

**CHAPTER-II
PERFORMANCE
AUDIT**



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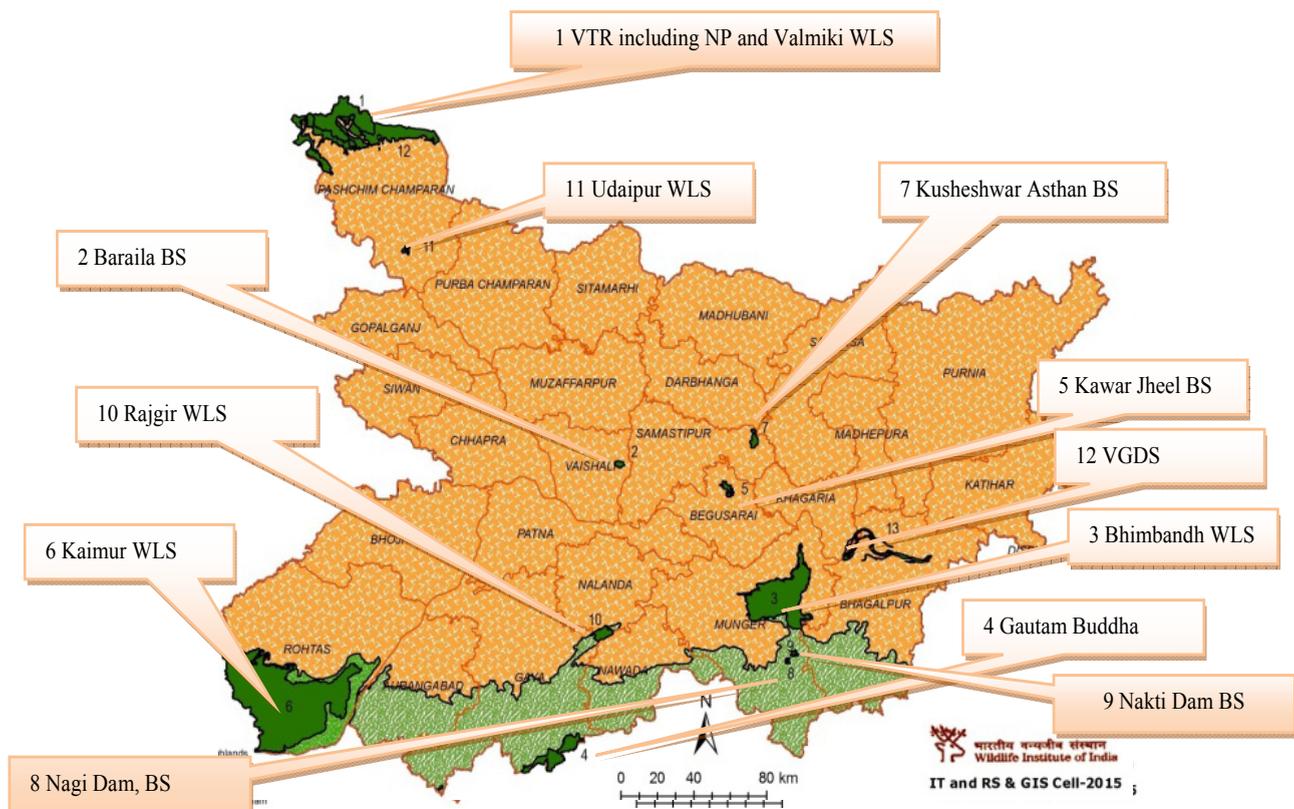
This chapter contains results of performance audit undertaken during the year.

ENVIRONMENT AND FOREST DEPARTMENT

Management of National Park and Wildlife sanctuaries in Bihar

2.1 Introduction

Bihar has 6,845 sq.km of notified natural forest area, which is 7.27 per cent of the geographical area (94,163 sq. km.) of the State. In pursuance of The Wildlife (Protection) Act, 1972 (WP Act), the Government of Bihar (GoB) has notified six¹ wildlife sanctuaries (WLSs) (including Valmiki Tiger Reserve²) and five³ bird sanctuaries (BSs), altogether spread over an area of 3,378.02 sq. km (*Appendix-2.1*). Besides, the Vikramshila Gangetic Dolphin Sanctuary (VGDS), which extends over a stretch of about 60 kms of River Ganges from Sultanganj to Kahalgaon in Bhagalpur District, had also been notified (August 1991) by the GoB as a sanctuary. The 12 sanctuaries and one National Park (NP) *i.e.*, Valmiki NP are shown in the map below:



¹ (i) Bhimbandh WLS, Munger (ii) Gautam Buddha WLS, Gaya (iii) Kaimur WLS, Kaimur & Rohtas (iv) Rajgir WLS, Nalanda (v) Udaipur WLS, Bettiah and (vi) Valmiki WLS, Bettiah

² The VTR comprises Valmiki National Park and Valmiki Wildlife Sanctuary

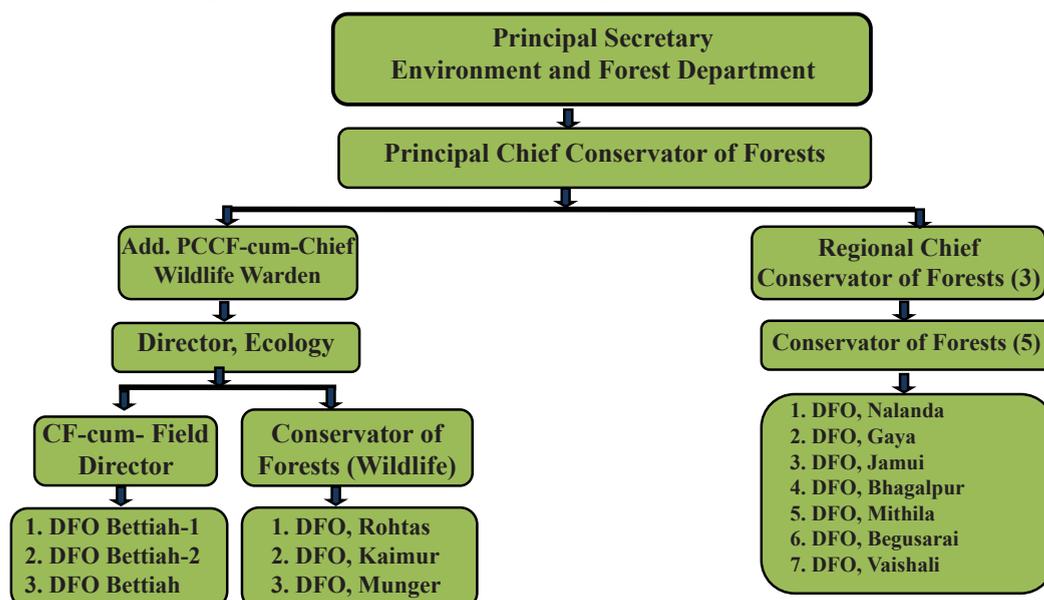
³ (i) Baraila Jheel Salim Ali BS (ii) Kawar Jheel BS, (iii) Kusheshwar Asthan BS, (iv) Nagi Dam BS, and (v) Nakti Dam BS

2.2 Organisational set-up

The Environment and Forest Department (Department) headed by the Principal Secretary at the Government level and Principal Chief Conservator of Forests (PCCF) at the Department level is responsible for maintenance of the NP and the WLSs. Divisional Forest Officers (DFOs) are responsible for management of the NP and the WLSs at the field level. The organisational set-up for the management of the NP and the WLSs, is given below:

Chart 2.1

Organisational set-up for management of NP and WLSs



(Source: Environment and Forest Department)

Out of 13 Forest Divisions, six divisions, mainly responsible for management of the wildlife sanctuaries, are working under the control of the Chief Wildlife Warden. Seven divisions, mainly concerned with forestry work, are under the control of the Regional Chief Conservator of Forests (RCCF). However, matters relating to wildlife/sanctuaries in these divisions are under the control of the Chief Wildlife Warden.

2.3 Audit objectives

The objectives of the performance audit aimed to assess adequacy of manpower, timely availability of finance and its efficient utilisation, adequacy and effectiveness of planning, effectiveness of conservation and protection measures, effectiveness of internal oversight mechanism etc.

2.4 Sources for audit criteria

The audit criteria were sourced from the Wildlife (Protection) Act, 1972, directives of the National Tiger Conservation Authority, orders issued by Supreme Court, Government of India (GoI) and GoB, management plans, guidelines of Wildlife Institute of India (WII), Dehradun, Bihar Financial Rules (BFR) and Bihar Treasury Code (BTC) etc.

2.5 Scope and methodology of audit

This Performance Audit covered various activities for wildlife protection and conservation during 2012-17 through test-check of records in the offices of the Principal Secretary, Environment and Forest Department, PCCF and RCCFs at headquarters level and all the 13 Divisions⁴ along with offices of the Conservators of Forests (CFs) concerned at the field level.

The audit methodology consisted of document analysis, collection of information through questionnaires and joint physical verification.

Entry and exit conferences were held in April 2017 with the PCCF and in December 2017 with the Additional PCCF-cum-Chief Wildlife Warden, Bihar respectively to elicit departmental views on audit objective, criteria, scope, methodology and audit findings. Responses of the Government/Department have been suitably incorporated in the report.

Audit findings

2.6 Human resource management

Manpower position of the Department is indicated in **table 2.1**.

Table 2.1
Man power position

Sl. No.	Description	Sanctioned strength	Men-in-position	Vacancy percentage
1	Indian Forest Service (IFS)	74	49	34
2	Bihar Forest Service (BFS)	68	23	66
Total		142	72	49
3	Range Officer of Forest (RoF)	134	88	34
4	Forester	531	227	57
5	Forest Guard	2,017	230	89
Total		2,682	545	80
Grand Total		2,824	617	78

(Source: Environment and Forest Department)

Scrutiny of records revealed that despite 34 per cent vacancy in the Indian Forest Service (IFS) cadre in the State, posting of seven officers were not related to forestry works as they were on deputation to other Central/State Government departments. Thus, against the available 49 IFS officers, only 42 were engaged in forestry and administrative works of the Department.

80 per cent of the posts of front line staff were vacant in test-checked divisions.

Ten sanctioned posts of Assistant Conservator of Forests in 13 wildlife divisions were not filled up, though they are responsible for the protection of WLSs and supervision of range work executed through range offices vested with them.

⁴ Begusarai, VTR-I, VTR-II, Bettiah, Rohtas, Kaimur, Munger, Nalanda, Gaya, Mithila, Jamui, Vaishali and Bhagalpur

The Range Officer is responsible for efficient management of his Range and supervises all the works executed by foresters and forest guards. Foresters are responsible for all the works in their Beat and supervise forest guards in all their duties like maintenance of forest boundaries, patrolling, preventing illicit felling of trees and poaching, works of compartment etc. Availability of front line staff (Range Officer, Forester and Forest guard) against sanctioned strength of the divisions was insufficient as indicated in **table 2.2**.

Table 2.2
Frontline staff in the concerned forest divisions as of March 2017

Sanctuaries	Staff position	Range Officer	Forester	Forest guard	Total
VTR	SS	9	39	167	215
	MIP	8	9	20	37
	Vacancy (percentage)	11	77	88	83
Five other Wildlife sanctuaries	SS	30	151	651	832
	MIP	17	41	93	151
	Vacancy (percentage)	43	73	86	82
Five Bird sanctuaries	SS	15	58	235	308
	MIP	11	20	43	74
	Vacancy (percentage)	27	66	82	76
One Dolphin sanctuary	SS	2	4	10	16
	MIP	2	1	4	7
	Vacancy (percentage)	0	75	60	56
Total	SS	56	252	1,063	1,371
	MIP	38	71	160	269
	Vacancy (percentage)	32	72	85	80

SS: Sanctioned Strength; MIP: Men in position
(Source: Forest divisions)

Due to severe staff crunch at the cutting edge level, as on March 2017, the jurisdiction of a Forest guard which should ideally be around 5 sq. km. has increased to 45 sq. km. in VTR. The Department engaged casual labourers as trackers, anti-poaching squads, patrolling works etc. of VTR. The protection works of VTR had been entrusted to local villagers on contract without any training in wildlife management. Deployment of casual labourers in VTR ranged between 292 and 557 during 2012-17. Contractual staff cannot be a replacement for the regular front line staff and this seriously affected the conservation and protection measures in VTR, as also communicated (August 2017) by the VTR management.

In the remaining 11 sanctuaries, it was noticed that no dedicated posts of frontline staff for the management of sanctuaries had been sanctioned. Therefore, management of sanctuaries and other forestry works in the divisions were being carried out by the same work force which performed other tasks of the divisions. Against sanctioned posts of Foresters (213) and Forest guards (896), only 62 and 140 persons were in position respectively in the concerned divisions (March 2017). Besides, National Tiger Conservation Authority had also observed⁵

⁵ NTCA's Inspection Report of VTR dated 11 March 2016.

Recruitment process started in 2014 was not completed up to December 2017 and acute shortage of staff affected conservation and protection works.

(March 2016) that the GoB had not recruited any permanent field personnel during the last twenty years.

Shortage of staff resulted in deficient conservation and protection measures of sanctuaries such as non-maintenance of compartment history⁶, non-estimation of population of wild animals, inadequate survey and demarcation, deficient conservation of bird and Dolphin sanctuaries, inadequate patrolling etc., as discussed in the succeeding paragraphs. Besides, shortage of manpower affected detection/reporting of cases of poaching, illicit felling of trees etc.

The Department accepted (December 2017) that acute shortage of front line staff had affected conservation and protection works and stated that action was initiated to fill-up the vacancies in 2014. However, recruitment process was yet to be completed (December 2017) by the recruitment agencies viz., Bihar Public Service Commission (BPSC)/Bihar Staff Selection Commission (BSSC).

The reply of the Department is not justifiable as large number of vacancies existed in the sanctuaries even prior to 2012 and the Department had initiated steps to fill-up the posts belatedly (2014). There was also no evidence that the Department had pursued the same with BPSC/BSSC. Further, it was noticed that recruitment process was delayed due to procedural delays in BPSC and BSSC and cancellation of examinations by BSSC.

Recommendations:

- *The Department/Government should review the causes of delay in the recruitment process and take urgent steps to fill up the vacancies.*
- *In the absence of sufficient manpower, the Department/Government should consider adopting new technologies such as camera trapping, satellite imagery, GIS/GPS etc., to improve conservation and protection measures in the wildlife sanctuaries.*

2.7 Planning for conservation and protection of wildlife

In terms of Section 33 of the Wildlife (Protection) Act 1972, Government of India (GoI), the Chief Wildlife Warden (CWLW) of the State is responsible for control, management and maintenance of sanctuaries. Further, the Guide to Planning Wildlife Management in Protected Areas⁷ stipulates that a management plan must realistically address all management issues and must maintain objectivity, quality and standards. Funds for conservation and protection are released by GoI on the basis of the Annual Plan for Operations (APOs), meant for execution of management plan.

Management Plans for nine WLSs, out of 12, had not been prepared though the Government had notified these WLSs during 1976 to 1997.

⁶ *Compartment history includes details of forest road, grass lands, presence of weeds, faunal sighting, water bodies etc.*

⁷ *Published by the Wildlife Institute of India (WII), Dehradun.*

Audit scrutiny revealed that out of 12 sanctuaries, management plans had been prepared for only three (VTR: 2013-23, Kaimur: 2011-21 and Bhimbandh: 2015-25). Though the remaining nine sanctuaries were notified between 1976 and 1997, the Department initiated preparation of management plans (five through external agencies and four by the department) only in 2014-15. However, the management plans were yet to be finalised (March 2017) by the Department. The delay in preparation of management plan was mainly attributable to the absence of necessary information on the flora and fauna and inadequate survey and demarcation of sanctuaries, which were pre-requisites for preparation of management plan and delays in selection of agencies.

Absence of Management Plan deprived the sanctuaries of central assistance and affected conservation and protection measures.

In the absence of management plans, the State was deprived of central assistance. Nine sanctuaries, which had no management plans, received only three *per cent* (₹ 5.54 crore) funds during 2012-17 while 97 *per cent* (₹ 187.64 crore) of the total funds were provided to three sanctuaries having management plans as discussed in *Paragraph-2.8.1*. This affected conservation and protection measures in the sanctuaries as indicated in the succeeding paragraphs.

During the exit conference, Department attributed the delay in finalisation of management plans to deficient manpower and also to delays on part of external agency (Wildlife Institute of India).

The contention of the Department regarding delay on the part of external agency is not acceptable as the Department could not provide WII with information regarding flora and fauna of the sanctuaries. WII had also informed (June 2014) the Department that the preparation of management plan would be delayed in the absence of information. Further, the Department had decided (2014-15) to prepare management plan for four sanctuaries departmentally despite being aware that there was shortage of manpower.

2.7.1 Tiger Conservation Plan

The Wildlife (Protection) Act, 1972 stipulates that the State Government shall prepare a tiger conservation plan, which is to be approved by the National Tiger Conservation Authority (NTCA). Further, as per guidelines of WII, the strategies and operational schedules for achieving the plan objectives within a time bound framework and funding are to be included in the management plan. The budget needs to be annualized, indicating operational targets under all strategies and the relevant financial implications.

During scrutiny of tiger conservation plan (TCP) of VTR for the period 2013-14 to 2022-23, it was noticed that NTCA had approved the first TCP in December 2014, *i.e.*, after about twenty months after commencement of the plan period. It was further noticed that though the NTCA had issued guidelines (October 2012) for preparation of TCP, the Department submitted the same to NTCA in February 2014 *i.e.*, after a lapse of 15 months.

TCP (2013-23) of VTR was approved (December 2014) after 20 months of the commencement of the plan period. Further, year-wise planning for mitigating threats, as required, had not been included in the TCP.

Further scrutiny revealed that, the TCP only contained details of works to be executed, without year wise planning/objectives, year-wise assessment of funds required, strategic plan for conservation and protection of endangered and protected animals and measures for mitigating threats. In the absence of year-wise planning for activities to be undertaken, cases of poaching, creation/rejuvenation of grass land, illicit felling of trees, anthropogenic pressure, dependency of local people on forest and forest produce etc., could not be addressed (March 2017) as discussed in the succeeding paragraphs.

The Department attributed (December 2017) the delay in preparation and approval of TCP to delay in final delineation of core and buffer areas of the sanctuary and compliance to the queries raised by NTCA. The Department also assured that, from the next phase of TCP, year-wise planning/objectives would be included in the strategic plan of conservation and protection measures. The reply of the Department is not acceptable. Though GoB had already delineated the core and buffer area in August 2012, the Department had submitted the TCP to NTCA only in February 2014.

2.7.2 Preparation and submission of Annual Plan of Operation (APOs)

The management plan of every sanctuary is executed annually through an Annual Plan of Operation (APO). As per NTCA guidelines, the APOs of VTR should be overall co-ordinated programmes and should be submitted to the GoI for approval by 31 October of the preceding year. Further, APOs for other sanctuaries should be submitted to GoI latest by March of the preceding financial year.

Audit noticed that the CF-cum-FD submitted the APOs for VTR to the Department after delays ranging from three to seven months during 2012-17, which led to delay in submission of the same by the Department to the GoI. Similarly, APOs of two WLSs (Kaimur and Bhimbandh) were invariably prepared by the DFOs concerned with delays of two to three months. Consequently, sanctions for APOs were also accorded late by GoI, thus depriving the sanctuaries of financial assistance for two to seven months of the beginning of the financial year. As a result, conservation measures could not be carried out in the sanctuaries during these months.

During the exit conference, the Department stated that APOs were submitted to GoI after receipt of utilisation certificate of the previous year from the concerned divisions and assured that APOs would be sent to GoI in advance. The contention of the Department is not acceptable as, according to guidelines of GoI/NTCA, submission of the UCs of the previous year was not required for preparation/submission of APOs of the coming year.

2.7.3 Maintenance of compartment history

According to the National Working Plan Code-2014 (for Sustainable Management of Forests and Biodiversity in India), compartment history is a well documented description of the forest, maintained at the Range Office level

Compartment History was not maintained in any of the test-checked sanctuaries.

annually. Compartment history⁸, essential for conservation planning and strategic management, includes details of compartment boundary⁹, forest roads, grasslands, drivers of degradation, presence of weeds, faunal sighting, water bodies etc.

Audit noticed that compartment history was not maintained in any of the WLSs during 2012-17. In the absence of compartment history, annual plan was not based on ground level inputs.

The Department attributed (December 2017) the non-maintenance of compartment history to the acute shortage of Forest guards.

Recommendations: The Department should:

- *prepare comprehensive management plans for each sanctuary based on inputs from the field units.*
- *ensure maintenance of compartment history in the sanctuaries for conservation planning.*

2.8 Financial Management

The Department provided funds under CSS, State Schemes, Compensatory Afforestation Funds Management & Planning Authority (CAMPA) and Van Awam Vanya Prani Sanrakshan Kosh¹⁰ (Kosh) to the concerned divisions for management of NP and WLSs.

2.8.1 Availability of funds and expenditure

During 2012-17, the total budget provision and expenditure for the Department were ₹ 1,375.96 crore¹¹ and ₹ 1,362.02 crore¹² (99 per cent) respectively. During 2012-17, an amount of ₹ 193.18 crore¹³ was provided by the Department to concerned divisions for management of 12 sanctuaries against which expenditure of ₹ 183.54 crore was incurred. The sanctuary-wise detailed allotment of funds and expenditure incurred there-against during 2012-17 are given in **Appendix-2.2**. Summary of funds made available to the sanctuaries and expenditure there-against was as shown in **table 2.3**.

⁸ To be maintained by the Forest guard of the concerned sub-beat

⁹ Compartment boundaries demarcate the compartment area in all the directions/sides by boundary pillars, ridges, spurs, streams etc.

¹⁰ A society established by the Department for conservation, protection and development of sanctuaries/National park, Forest and Wildlife of the State.

¹¹ Revenue Head (Major Head 2406): ₹ 1,276.18 crore and Capital head (Major Head 4406): ₹ 99.78 crore

¹² Revenue Head (Major Head 2406): ₹ 1262.79 crore and Capital head (Major Head 4406): ₹ 99.23 crore

¹³ State Plan: ₹ 97.16 crore; State non-plan: ₹ 28.99 crore; Kosh: ₹ 28.21 crore; CAMPA: ₹ 4.91 crore; Project Tiger: ₹ 27.71 crore; Integrated Development of Wildlife Habitat: ₹ 5.19 crore; Intensive Forest Management: ₹ 0.87 crore and 13th Finance: ₹ 0.14 crore.

Table 2.3
Allotment of funds by the Department for sanctuaries and expenditure incurred by the divisions during 2012-17

(₹ in crore)

Sanctuaries	Three sanctuaries having management plan				Nine sanctuaries without management plan			
	VTR	Kaimur	Bhimbandh	Total (2+3+4)	Three WLSs	Five bird sanctuaries	One Dolphin sanctuary	Total (6+7+8)
1	2	3	4	5	6	7	8	9
Allotment	91.13	59.33	37.18	187.64	3.60	1.51	0.43	5.54
Expenditure	82.65	58.99	37.12	178.76	3.02	1.46	0.30	4.78

(Source: Records of test-checked divisions)

Department provided fund of ₹ 187.64 crore (97 per cent) to three WLSs, whereas nine WLSs received only ₹ 5.54 crore (three per cent) during 2012-17.

Out of ₹ 3.60 crore provided to three WLSs without management plans, an insignificant amount of ₹ 62 lakh was provided to Gautam Buddha WLS despite the fact that the sanctuary covered an area of 138.34 sq. km. Further, only ₹ 1.94¹⁴ crore was provided to the respective divisions for management of five bird sanctuaries and the only Dolphin sanctuary in the State during 2012-17. It was also noticed that the bird sanctuaries were not provided funds under State plan during 2012-17, except Kawar Jheel, which received only ₹ 11 lakh during 2012-14.

Audit observed that preparation of APOs were based on the tentative allotment intimated by GoI and not on the actual requirement of the sanctuaries. This resulted in inadequacy of funds and affected conservation and protection works in the sanctuaries.

The Department stated (December 2017) that the three WLSs (VTR, Bhimbandh and Kaimur) got the major chunk of funds because of their bigger size in comparison to the other sanctuaries and richness of bio-diversity. The contention of the Department was not acceptable, as all these sanctuaries had been notified by the GoB on the ground that they had adequate ecological, faunal and floral significance. Thus, the fact remains that the nine sanctuaries were deprived of funds due to non-preparation of management plans.

2.8.2 Rush of expenditure in VTR

Rush of expenditure at the end of the financial year in VTR ranged between 28 and 55 per cent.

Scrutiny of monthly accounts and budget control registers for the period 2014-17 of the two divisions of VTR revealed that there was no plan expenditure during the first two months of financial year *i.e.*, April and May. In 2016-17, VTR Division No. 2 did not incur any expenditure on conservation and protection works even up to the fourth month (July) of the financial year. Contrary to the provisions of Bihar Budget Manual, the expenditure in the month of March each year ranged between 28 to 55 per cent, which was higher in comparison to other months. This was attributable to delayed release of funds by the Department to the divisions, at the fag end of the financial year.

¹⁴ CAMPA – ₹ 0.19 crore, Kosh- ₹ 1.61 crore, State Plan- ₹ 0.13 crore and 13th Finance Commission – ₹ 0.01 crore.

While agreeing with the audit observation, the Department assured (December 2017) that efforts would be made to release funds in time to the divisions in future.

2.8.3 Unutilised funds in VTR

The State Government established (December 2010) the Valmiki Tiger Conservation Foundation, as required under the Wildlife (Protection) Act, 1972 (amended) to facilitate and support the management for conservation of tiger and bio-diversity as well as eco-development by involvement of local people. The Foundation was also authorised to collect entry fees from tourists and to arrange funds from national or international sources.

Audit observed that the Foundation could not arrange funds from any source other than entry fees of ₹ 0.45 crore, collected from tourists (up to March 2017). The amount deposited in the bank account of the Foundation, remained unspent as of April 2017 due to the fact that meetings of the Governing Body, headed by Minister of Environment and Forest Department, to be organised at least twice a year, were not convened even once. Thus, the purpose of establishment of the Foundation remained unfulfilled.

The Department assured (December 2017) that necessary action would be taken in this regard.

Recommendation: *The Government should provide adequate funds to the NP and WLSs in time to avoid rush of expenditure at the end of the year. Action should be taken to utilise funds of VTR foundation for the intended purpose, and to hold the prescribed meetings of the Governing Body.*

2.9 Conservation of wildlife sanctuaries

As per the Wildlife Protection Act, 1972 measures are to be taken for protection and conservation of wildlife and its habitats. Conservation includes safeguarding wildlife and its habitat through grassland development, weed eradication, water conservation etc. Issues relating to conservation of wildlife and its habitat are discussed in the succeeding paragraphs:

2.9.1 Estimation of Tigers

In order to assess the existence of major mammals, population estimation of



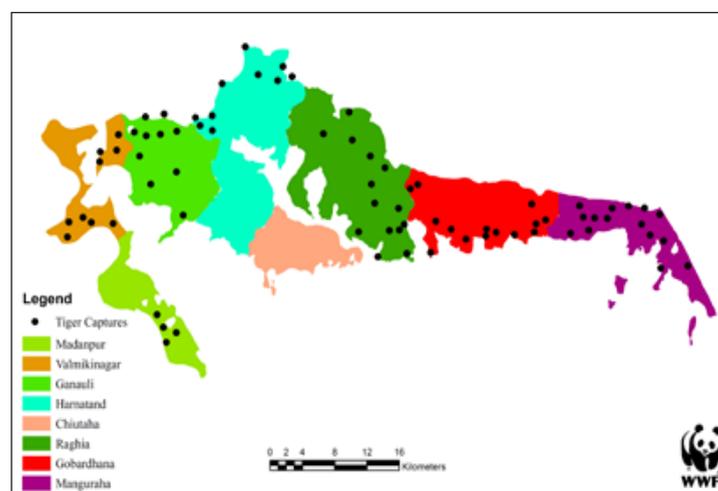
Tiger in VTR

WLS is to be carried out every year. The estimated population of tigers in VTR was 22 during 2012-13 and 28 during 2013-14 and 2014-15.

Population estimate of tigers was not done in 2015-16, even though, population report of tigers for the year 2016-17 was under finalisation by World Wildlife Fund-India (May 2017).

The Department attributed non estimation of tiger population during 2015-16 to shortage of field staff. The reply is not acceptable as this exercise had been carried out by the VTR management in the years 2014 and 2015 by using the camera trap method as per norms of NTCA despite shortage of field staff in the Department.

As per the Report of the WWF-India in the year 2013, no tiger was found in



the year 2013 in two¹⁵ out of eight ranges of the VTR, due to anthropogenic pressure¹⁶ as revenue villages existed around the areas of these ranges. There was nothing on record to show that the Department had prepared any plan for relocation of the

villages to mitigate the anthropogenic pressure in the affected areas as of May 2017.

The Department agreed with the audit observation and stated that tigers were not present in the two ranges mainly due to non-suitability of habitat owing to terrain condition and anthropogenic pressure. It was further stated that plan for relocation of villages was not prepared as it required study and research work.

Recommendation: The Department should initiate action for relocation of villages around the sanctuary area to reduce the anthropogenic pressure.

2.9.2 Estimation of wild animals

As per National Tiger Conservation Authority (NTCA), the management of VTR was required to estimate/count population of wild animals every year. However, as per WII, estimation of prey population should be conducted in a wildlife sanctuary at an interval of every three to five years.

Audit scrutiny revealed that the census/estimation of population of the wildlife was not carried out in any of the sanctuaries during 2012-17. As per departmental records, the estimated wildlife population during previous years in the six WLSs was as detailed in **table 2.4**.

¹⁵ Chiutaha and southern part of Harnatand ranges

¹⁶ Anthropogenic pressure: Changes to biophysical environment and ecosystem biodiversity and natural resources caused directly or indirectly by humans.

Table 2.4
Presence of wildlife in the WLSs

Wildlife Sanctuary	Latest estimation (year)	Presence of large mammals (numbers)
Bhimbandh	Management plan (2014)	Leopard [§] , Hyena*, Sloth Bear [^] , Four Horned Antelope*, Sambar, Ganga River Dolphin** etc.
Gautam Buddha	Working plan (2013-14)	Hyena*, Wolf*, Wild Boar, Sambar, Spotted Deer etc.
Kaimur	Management plan (2010)	Leopard [§] (56), Sambar (132), Chital (661), Four Horned Antelope* (18), Wild Pig (3,043), Porcupine (345), Sloth Bear [^] (713) etc.
Rajgir	Management plan (2003)	Wild Boar (102), Black-Naped Hare (122), Primates (147), Jungle Cat* (12), Golden Jackal (26) etc.
Udaipur	Management plan (2016-17)	Spotted Deer, Barking Deer, Nilgai, Porcupines etc.
Valmiki Tiger Reserve	Tiger conservation plan (2012)	Chital (13,632), Sambar (1,686), Wild Boar (9,091), Bison (168), Barking Deer (1,667), Hog Deer* (49), Sloth Bear [^] (306) etc.

*Near Threatened # Threatened \$ Extinct **Endangered ^ Vulnerable

(Source: Records of test-checked divisions)

Estimation of wildlife was not carried out in any of the five bird sanctuaries and six WLSs during 2012-17.

As conservation of the predators also depends directly on the conservation of the prey, adequate and effective measures for tiger conservation would not be possible in the absence of data regarding number of different wild animals. For a healthy and sustainable ecosystem, conservation of each and every level of the food pyramid is required, failing which, the balanced ecosystem and food pyramid gets disturbed.

Non-estimation of wildlife population indicated that Department could not assess food and fodder requirement in WLSs.

Department attributed non-estimation of the wild animals to shortage of manpower. The reply is not acceptable as estimation of large mammals of VTR was carried out in the year 2012, despite shortage of field staff.

Recommendations:

- *Till such time vacancies are filled up on priority, the Department should make alternative arrangements to estimate wildlife in the sanctuaries.*
- *The Department should consider adopting technology such as drones, camera trapping etc., for estimation of wildlife in the sanctuaries.*

2.9.3 Provision for food/fodder

According to approved management plans, grasslands need to be replenished on a regular basis as per requirement, as animals do not eat mature grass. The Field Director, VTR and Divisional Forest Officers concerned are responsible for creation and maintenance of grasslands in sanctuaries.

Audit observed that the extent of grasslands in VTR remained unchanged at about 44 sq. km. (five per cent of total area) during 2004 to 2012. Though a total of 17.55 sq. km. grasslands were created in VTR during 2012-17, due to non-estimation of wild animals, the requirement was never assessed.

During joint physical verification of grasslands in the Manguraha Range of the VTR, it was noticed (May 2017) that the grass, in the areas visited, had become mature and was not suitable for consumption of herbivores.



Mature grassland not suitable for consumption of herbivores

In four¹⁷ WLSs, it was noticed that during 2012-17, creation of 400 ha grassland was done without any estimation and identification of probable locations of herbivores as well as carnivores.

The Department agreed (December 2017) with the audit observation and stated that assessment for grassland was necessary before creation of new grasslands and assured that this would be attended to.

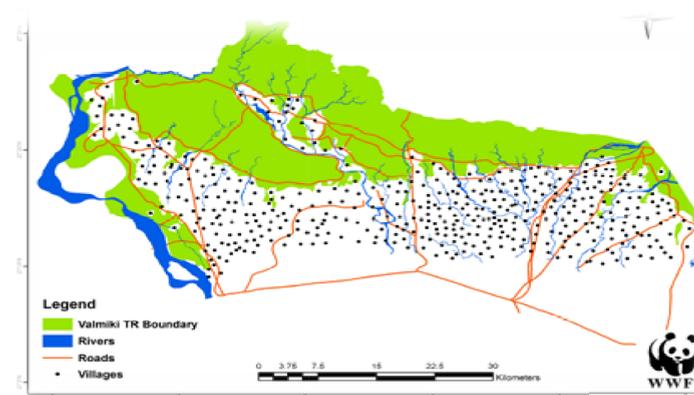
Recommendation: The Department should expand and maintain need based grasslands regularly.

2.9.4 Anthropogenic Pressure

• *Anthropogenic Pressure owing to local villagers*

In VTR, though no village existed in the core area, 136 villages were situated in the buffer area. Scrutiny

of records revealed that 26 revenue villages, spread across 82 sq. km. with a population of about 24,538, was surrounded by the core area of the Reserve. Consequently, local population use traditional passages



through the core of the VTR. Five¹⁸ pilgrim shrines existed within the Reserve and every year, fairs were organised in these sites.

Similarly, in two WLSs, 92 villages¹⁹ were located in the core areas and 259 villages²⁰ were located in the buffer zones. Beneficiary survey revealed that

¹⁷ Bhimbandh: 100 ha, Gautam Buddha: 70 ha, Kaimur: 220 ha and Rajgir: 10 ha

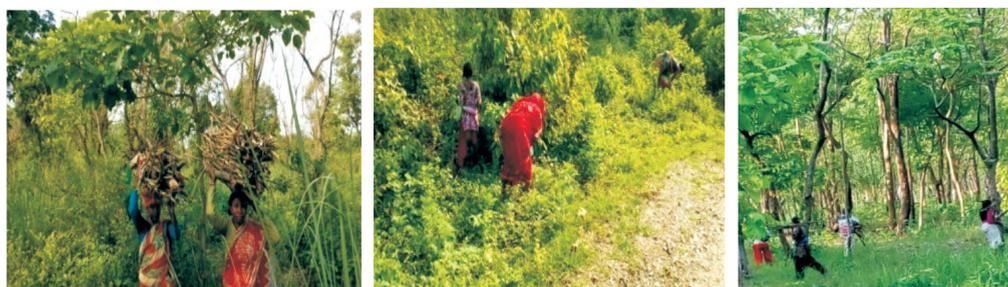
¹⁸ Trivenighat (Jatashankar), Nardevi, Madanpur Devasthan, Someshwar and Sofa temple.

¹⁹ Kaimur: 85 villages (650.64 sq.km.) and Bhimbandh: 7 villages (183.87 sq. km)

²⁰ Kaimur: 138 and Bhimbandh: 121

There was heavy anthropogenic pressure in three WLSs due to presence of villages in and around the core areas.

94 villagers (72 per cent) out of 130 villagers, covered in the beneficiary survey, were dependent on firewood and other forest produce.



Fuel wood and forest produce collection from VTR

The presence of villages indicated heavy anthropogenic pressure on wildlife and failure of the Chief Wildlife Warden to relocate villagers.

During the exit conference (December 2017), the Department admitted that in case of VTR, though the agenda for relocation of villages is included in the TCP (2013-23), plan for relocation of villages was yet to be prepared. It was further admitted that feasibility for relocation of villages had not been assessed in Kaimur and Bhimbandh WLSs.

- ***Anthropogenic pressure owing to infrastructure development***

It was noticed that there was anthropogenic pressure in VTR owing to Bagaha-Chhitoni Rail lines and obstructions in movement of wildlife. Due to failure



Railway line passing through VTR

of the Department to ensure safe movement of wildlife across the railway line, 63²¹ wild animals including tiger, rhinoceros, crocodile *etc.*, were killed (August 2006 to March 2017) and 24 animals were killed in 2012-17 alone. Further, scrutiny of records revealed that the directions given by NTCA (December

2015), to restrict the speed of trains (40 km/h during the day and 25 km/h during the night) and clear the railway tracks up to a distance of five metres, were not being followed. The Railways had categorically expressed (September 2015) its inability to reduce speed of the trains passing through VTR and had not taken any action in this regard (March 2017).

Out of the remaining five WLSs, it was also noticed that either national highway or roads connecting villages were bisecting/passing through four²² WLSs. During 2012-17, five animals in Kaimur and one animal in Bhimbandh WLS,

During August 2006 to March 2017, 63 wild animals including tiger, rhinoceros, crocodile *etc.* were killed on the railway track passing through VTR.

²¹ Cheetal: 11; Crocodile:3; Deer: 2; Fishing cat: 2; Jackal: 1; Monkey: 3; Nilgai: 31; Pig: 1; Python: 6; Rhinoceros: 2; Tiger: 1

²² Bhimbandh, Munger; Gautam Buddha, Gaya; Kaimur, Bhabhua and Rajgir, Nalanda

were reportedly killed in road accidents. However, remedial action, if any, taken by the Department was not seen on record.

Recommendation: The Department should prepare time bound plan to relocate villages with the help of GoI and GoB, and to avoid road/rail accidents of wild animals, at least speed limit should be maintained.

2.9.5 Fire line management

As per tiger conservation plan, creation/maintenance of fire line²³ is required to be completed every year as preventive measure for fire occurrences.

Audit noticed that against the requirement of 130 fire lines with a length of 1,139 km, creation/maintenance of fire lines in VTR was inadequate during the period 2012-13 to 2016-17 as indicated in **table 2.5** below:

Table 2.5
Year-wise availability of fire lines and fire occurrences in VTR

Year	Availability of fire lines		No. of fire occurrences
	No.	Length (in km)	
2012-13	44	330	351
2013-14	44	330	270
2014-15	53	326	374
2015-16	64	407	251
2016-17	66	455	705

(Source: Records of CF-cum-FD)

Scrutiny of records revealed that 28.86 sq.km. of Reserve areas were affected due to ground fire occurrences during 2012-17. No loss of wildlife and vegetation was reported. The CF-cum-FD attributed (August 2017) the shortage in fire lines and reason for fire occurrences to paucity of funds and close proximity of villages to the Reserve area. As there was significant increase in fire occurrences, the possibility of loss of wildlife and vegetation in future could not be ruled out.

2.9.6 Survey/demarcation and construction of boundary pillars

The WII guidelines prescribe demarcation of boundaries and construction of boundary pillars of the sanctuaries. The Forest guard of sub-beat is responsible to keep the boundary lines clear and maintain the boundary pillars of the sanctuary area.

Out of six WLSs, survey and demarcation work was not carried out in Gautam Buddha WLS. In two WLSs²⁴, against the requirement of 15,176²⁵ boundary pillars, only 6,476²⁶ (43 per cent) pillars were put up as of March 2017 as the Department did not provide funds for the same. Further, it was noticed that a total of 638.14 hectares²⁷ of notified land was encroached (March 2017) in five WLSs.

²³ A gap in vegetation or other combustible material that acts as a barrier to slow or stop the progress of a bush fire or wildfire.

²⁴ Kaimur and Bhimbandh, Munger WLSs

²⁵ Kaimur: 10,176 and Bhimbandh: 5,000

²⁶ Kaimur: 5,235 and Bhimbandh: 1,241

²⁷ Bhimbandh: 5.88 ha; Gautam Buddha: 7.18 ha; Kaimur: 590.79 ha; Rajgir: 0.45 ha and VTR: 33.84 ha.

The Department agreed (December 2017) with the audit observation and attributed the insufficient survey and demarcation of sanctuary land to shortage of field staff. The reply is not acceptable, as survey and demarcation works could be completed by the casual/contractual staff.

Recommendation: The Department should make alternative arrangements to complete survey and demarcation of sanctuary.

2.9.7 Electric lines passing through the WLSs

According to guidelines (October 2011) of the National Board for Wildlife (NBWL), low power lines are not permitted in natural areas and underground power cables were to be carefully used along the existing road alignments.

It was noticed during joint physical verification of two²⁸ WLSs that power lines were passing through the sanctuary area. Forest officials stated that these power lines, connecting the nearby villages, have been in existence for several years.

The Department stated that action could not be taken to replace the existing low power lines with underground cables. It was further stated that only covered power cables were being permitted in the sanctuaries now.

Recommendation: The Department should initiate action to ensure that existing power lines are changed as per wildlife norms.

2.10 Protection of wildlife sanctuaries

The major components for protection and safeguarding wildlife include patrolling or anti-poaching camps/chowkies, wireless network and other safety equipment *etc.* Deficiencies in safety and security measures for protecting wildlife and its habitat noticed in the test-checked divisions are discussed in the succeeding paragraphs:

- **Patrolling/Anti-poaching Camps**

With a view to minimise poaching cases, anti-poaching camps (APCs) are to be established and monitored by CF-cum-FD of VTR. As per NTCA directives, one camp is to be set-up for an area of around 25-35 sq km. The status of establishment of anti-poaching camps as well as cases of poaching in VTR was as indicated in **table 2.6**.

Table 2.6
Anti-poaching camps and poaching cases during 2012-17 in VTR

Year	Number of APC available	Number of poaching cases
2012-13	7	13
2013-14	23	3
2014-15	29	6
2015-16	33	12 ²⁹
2016-17	43	28

(Source: Records of CF-cum-Field Director, VTR)

²⁸ Gautam Buddha and Rajgir

²⁹ Including four Tigers

Casual/contractual staff, not trained in wildlife protection, were deployed in anti-poaching camps of VTR.

The VTR management had increased the number of APCs from 7 to 43 during 2012-17 to cover an area of about 900 sq. km. which was sufficient as per NTCA norms. However, cases of poaching of animals such as tiger, chital, bison *etc.*, increased.

It was also noticed that, against the requirement of five trained personnel, about four to five casual/contractual staff, not trained in wildlife protection, were deployed. Though the establishment of APC's norm was fulfilled, yet cases of poaching increased, indicating unreported cases of poaching in previous years, unplanned/unsuitable location of the APCs and deployment of untrained personnel. Further, Special Tiger Protection Force, as required under the NTCA directives, had not been created and deployed.

Joint physical verification of five anti-poaching camps³⁰ revealed that they lacked drinking water facilities, toilets were not in use, and there was no lighting arrangement. Two³¹ anti-poaching camps were not suitable to live in as there was seepage from the roof.



Anti-poaching camps in VTR

The VTR management had not maintained the monitoring reports, in the absence of such report audit could not assess whether monitoring of APC's was carried out. The condition of APCs was mainly attributable to paucity of funds in the VTR as well as inadequate monitoring by the higher officials of the Department.

In reply, the Department stated (December 2017) that physical infrastructure of APCs would be improved. However, the Department did not give reasons for increase in poaching cases, despite sufficient number of APCs.

In the four WLSs, except Bhimbandh, no patrolling/anti-poaching camp was established, though a total of 1,699 sq km area was covered by these WLSs. In Bhimbandh WLS, only four APCs against requirement of 10, were functional during 2015-17. In the absence of patrolling/APCs, possibility of non/under reporting of cases of poaching of wild animals and illicit felling of trees could not be ruled out.

³⁰ Gularbana, Lakhminia, Balbal, Sofa and Jamhauri in VTR

³¹ Balbal and Sofa

In reply, Department stated (December 2017) that due to acute shortage of field staff, adequate numbers of APCs could not be established. The reply of the Department is not acceptable as trained contractual staff could have been deployed for patrolling/anti-poaching work to ensure at least minimum possible protection and deterrence.

• **Vigilance and protection measures**

According to the tiger conservation plan and management plans of sanctuaries, forest personnel are required to possess necessary equipment like global positioning system (GPS), wireless system, camera trap, binoculars, night vision devices *etc.*, to manage and protect the sanctuary and to improve vigilance and protection measures.

Out of six WLSs, it was noticed that the aforesaid equipment were not at all available in two³² WLSs. In the remaining four WLSs, the status of requirement and availability of functional equipment as of March 2017 were as indicated table 2.7 below:

Table 2.7
Availability of equipment in four WLSs

Sl. No.	Name of WLS	Binocular		GPS		Camera trap		Wireless set		Night vision device	
		R	A	R	A	R	A	R	A	R	A
1	Bhimbandh	6	1	40	20	40	0	NA	0	20	0
2	Kaimur	8	6	16	13	40	19	10	0	6	0
3	Rajgir	NA	0	10	2	2	0	2	0	NA	0
4	VTR	24	9	170	52	500	253	45	16	9	8

(R = Required, A = Available and NA = Not assessed)

(Source: Records of test-checked divisions)

Adequate equipment for vigilance and protection measures was not found in any of the WLSs.

As can be seen from the above table, two divisional offices had not assessed the requirement of binoculars, wireless sets and night vision devices. Further, availability of all the above mentioned equipment was inadequate for patrolling and combat poaching in all the WLSs. Shortage of equipment was mainly attributable to inadequacy of funds.

Audit observed that four reported cases of tiger poaching had occurred during 2015-16 in VTR and the VTR management was unaware about poaching due to inadequate patrolling and necessary equipment like binocular, wireless set etc. The incident came to the notice of the VTR Management only after information was provided by a Delhi based Non-Governmental Organisation³³ and Wildlife Crime Control Bureau (January 2016). Scrutiny of records further disclosed that, except for deployment of untrained casual labourers in the tiger reserve, wireless network did not cover all the areas of the reserve, GPS patrolling was not in place and firearms were not provided to field staff. The NTCA had also observed (March 2016) that Range officers/divisional officers had failed to monitor patrolling on a day to day basis.

³² Udaipur and Gautam Buddha

³³ Wildlife Protection Society of India.

The Department agreed with the audit observation and assured that remedial action would be taken in this regard.

Recommendations:

- *The Department should ensure sufficient patrolling/anti-poaching camps for all the WLSs. The Department should also ensure that personnel are properly trained and equipped.*
- *The Department may consider developing anti-poaching systems using new technologies such as thermal imaging cameras etc.*

2.11 Conservation and protection of bird sanctuaries

Five Bird sanctuaries (BSs) were created in the State between 1987 and 1997 to protect the bird diversity in the area. These BSs spread over an area of 99.57³⁴sq. km. in four districts. The Department provided only ₹ 1.51 crore for management of these BSs during 2012-17 against which ₹ 1.46 crore were spent by the respective divisions. No dedicated post of front line staff was sanctioned by the Department for protection and conservation works of the BSs. The deficiencies noticed (May-July 2017) in the conservation and protection of bird diversity in these sanctuaries were as under:

- ***Study and documentation of flora and fauna***

As per WII guidelines, field based wildlife survey of flora and fauna was to be conducted so that appropriate conservation measures can be developed. It was noticed that, study and documentation of the flora and fauna, had not been carried out in two³⁵ of the five BSs. Thus, no information, about the important species of birds (migratory and native both) and other fauna and flora, was available in the divisional offices. It was further noticed that in the three³⁶ BSs, where the information was available, the concerned divisions had also not carried out any conservation works for the sanctuaries.

The Department agreed (December 2017) with audit observation and attributed the failure in study and documentation of flora and fauna to shortage of field manpower.

- ***Survey and estimation of birds***

As per WII guidelines, survey and estimation of the bird population and analysis of water quality in the sanctuary area were required. Audit scrutiny revealed that estimation of birds and analysis of water quality of the water bodies were not carried out in Kawar and Kusheshwar Asthan sanctuaries. In the remaining three³⁷, water quality tests were carried out belatedly i.e.,

Absence of study and documentation of flora and fauna, inadequacy of plantation works, absence of water quality tests etc., indicated lack of conservation measures in bird sanctuaries.

³⁴ Baraila Jheel (Vaishali): 1.98 sq.km; Kawar Jheel (Begusarai): 63.12 sq.km.; Kusheshwar Asthan (Darbhanga): 29.22 sq.km.; Nagi Dam (Jamui): 1.92 sq.km. and Nakti Dam (Jamui): 3.33 sq.km.

³⁵ Kawar Jheel and Kusheshwar Asthan

³⁶ Baraila Jheel, Nagi Dam and Nakti Dam

³⁷ Nagi Dam, Nakti Dam (2014-15) and Baraila (2015-16)

after a lapse of more than 18 years since their notification. Estimation of birds and analysis of water quality were not carried out as the Department had not provided funds to the divisions.

The Department, while admitting deficiencies in skill and capacity of field staff for such specialised activities, assured that estimation of bird population would be conducted.

- ***Plantation works***

Conservation of plant species is imperative for bird nesting and roosting. Except in Kawar Jheel, no trees were planted in any of the bird sanctuaries up to 2014-15. Though, 2,350 trees were planted in three³⁸ bird sanctuaries during the period 2015-17, they did not serve the purposes of nesting and roosting of birds.

The Department, while agreeing that plantation of selected species was required for bird sanctuaries, assured that plantation works would be done in future for nesting and roosting of birds.

- ***Protection of Bird Sanctuaries***

It was noticed during audit that there was no system of patrolling in any of the five bird sanctuaries and only untrained casual labourers were deployed as watchers, during the winter season due to inadequacy of funds and lack of field staff in the respective divisions.

- ***Territorial contiguity of the sanctuary***

The total notified area (1.98 sq. km.) of Salim Ali Jubba Sahni (Baraila) Jheel BS was scattered in 21 non-contiguous patches and surrounded by eight villages which affected the management of the WLS. No plan was considered by the Department (March 2017) to notify the additional areas to ensure territorial contiguity of the sanctuary.

The Department stated (December 2017) that a proposal to rationalise the extent of the sanctuary as a single or at best of a few contiguous areas was under consideration. However, the Department did not furnish any evidence of the matter being under consideration and the fact remains that no measures to ensure territorial contiguity of the sanctuary has been initiated even 20 years after notification.

- ***Non-acquisition of land for Birds Sanctuaries***

The Collector³⁹ is authorised⁴⁰ to initiate proceeding under the Land Acquisition Act, 1894 to acquire the notified land for WLSs. Further, the Chief Wildlife Warden was to ensure the acquisition of notified land of sanctuaries.

³⁸ Baraila: 1,000 in 2016-17; Nagi Dam: 1,250 in 2015-16 and Nakti Dam: 1,000 in 2016-17

³⁹ To be appointed by Government of Bihar for the purpose of acquiring land.

⁴⁰ Section 25 of the Wildlife (Protection) Act, 1972

The entire notified land of Kusheshwar Asthan BS was under the ownership of local people despite notification (1994).



Cultivation in Kusheshwar Asthan BS

Out of five bird sanctuaries (BSs) in the State, it was noticed that notified land was not acquired in two sanctuaries. The entire notified area (29.22 sq. km) of 'Kusheshwar Asthan BS' was under the ownership of the local people since its notification (1994) as the Department had not initiated any action to acquire the notified land (May 2017). The notified land was being used for cultivation as the right of ownership was vested with the local people and conservation activities for flora and fauna could not be carried out.

Similarly, in Kavar Jheel BS, out of total notified (June 1989) land of 63.12 sq. km, only 6.18 sq. km. (10 per cent) was under the control of the Department. It was further noticed that the Bihar State Wildlife Board had decided (April 2017) to reduce the area of sanctuary to 30 sq. km. due to non-settlement of land disputes with the local villagers.

The Department agreed (December 2017) with the audit observation and stated that rationalisation of their areas and extent could not be done as these BSs were situated within intensely populated agricultural land.

2.11.1 Wetland Conservation

Under the National Wetland Conservation Programme (NWCP), two types of works *i.e.*, preparation of Management Action Plans (MAP) and Research Projects for conservation and judicious use of wetlands⁴¹, are to be carried out to prevent their further degradation. However, this programme was merged (January 2013) with a centrally sponsored scheme, National Plan for Conservation of Aquatic Eco-systems (NPCA).

Out of five bird sanctuaries in the State, three bird sanctuaries⁴² have been identified as major wetlands. However, no research activity on flora and fauna had been carried out, except in Baraila Jheel (2015-16). MAPs of two wetlands (Kusheshwar Asthan and Bariala) had also not been prepared by the Department (November 2017) despite receipt (August 2012) of ₹ 16 lakh from GoI for the purpose. Consequently, the wetlands faced enormous biotic⁴³ and abiotic⁴⁴ pressure. No works were also executed in the State under NPCA (December 2017).

⁴¹ Wetlands occur where the water table is at or near the surface of land or where the land is covered by water.

⁴² Kavar Jheel Bird Sanctuary, Begusarai; Kusheshwar Asthan Bird Sanctuary, Darbhanga; and Salim Ali Jubba Sahni Baraila Bird Sanctuary, Vaishali.

⁴³ Biotic: Uncontrolled siltation and discharge of waste water, weed infestation etc., adversely affecting the flora and fauna.

⁴⁴ Abiotic: Shrinkage of area due to encroachment, habitat destruction and loss of biodiversity due to anthropogenic pressure, loss of aquifers due to hydrological intervention etc.

Recommendation: The Department should ensure proper conservation and protection measures in BSs and acquire the notified land to ensure territorial contiguity, or alternatively negotiate a course of action in consultation with the local community for conservation.

2.12 Conservation and protection of Gangetic Dolphin Sanctuary

The Vikramshila Gangetic Dolphin Sanctuary (VGDS) was notified (1991)



Gangetic Dolphin

for the protection, multiplication and development of Gangetic Dolphins. This sanctuary extends over a stretch of about 60 kms of river Ganga in Bhagalpur district. Besides, the GoI declared (October 2009) the Gangetic Dolphin as the National Aquatic Animal of India. As per latest estimation report (May 2014), a maximum of 127 Gangetic

Dolphins were sighted in the Dolphin sanctuary area. The Department provided only ₹ 43 lakh for management of VGDS during 2012-17 against which ₹ 30 lakh was spent on protection work. No dedicated post of front line staff for this sanctuary was sanctioned by the Department and management plan was also not finalised (July 2017) by the Chief Wildlife Warden, Bihar.

According to the action plan (2013) for conservation of Gangetic Dolphin, five major activities were to be carried out. Deficiencies noticed (July 2017) in the conservation and protection of VGDS against these activities are mentioned below:

- **Scientific Research and Monitoring**

No study on mortality of river dolphins in the Dolphin sanctuary area was carried out by the Department (October 2016) to identify the causal factors and take up remedial measures, though envisaged in the action plan. Though the Department had entrusted (October 2016) a University professor⁴⁵ to conduct a study on the sanctuary, the report was yet to be received (July 2017). Thus, critical stretches⁴⁶ of this species in the sanctuary area over the River Ganges remained unidentified.

- **Education and awareness programme**

Participation of traditional fishing communities and other riparian communities in education and awareness programmes is essential for Dolphin conservation. Audit observed that the Department did not carry out any education and awareness campaign in the sanctuary area. The same was also confirmed during beneficiary survey.

⁴⁵ Tilkamanjhi Bhagalpur University, Bhagalpur, Bihar at a cost of ₹ 0.87 lakh

⁴⁶ The stretches that contain healthy breeding Dolphin population with long term survival potential.

Proper conservation of Gangetic Dolphin could not be ensured due to absence of Management plan and inadequacy of fund.

- ***Livelihood security to river dependent communities***

The fishing community is mainly dependent on fish caught from rivers. Many of their fishing gears are a threat to the Dolphins. Some of them practice oil fishery, using Dolphin oil and meat as bait for the target fishes. Therefore, provision of livelihood security for the local stakeholders is essential for Dolphin conservation.

Audit noticed that fishermen were not being encouraged to adopt alternative livelihood. Against the requirement of minimum 12⁴⁷, only eight 'Dolphin Mitras'⁴⁸ were deployed in the sanctuary area for taking care of Dolphins. Considering the vast stretch of the sanctuary (60 km), the deployment of 'Dolphin Mitras' was insufficient to ensure protection of the Dolphins. Six cases of death of Dolphins were noticed during 2014-17, of which, two deaths were due to shortage of water.

- ***Creation/extension of protected areas***

The Gangetic Dolphin moves and disperses to more than 100 km, especially during floods. During other seasons also, they keep on moving and dispersing. There is only one protected area of about 60 km *i.e.*, VGDS. Thus, the length of the Dolphin sanctuary was required to be extended as envisaged by the GoB in its Action Plan. However, no proposal was made by the Department in this regard till date (July 2017).

- ***Protection of Dolphin and its habitat***

The Department did not prepare any fishery management plan to make fishing sustainable and to reduce the risk to the Dolphin and other aquatic wildlife as required. During beneficiary survey/interaction, the local fishermen reported that fishermen from outside the area, used mosquito nets for fishing in the sanctuary area thereby affecting the prey base of the Gangetic Dolphins. This indicated that the Department failed to prevent the use of detrimental fishing methods for protection of the Dolphins.

Further, according to the Zoological Survey of India, water quality is important for survival of fishes, which are an important source of food for Gangetic Dolphins. Hence, water quality needs to be tested and documented annually.

Audit observed that since inception of the Dolphin sanctuary in 1991, water quality of River Ganges in the sanctuary area was analysed only once in May 2014 while preparing the management plan. According to the test report, the presence of high level of organochlorines, heavy metals and other toxic chemicals in the river water, sediments, invertebrates, fish and tissues of the Dolphins posed serious threat to survival of the Dolphins. The reasons for water pollution were mainly attributable to:

⁴⁷ As assessed by the concerned DFO.

⁴⁸ 'Dolphin Mitras' are local fishermen, engaged on a contractual basis in the VGDS for protection of dolphins.

- (i) Use of fertilizers and pesticides by the nearby farmers of both banks of the river. The residues of these agro-chemicals are channelized to the river directly with run-off resulting in the chemical pollution of the River.
- (ii) Discharge of raw sewage in the river channel from urban settlements, and
- (iii) Dumping of solid waste in the river channel/along the Ganga bank.

The Department did not initiate remedial action to overcome the threats to the Dolphin sanctuary (July 2017) and stated (December 2017) that after finalisation and approval of the management plan, all the programmes of VGDS would be implemented.

Recommendation: The Department should immediately take effective steps for conservation and protection of the Gangetic Dolphin.

2.13 Medical facility for wild animals

Monitoring of health of wild animals and treatment of various diseases are *sine-qua-non* for survival and conservation of wildlife.

During audit, it was noticed that neither the posts of veterinary doctors and nursing staff were sanctioned by GoB nor was any medical centre established in any of the 12 WLSs. This indicated that the wild animals did not get any medical facility at all. In case of death, the post-mortem of wild animals was carried out by the veterinary doctor posted in the nearest town hospital.

It was noticed that some unknown disease had affected the wildlife in Rajgir WLS resulting in the death of 23 Spotted Deer (June 2013) within the space of a few days. In the absence of medical facilities in the sanctuary, no remedial action could be taken. Further, post mortem could not be conducted in time and reasons for the death could not be identified.

The Department admitted (December 2017) that wildlife veterinary facilities were required and stated that necessary steps would be taken to provide the veterinary doctors and for establishment of veterinary care centres in big WLSs.

2.14 Monitoring and Evaluation

2.14.1 Inadequate monitoring

The Bihar Forest Manual prescribes monitoring visits schedule⁴⁹ for all officers of forest services and each officer is required to submit inspection report to the respective controlling officer.

Inspection/monitoring reports of WLSs were not available in any of the divisional offices test-checked, in the absence of which adherence to the monitoring schedule could not be assessed.

⁴⁹ Inspection schedule of officers are as follows:

CF: Minimum ten days in a month, DFO: (1) November to June – 14 to 15 days in a month.
(2) Other months – five to six days in a month, ACF: Minimum 15 days in month

GoB did not sanction posts of veterinary doctors and nursing staff. No medical centre was also established in any of the 12 WLSs.

The Department stated (December 2017) that inspection/monitoring of the three WLSs (VTR, Bhimbandh and Kaimur) had been carried out by higher officials and the officers would be instructed to ensure proper documentation in future.

2.14.2 Inadequacy of State Board of Wildlife meetings

Against the requirement of 10 meetings of SBWL during 2012-17, only two meetings were organised.

According to Section 6 of Wildlife (Protection) Act, 1972, the State Government shall constitute a State Board of Wildlife (SBWL) within a period of six months from the date of commencement of the Wildlife (Protection) Amendment Act (WPAA), 2002 to advise the State Government in formulating policies for protection and conservation of wildlife.

The WP Act specified that the Board should meet at least twice a year. During the period of 2012-17, only two meetings (January 2013 and June 2015) of SBWL were held. Against the requirement of 27 meetings, only seven (26 per cent) meetings were held since the constitution of the SBWL. Inadequacy of SBWL meetings indicated lack/absence of policy formulation for protection and conservation of wildlife.

During the exit conference, the Department assured that necessary steps would be taken to hold the SBWL meetings as prescribed.

Recommendations: *The Department should ensure that periodic meetings of SBWL are organised for formulation of protection and conservation policies.*

2.15 Conclusion

The management of Valmiki Tiger Reserve and other sanctuaries needs improvement as it suffers from deficiencies in manpower, funds management, conservation efforts and monitoring. Acute shortage of manpower affected the conservation and protection measures in Wildlife Sanctuaries (WLS).

Out of 12 sanctuaries in the State, management plans for nine sanctuaries were not finalised by the Department. Thus, the requirement of protection and conservation and site specific inputs for conservation and protection of wild animals, birds as well as Gangetic Dolphin could not be ensured. In the absence of management plan, the State was deprived of central assistance for nine sanctuaries.

Estimation of population of wild animals (except tiger) including endangered/near threatened species in WLSs was not carried out during 2012-17. Department had not prepared any plan to reduce the anthropogenic pressure in WLSs, despite the fact that villages were either surrounded by core areas or were situated in core areas. In two bird sanctuaries (Kawar Jheel and Kusheshwar Asthan) the notified land was not acquired by the Department. Conservation measures undertaken in the Bird sanctuaries and Vikramshila Gangetic Dolphin Sanctuary were insignificant. Protection measures were inadequate in Valmiki Tiger Reserve and totally absent in four WLSs.

