevention and management should be conducted, before the fire season.
- vii. Special awareness campaigns should be taken up against targeted groups such as cattle graziers, NTFP collectors, tourists, visitors and forest fringe people.
- viii. All the communication channels such as wireless network, Mobile phone etc should be checked and kept in readiness.
- ix. First aid Kit should be maintained in the Ranges and Beats.
- x. Annual Plan of operations for forest fire schemes shall be prepared well in advance by the Divisions. The activities proposed should reflect the efficacy of reducing the fire and enhance the ability of field units in tackling the forest fire effectively. APO should be based on the fire vulnerability index and fire prone mapping and as per actual field requirements. Funds from others schemes such as CAMPA, State Plan should also be sought in addition

of CSS IFM schemes. APO should be sent to MoEF&CC, by April of every year so as to ensure timely release of funds. APOs of other scheme also should be submitted well within the prescribed time.

Forest Fire Prevention: Fire prevention is the first step towards effectively managing the forest fires. The following activities should be carried out by the field units before the fire season peaks.

Mapping of fire prone zones: The entire forest should be mapped according to the vulnerability index to forest fires based on previous fire incidents, weather parameters and forest types. The fire vulnerability maps should demarcate the highly vulnerable forest ranges and beats and same should be communicated to field units before the start of the season. The resource allocation, preparation of APO should be based on the fire vulnerability. Highly vulnerable divisions should be allocated with more resources to deal with any impending contingency.

CONTROL BURNING: Controlled burning, also known as prescribed burning, involves setting planned fires to reduce the fuel load and also to create fire breaks. All the divisions should undertake control burning by collecting the dry mass of leaves, twigs dead grass, fallen tree branches etc to the centre and burn them to create fire breaks. This should be done all long the major roads, fire lines, compartment boundaries, village boundaries etc. This activity should start from November and should be completed by January of every year by all the field units. Fire blowers should be extensively used to blow the biomass to centre and burnt. The weather conditions should be taken into account to ensure fire doesn't to spread to other areas.

Reduction of forest floor biomass: One of the major reasons for forest fires is the availability of abundant dry biomass in the form of dry leaves, fallen twigs, and grasses on the forest floor especially in deciduous forests. The fuel load has to be reduced through control burning, by encouraging JFMC members to collect the dry biomass for their use. Alternate Use of forest floor biomass shall be encouraged among JFMC members for compost making, vermicompost, manure etc. JFMCs be encouraged to collect dry fallen twigs as fire wood.

Fire lines: All the fire lines in the divisions must be cleared and maintained before the onset of fire season. Control burning of fire lines shall be undertaken wherever necessary. Fire lines in and around plantations should be created and the ones which are under maintenance should be completed well in time. Wherever new fire lines are required they should be

proposed in CSS-IFM, CAMPA and State plan schemes and should be created and upgraded at periodic intervals.

Management of Weeds: Weeds such as Eupatorium in South Bengal act as major fuel load and acts as fuel to forest fires. The fuel load in the form of weeds should be reduced by control burning, weed removal, weed eradication programmes.

Soil Moisture Conservation: Extensive Soil moisture conservation works such as earthen dams, check dams, Rock check dams, contour trenches etc. should be proposed in high risk and high fire prone areas and constructed. This will not only provide water for firefighting teams but also will improve the moisture regime of the area.

Awareness Generation: 99 percent of forest fires are anthropogenic in nature. Some fires are intentionally lit by cattle graziers for promoting growth of fresh grass for their cattle and NTFP collectors to ensure ease of NTFP collection like Mahua seeds etc. Extensive awareness programmes and workshops should be conducted by targeting the groups responsible for forest fires. Society and villagers should be educated about the ill effects of forest fire and negative impact on their health. If any person is found to kindling forest fire, such persons should be apprehended and legal action as per the IFA 1927 and WLPA 1972 (as amended) shall be taken.

Formation of District level Committee for Forest Fire Management

A district level committee shall be formed to guide and oversee the forest fire management. The committee shall be headed by Chief Conservator of Forests or Conservator of Forest whosoever is in charge of the circle.

The committee may consist of:

- 1) All the Divisional Forest Officers in the district,
- 2) Representative of District Magistrate not below the Rank of (ADM/SDO)
- 3) Representatives of District Police (Not below the rank of ADSP or SDPO)
- 4) Ban o Bhumi Sthayee Samiti Karmadhyakka,
- 5) Honorary Wildlife wardens of the district
- 6) Representative of NGOs operating in the district as recommended by the divisional Forest officers
- 7) Representatives of Fire Department
- 8) Representative of Health Department (CMOH/Asst CMOH)

9) Representative of District Disaster Management authority.

Functions of the committee:

- To ensure the adequate preparedness of the agencies involved in Forest fire management.
- To ensure and establish coordination among inter departments for effective participation in mitigating the forest fires wherever and whenever called upon to do so.
- Conduct mass awareness programmes for targeted groups to reduce the forest fire incidents
- To coordinate with state level authorities and National level authorities whenever the assessment on the ground suggests their requirement.
- To seek assistance of SDMA, NDMA and armed forces whenever the situation demands.

FIRE DETECTION:

Fire Watch towers: All the existing watch towers in the division shall be maintained, utilised and provided with forest fire watchers during the fire season to ensure early detection of fires. Wherever new watch towers are required same should be proposed in the APOs.

Early warning: Forest Survey of India, with years of experience with the repository of fire related data, developed an indigenous "Early Warning Alert System for Forest Fire". The alerts to State Forest departments are based on parameters like Forest Cover, Forest Type, Climatic Variables (Temperature and Rainfall) and recent fire incidences over the area. The GIS layers of these parameters are overlaid and intersect areas above threshold values are chosen and communicated as pre warning forest fire alerts in the form of KML files through email to the nodal officer of the State Forest Departments. These warning are communicated to divisions through email and divisions upon receipt of prewarning shall take necessary preventive steps in the locations specified.

Forest Fire Alerts: Forest fire portal of Forest Survey of India provides SMS alerts based on satellite data (MODIS and SNPP VIRS) on near real time detection of active forest fires. Divisions shall register as many numbers of staff as possible in the FSI fire portal to receive SMS alerts on the registered mobile numbers. Efforts should also be made to include as many numbers of JFMC members, Panchayat Raj institution authorities, Revenue, Police and District administration authorities responsible for disasters etc. shall be registered on the portal to receive forest fire alerts.

Ground based detection: Divisions should intensify the patrolling in fire prone area during the peak fire season (Jan to May). They should also engage fire watchers and place them strategically. JFMC members should be asked to assist Ranges and Beats in early detection of any fire incidents.

Fire Suppression and Management:

Once the forest fire has been reported either by fire watchers, JFMC members or through FSI fire alert system, print and electronic media or any other sources, the following protocol shall be followed.

- Fire control teams along with equipment from nearest Beats, or Ranges should be immediately dispatched to the location of fire.
- If additional man power is required same should be sourced from nearest JFMCs.
- Efforts should be made to prevent the spread of fire to other areas and contain it to as small area as possible.
- If the fire is in the vicinity of village and there are chances of its spread to human habitations and property, then District administration, Police administration and Fire departments should be informed immediately.
- Once the fire is controlled it should be communicated to Divisional Forest officer.
- If the fire cannot be controlled and contained, additional manpower from neighbouring Beats, Ranges and if necessary, from neighbouring divisions should be sought and same should be arranged by neighbouring Beats, Ranges and Divisions.
- Quick assessment of requirement of fire tender in controlling the fires is to be done and same should be communicated to Fire Department authorities in the district.
- District level committee should monitor all the large forest fires and forest fires which are active beyond 24 hrs. It should assess the situation and demand the help of District Disaster Management Authorities and State Disaster Management Authority depending on the gravity of the situation. If the fire continues, help from the Disaster management cell of the MOEFCC can be sought.

Post Fire Management

Online feedback: Forest fire portal of Forest Survey of India provides SMS alert to registered users on forest fire incidents. There is also a system of providing online feedback that can be provided along with SMS alert confirming the forest fire and action taken

thereof and losses if any. All the forest fire alerts received through the portal shall be provided with feedback by field units. The similar feedback should be updated in monthly MIS module of the Forest Directorate.

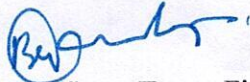
Restoration of fire affected areas: Divisional Forest officer should assess the damage caused by forest fires and submit a report to Circle in charge. If considerable damage to flora has taken place, the Division shall take up suitable actions to restore the area through appropriate schemes. If Plantation areas are damaged, the extent of damaged area has to be reafforested in the ensuing financial year. Soil moisture conservation works should be taken up in the affected areas to increase the moisture regime of the location. Replanting of the area with local species of plant/grasses (for small fauna) should be given priority.

Evaluation of Losses: Range officer after every fire incident must inspect the fire affected area and assess the loss in-terms of flora, fauna and biodiversity. Range officers shall submit a report to Divisional Forest officer within a week. All the losses estimated by Range officer shall be reviewed by ADFO and final loss report authenticated by Divisional Forest officer shall be submitted to PCCF & HoFF Office.

Monitoring of Fire affected area: During the fire season or once it is over, the fire affected areas shall be monitored for the impact of forest fire on Flora, fauna, biodiversity, soil and such other areas as deemed necessary by Research and Monitoring wing of Forest Directorate and should come up with suitable remedial measures. Such remedial measures should be communicated to territorial and wildlife divisions for necessary rehabilitation and restoration of fire affected areas.

REVIEW: The Fire Management SOP is to be reviewed every 3 years or earlier if:

- There is an identified risk to fire management strategy.
- A significant safety or unplanned fire occurs that caused immense damage.
- There are changes in policy or related legislation regarding Forest fire management.


Nodal officer, (Forest Fire)
&
Conservator of Forests,
Working Plan and GIS