

Appendix I

(Reference: Paragraph No. 2.5.3.2)

Status of maintenance of Control Forms/ PA and Range Books/ Compartment History (July to October 2021)

1 and 2: Balaram Ambaji and Jessore		
Control Forms	PA and Range Books	Compartment History
Though prescribed in the previous Management Plan ¹ of Balaram Ambaji sanctuary, the new Management Plans for the period 2021-22 to 2030-31 for both the Sanctuaries under the jurisdiction of same Division did not have the provision of maintaining control forms. Although the 'contents' portion of the management plans stated that Appendix XXIII contained the control forms, no such Appendix formed part of the approved Management Plans. This was indicative of lack of proper scrutiny before approval of the Management Plans.	The new management plans did not have the provision of maintenance of PA and Range Books.	The new management plans did not provide for maintenance of compartment history.
3: Jambughoda		
Control Forms	PA and Range Books	Compartment History
The format of control forms was prescribed in the Management Plan.	Provided for maintenance of PA and Range Books.	Provided for maintenance of compartment history without prescribing any formats.
4: Ratanmahal		
Control Forms	PA and Range Books	Compartment History
Though stipulated for maintenance of control forms in the existing formats prescribed under the working plan code with suitable modification, no precise formats were approved subsequently. Incidentally, the format of control forms was prescribed in the Management Plan for Jambughoda sanctuary which falls under the jurisdictional control of the same Division/ Circle Office. Thus, the two Sanctuaries under the jurisdiction of same authorities were being managed differently.	Provided for maintenance of PA and Range Books.	Did not provide for maintenance of compartment history.
5: Shoolpaneshwar		
Control Forms	PA and Range Books	Compartment History
The Management Plan stipulated maintenance of control forms at the Division office and at the Range office. However, the format of the control forms was not prescribed and annexed in the Management Plan. This indicated lack of due scrutiny while approving the Management Plan.	Provided for maintenance of PA and Range Books.	Provided for maintenance of compartment history without prescribing any formats.

¹ Balaram Ambaji: 2002-03 to 2006-07.

6: Purna		
Control Forms	PA and Range Books	Compartment History
Format of control forms and physical/financial targets for the plan period were prescribed in the approved Management Plan. However, those were not included in the final printed version of the Management Plan available at the Division. This indicated lack of due care in publishing and printing of the Management Plan. Further, this was also detrimental to the achievement of management prescriptions contained in the Management Plan as field and Divisional staff were not having knowledge of the same.	Provided for maintenance of PA Book only.	Provided for maintenance of compartment history in prescribed formats.

Appendix II

(Reference: Paragraph No. 3.4)

Observations on boundary demarcation and digitization of Sanctuaries

Sl. No.	Provision	Observation	Conclusion
1	The Management Plans, while highlighting the issues of poor maintenance of demarcation register and encroachment of the sanctuary, prescribed for maintenance and regular updation of demarcation register in offices of RFO and DCF showing the actual position of demarcation of the boundary of sanctuary.	Banaskantha, Narmada and Ahwa (North) Divisions neither properly maintained nor timely updated the details of demarcation of the boundary of the respective forest area. Only range-wise number of boundary pillars (A Class and B class) erected in a particular year and expenditure incurred there upon were being recorded. The demarcation registers were not being countersigned by the competent authority. In case of Vadodara Wildlife Division, though data regarding demarcation and maintenance of boundaries of forest area was received from every range office, the division did not maintain any consolidated demarcation register to reflect the actual position of the whole forest area.	The Divisions did not take cognizance of the provisions of the Management Plans and the demarcation registers were not being maintained properly and updated on regular basis. The jurisdiction of four Divisions covering the six Sanctuaries also includes territorial forests which are not a part of the respective sanctuary. The sanctuary area enjoys more protections than surrounding forest areas. Divisions kept only a single demarcation register for both sanctuary as well as forest area falling under its jurisdiction which were also not being properly maintained. Absence of clear demarcation of the sanctuary both in records and on land could affect the proper management of the sanctuary.
2	As per the National Action Plan on Forest Fire brought out by MoEF&CC, in absence of digitized boundaries in many forests across the country, the Forest Survey of India (FSI) screens fire detection using approximations leading to reduced efficacy of the alert system. It also emphasized to digitize the location of critical resources and assets such as watch towers, ground crew stations, control rooms and forest fire lines as well as important infrastructure such as roads, railways, and natural resources such as water bodies and natural fire breaks that could assist in preparedness and planning for response to forest fires. The Supreme Court of India (SCI) also underlined the importance of digitization of data regarding forest and wildlife and issued various guidelines vide its order dated 06 July 2011.	The Department was using manual graphic records for mapping, and it lacked GPS locations of boundaries, fire lines, water bodies, roads, core zone, wildlife corridors and sanctuary land diverted. In cases, while processing application MoEF&CC asked for the details of land diverted for non-forest purpose in past, the Department provided manual data which may not reflect the actual position of diverted land and status of compliance to the conditions imposed during approvals granted. Further, Circle Office did not take action to replace the existing manual graphic records with geo referenced digital map of sanctuary area though Vadodara Wildlife Division provided (September 2017) the GPS coordinates of each boundary cairn. Moreover, out of the four selected divisions, only Banaskantha Division issued (February 2021) work order for survey, demarcation, and	The Forest Department had not developed any GIS based decision support database even after lapse of 10 years since pronouncement of guidelines by the SCI. The non-availability of such a scientific and technical decision supporting database may reduce the efficiency of monitoring of the compliance to the conditions imposed while granting permissions for non-forest purposes, as monitoring officer always needs to go through respective manual files.

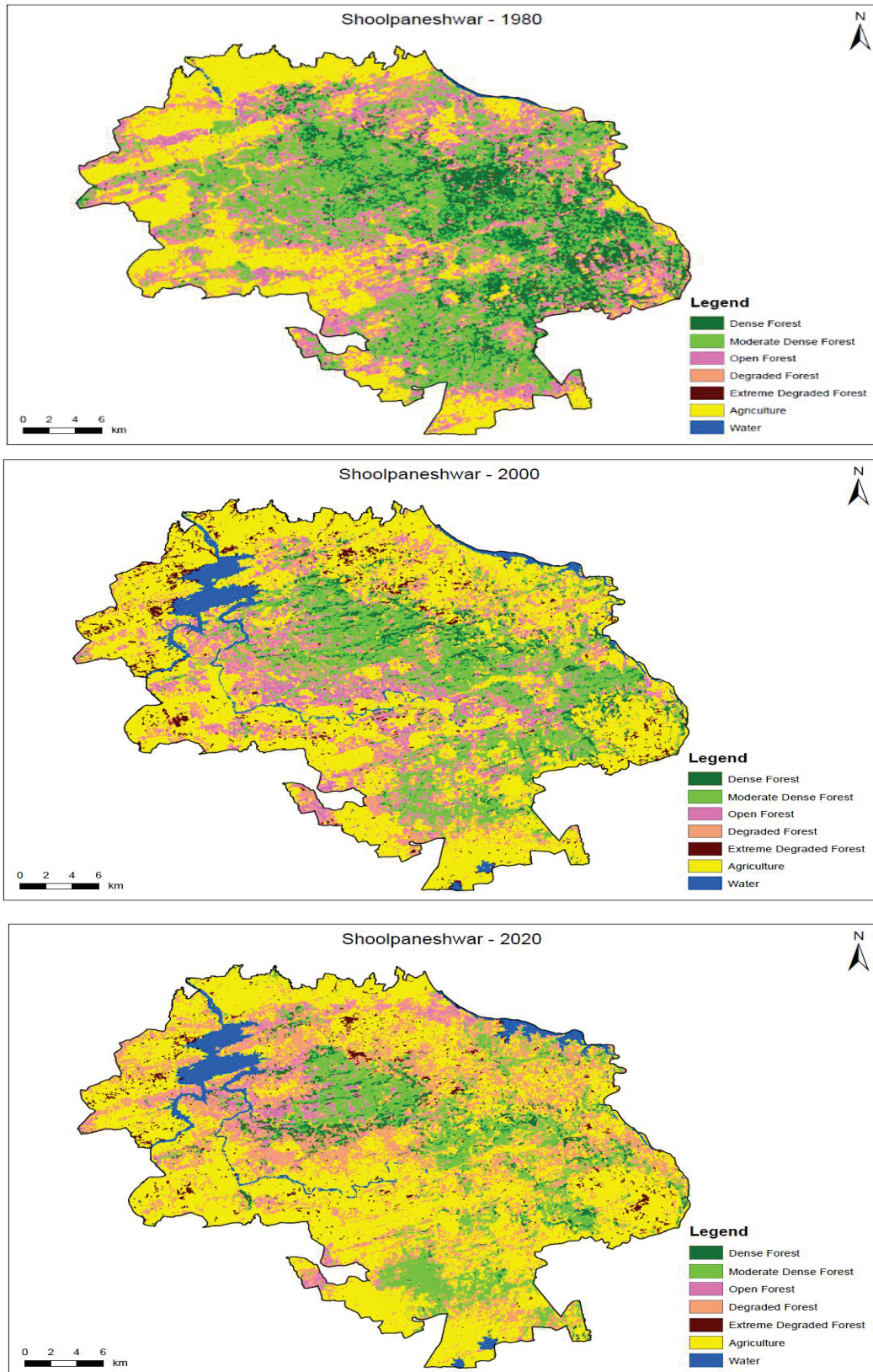
Sl. No.	Provision	Observation	Conclusion
		digitization of the boundary of Forest Areas for creation of updated geo referenced digital map through joint certification of land records with revenue authorities. However, the work order did not cover the digitization of forest assets and fire lines.	
3	Divisions submit status of demarcation and maintenance of boundary of the sanctuary in Statement No. 3 annually for Annual Administrative Report prepared by PCCF Office, which consists of details like “boundary newly demarcated during the year, repair of previously demarcated boundary during the year, previously demarcated boundary not repaired during the year, total boundary demarcated and length of boundary yet to be demarcated at close of the year”.	Divisions did not submit complete information. The progressive details like total length of boundary demarcated and length of boundary remaining to be demarcated at closing of the year, were not being furnished.	The Statements furnished by the respective divisions did not present a holistic and progressive picture of the demarcation status of the boundary of the sanctuary under their jurisdiction. Absence of the required details would function as a limitation for the concerned authority in planning for future work for proper demarcation of the sanctuary to avoid encroachment and conflict with local people.
4	Management Plans of Shoolpaneshwar, Balaram Ambaji and Jessore Sanctuaries proposed strategies for strengthening the protection against encroachment and stipulated that every year ACsF will check 25 per cent of boundaries of the sanctuary under their jurisdiction while RFOs, Foresters and Forest Guards will check 100 per cent. Every RFO is required to submit an annual Range Survey and Demarcation Report which is required to include the details of surprise and routine checks done in the range. Similarly, Chapter 12.2.3 of the Management Plan (Period 2014-15 to 2023-24) of Purna Sanctuary states that demarcation has to be periodically checked and reports shall be submitted by all officers and staff periodically to the DCF. The plan stressed that regular compartment checking and vigilance in pre-monsoon period would be helpful in preventing seasonal encroachment.	Except Management Plan of Shoolpaneshwar, no other management plan had prescriptions for mandatory foot patrolling for the officers and ground staff. The Management Plans of Jambughoda and Ratanmahal Sanctuaries had no provision for surprise and/ or routine checking of boundaries and submission of annual report. Further, in spite of provision for checking and submission of reports in respect of demarcation of boundaries of the other four sanctuaries, no such reports were being submitted by any RFO/ ACF to the jurisdictional Division.	The boundary of the sanctuaries was not being monitored to ensure their inviolability and avoid conflict with local populace and to better manage the wildlife.
5	Standing Instruction Number 1 dated 21 July 2016 issued by the PCCF (WL) <i>inter alia</i> states that due to several reasons (including implementation of FRA) the	Divisions were not following the above instruction and did not submit prescribed annual reports to higher authority though Vadodara Wildlife	In absence of adherence of the standing instruction, the checking of present status of boundaries demarcation and necessary repairs could not be

Sl. No.	Provision	Observation	Conclusion
	exact situation of forest boundaries is not known, as such the possibility of encroachments is increased. Thus, necessary checking of the boundaries and its reporting at Division/ Circle and State Level was prescribed. Also, regular checking of status of boundaries and recording the GPS coordinates of the boundary pillars was stipulated. This was to be done from beat guard level to DCF level and its reporting was to be done to APCCF level each year.	Division did partially check boundaries in the year 2016. No such work was done in the subsequent years while Narmada Forest Division cited shortage of GPS devices for non-compliance of the standing instructions.	ensured.

Appendix III

(Reference: Paragraph No. 3.5.1.1)

Trend of increasing agriculture in Shoolpaneshwar Sanctuary



Source: LULC Report of SAC (ISRO), Ahmedabad.

Appendix IV

(Reference: Paragraph No. 4.2)

Details of Invasive Alien Species, their effects and remedial action needed (as on 31 March 2021)

Sl. No.	Sanctuary	Invasive Alien Species	Effect observed as per Management Plan	Remedial Action recommended/ proposed
1	Jessore	<ul style="list-style-type: none"> • <i>Prosopis Juliflora</i> • <i>Prosopis Chilensis</i> • <i>Lantana camara</i> 	<ul style="list-style-type: none"> • Invaded 30-35 % of the total forest growth. • Inhibited natural regeneration- even grasses are unable to come up in areas invaded and natural species have dried. • Has converted the plain land into thorn forest. • Damage to the prime forest, degradation of habitats and decline of wildlife populations. • Has adverse effect on the productivity of Forest Minor Produce (FMP), which is important for local communities' livelihood. 	GEER Report and MEE Report 2017-18: Total removal of invasive species.
2	Balaram Ambaji	<ul style="list-style-type: none"> • <i>Prosopis Juliflora</i> • <i>Lantana camara</i> • <i>Acacia Tortilis</i> 	Threat to local plant species.	MEE Report 2016-17: Removal of <i>Prosopis</i> and <i>Lantana</i> and planting of native fruit-bearing trees.
3	Jambughoda	<ul style="list-style-type: none"> • <i>Prosopis Juliflora</i> • <i>Lantana camara</i> • <i>Ipomoea</i> • <i>Eucalyptus hybrid Acacia Tortilis</i> 	Loss of habitat for wild animals.	Management Plan: <ul style="list-style-type: none"> • Removal of 50 Ha of invasive species per year and stoppage on plantation of these species in future • Plantation of edible species (50 Ha per year) and gap planting species (50,000 plants per year).
4	Ratanmahal	<ul style="list-style-type: none"> • <i>Lantana camara</i> 	Non-palatable	Management Plan: <ul style="list-style-type: none"> • 100 Ha of invasive species to be removed per year. • Promotion of rotational grazing and undertaking plantation of fodder species to fulfil the needs of sloth bear. • Habitat enrichment plantation in core zone (8 Ha per year) and improvement of grasses (1 Ha per year) and

Sl. No.	Sanctuary	Invasive Alien Species	Effect observed as per Management Plan	Remedial Action recommended/ proposed
				regeneration (250 Ha per year).
5	Shoolpaneshwar	<ul style="list-style-type: none"> • <i>Parthenium</i> • <i>Lantana camara</i> 	Infesting grasslands.	Management Plan: <ul style="list-style-type: none"> • Cleaning of 170 Ha per year (totaling 850 Ha from 2016-21). • Planting grass (330 Ha), fruit/ fodder/ rare and endangered species (1,280 Ha), bamboo plantation (750 Ha) and browsable species improvement (852 Ha) during 2016-17 to 2020-21.
6	Purna	<ul style="list-style-type: none"> • <i>Cassia Tora</i> • <i>Lantana camara</i> 	Non-palatable	Management Plan: <ul style="list-style-type: none"> • Ketki planting (125 Ha), Fodder Plots (400 Ha), Miscellaneous plantation (120 Ha), Slivi pasture development (100 Ha) during 2016-17 to 2020-21.

Source: Management Plan of the sanctuary / Report published by GEER / MEE Reports/ 'Protected Areas and Natural Heritage of Gujarat'- a Book.