

## **BLOCK 3**

# **CONSERVATION LEGISLATIONS IN INDIA**

THE PEOPLE'S  
UNIVERSITY

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## BLOCK 3 CONSERVATION LEGISLATIONS IN INDIA

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Block 3 “Conservation Legislations in India” deals with the laws on the forest, wildlife, biodiversity and water bodies.

Unit 9 “Forest” deals with the nature of policies and regulations on forest conservation.

Unit 10 “Wildlife” deals with the features of the Wild Life (Protection) Act, 1972 and the Wildlife (Protection) Rules, 1995.

Unit 11 “Biodiversity” will give you an overview of the Biological Diversity Act, 2002, the functions of the National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs) and Biodiversity Management Committees (BMCs).

Unit 12 “Conservation of Water Bodies” delves into the National River Conservation Plan and the features of the Ganga Action Plan Phase-I and Phase-II. This unit will also provide an overview of the National Mission for Clean Ganga, the features of the Wetland (Conservation and Management) Rules, 2010 and the National Wetland Conservation Programme.

### Objectives

After studying this block, you should be able to:

- discuss the features of the National Forest Policy, 1952;
- discuss the features of the National Forest Policy, 1988;
- discuss the features of the Forest Conservation Act, 1980;
- discuss the features of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006;
- explain the features of the Wild Life (Protection) Act, 1972;
- explain the features of the Wildlife (Protection) Rules, 1995;
- explain the features of the Biological Diversity Act, 2002;
- describe the National River Conservation plan of India;
- explain the Ganga Action Plan Phase-I and Phase-II;
- explain the features of the National Mission for Clean Ganga;
- explain the features of the Wetland (Conservation and Management) Rules, 2010; and
- describe the National Wetland Conservation Programme.

We hope that after studying this block you will acquire an understanding of the conservation legislation in India.

Wishing you success in this endeavour!

### Structure

- 9.1 Introduction
- 9.2 Objectives
- 9.3 The National Forest Policy, 1952
- 9.4 The National Forest Policy, 1988
- 9.5 The Forest Conservation Act, 1980
- 9.6 The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006
- 9.7 Let Us Sum Up
- 9.8 Key Words
- 9.10 Suggested Further Reading/References
- 9.11 Answers to Check Your Progress

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### 9.1 INTRODUCTION

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‘Forest’ in a narrow sense means trees on land which are not for agricultural use. But in the broadest sense, it refers to biodiversity—an interrelationship between forests, humans and other species. Forest is instrumental in securing sustainable development. Since industrialization, deforestation is on the rise and ecological imbalance trends are globally evident. Certainly, deforestation can be termed as one of the leading factors for climate change. According to the Food and Agriculture Organization (FAO) of the United Nations, the State of World Forest Report 2020 mentioned that only 30.8 per cent of the global land area is covered by forest. Of the total 30.8 per cent, more than half of the forest is found only in five countries viz., the Russian Federation, Brazil, Canada, the United States of America and China. The report further states that in the last three decades i.e., from 1990 to 2020 forests have decreased from 32.5 per cent to 30.8 per cent and the major contributor to the decline is agricultural expansion. This decline is explicit in the African and South American continents. However, from 2010 to 2020 a net gain in the forest was observed in Asia. The report demands concerted efforts from the global community. As a result, the United Nations declared 2021-2030 as the decade of Ecosystem Restoration to reverse the forest loss and its biodiversity. Also, the United Nations Strategic Plan for Forests 2017-2030 (UNSPF) strives to increase forest cover and enhance biodiversity. These strategies are extended to the "2030 Agenda for Sustainable Development, the Paris Agreement adopted under the UN Framework Convention on Climate Change, the Convention on Biological Diversity, the UN Convention to Combat Desertification, the United Nations Forest Instrument (UNFI)". UNSPF has identified Six Global Forest Goals. The Global Forest Goal 5 necessitates enhancement of Forest laws and governance which includes

strengthening of “sub-national forest authorities”. Law and its application through authorities are viewed as one of the key elements in reversing forest degradation.

India, the second most populous country in the world, stands tenth in forest cover globally. It has around 24 per cent of the total geographical area under the forest cover however it is still short of the committed figure of 33 per cent. The role of law, policy and enforcement agencies is crucial in achieving global forest standards, the same has been reiterated by the United Nations Strategic Plan for Forests 2030 (UNSPF). In India, policy and regulations on Forest Conservation date back to 1865. Colonial lawmakers passed the first law in 1865 and subsequently amended it until 1927. In independent India, Constitution offered protection to the forest and the first National Policy was introduced in 1952. In this unit, we will discuss the nature of policies and regulations on forest conservation.

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## **9.2 OBJECTIVES**

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After studying this unit, you should be able to:

- discuss the aim, objectives and rationale behind the introduction of forest policies in India;
- discuss the features of the National Forest Policy, 1952;
- discuss the features of the National Forest Policy, 1988;
- discuss the features of the Forest Conservation Act, 1980; and
- discuss the features of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

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## **9.3 THE NATIONAL FOREST POLICY, 1952**

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The Constitution of India entrusted significant value to the protection and preservation of the forests. An explicit provision in this regard exists in Part IV – Directive Principles of State Policy of the Constitution. Article 48A was inserted by the Constitution (Forty-second Amendment) Act, 1976. Article 48A reads as follows: “48A. Protection and improvement of environment and safeguarding of forests and wildlife. —The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country”. The Directive Principles of State Policy are not enforceable, but certainly, it creates a moral obligation on the State to consider the principles in future as they are fundamental to the governance of the State. If not law, at least the government is morally bound to frame some policy. Another constitutional reference to the forest can be traced to Schedule VII of the Constitution. List III – Concurrent List contains Entry 17A – ‘Forest’, inserted by the Forty Second Constitution Amendment 1976. Before 1976 it was on the State List. Article 246 contains three lists viz., Union, State and Concurrent. Under the Concurrent list, both the Union legislature and State legislature could make laws on the conservation of ‘forest’. The Constitution

also casts a duty on every citizen of India to protect and improve forests. Article 51-A (g) states that every citizen should "protect and improve the natural environment, including forests, lakes, rivers and wildlife, and to have compassion for living creatures".

Since 1950, the government introduced policies to regulate forests which were later replaced by laws. In recent times, the Parliament passed the 'Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006' also known Forest Rights Act. Independent India formulated its first forest policy in 1952. But any examination of the existing laws on forests requires a study of the colonial past. In colonial India, the British introduced the Forest Act of 1865 as the first legislation to consolidate and legitimize the authority over forests as it remained administratively unorganised leading to overlapping decision makings. The 1865 Act was successively replaced by the Forest Act 1878, Act XII of 1891, Act V of 1901, and Act XV of 1911. The 1865 Act empowered the local government—to declare any forest as 'government forest' without affecting the interest of the local people, to prepare rules relating to the governance and preservation of the forest and pronounce punishments for any infringement of the rules. Soon after its enforcement, the administrators who were in charge of the implementation of the Act identified its shortcoming of the Act as firstly, it generated enormous conflict between the revenue department and forest department. Forest officers accused revenue officers of vested interests in giving leverages to the people which adversely impacted the conservation of the forest. Secondly, the Act dealt only with the government forest and excluded the private forest thus completely undermining the purpose of the law. Thirdly, the controls over the forest by the local government were seen as adverse to the customary rights of the people. Lastly, many administrators were perplexed due to the complexities in the approach of the State in governing the forest. Many administrators believed that the State should exercise complete control over the forest and others opposed it. The dissenters demanded respect for the customary rights of the communities. All these shortcomings were discussed and debated in the First and Second General Conferences in 1874 and 1875 at Allahabad and Shimla respectively. After the 1875 Conference, the 1865 Act was replaced by the Forest Act 1878.

The Forest Act of 1878 had the following salient features: Firstly, it empowered the government to declare any forest as a 'reserved' State Forest. It classified forests into "reserved state forests", "protected forests" and "village forests". Secondly, it identified offences such as theft of forest produce, and prevention of harm to the forest through fire among others. Forest officers were given police powers. Thirdly, the Act had special provisions on the "village forests". Under this category, the government offered protection to the village forests against any trespass or loss as it was used by the village communities and private persons. Fourthly, the rights of the users in the forests were subjected to certain limitations. One of the

limitations stated that the user cannot have the proprietary right over the land or property. It only extended to the temporary use of the forest. Soon after its implementation, dissenting views emerged against the Act. One of the prominent issues was the identification of limitations on the proprietorship of the forest and forest products. Other issues included untrained officials and financial constraints, overlapping of powers among the authorities, and tensions between the governance and social practices due to persistent supervision by the forest authorities. Tribal people were dependent on the forest products for their livelihood and the use of forest products required permission from the forest officials which appeared extremely cumbersome and time-consuming. Also, many free grazing lands were included in the reserved forest category which created discontentment among the locals as restrictions were imposed on them. Meanwhile, the last colonial law on the forest was passed in the year 1927. The Indian Forest Act of 1927 enhanced the governmental control on the forest including private forests, strict regulations were laid down on the rights of the people on forest and its produce and consolidated the practices of the forest officials to maintain steady growth in the forest revenues and elaborated the offences and punishments relating to the forest. Overall, the ecological regulations during colonial times were contested between the state's absolute authority vis-à-vis the rights of the people or community. Colonial forest laws were primarily framed with the intent to safeguard colonial fiscal interests in particular to secure timber. Irrespective of the above colonial ecological laws on the forest, the colonial lawmakers also declared the Imperial Forest Policy in 1894 which remained valid until 1947. The aim and objectives of the forest policy were—to promote the welfare of the country and serve the needs of the people; preserve forests to maintain climatic conditions. But the objectives were subjected to local interests such as fulfilling the agricultural needs and imperial interests. After 1894, the only second policy on the forest was framed in 1952 in post-colonial India.

The National Forest Policy 1952 was formulated to serve national needs. Overall, it identified six paramount needs of the nations such as 1) Efficient use of forest leading to high forest yield with least deterioration; 2) Enhance soil fertility in the river basins; 3) Plantation of trees for the general wellbeing of the people; 4) Increase food production by promoting progressive use of grazing, firewood and manure; 5) Use of timber and forest produce for defence, communications and industrial purposes; 6) To gain maximum revenue in consonance with the fulfilment of the above needs.

It classified forests on a functional basis but the classification was not mutually exclusive. However, the underlining philosophy was national wellbeing. Forests were classified as—1. “Protection forest” to serve climatic and physical needs; 2. “National Forest” for defence, communications, industry and general purposes of public importance; 3. ‘Village forests’ to generate firewood, timber, grazing and forest product to serve local and agricultural requirements; 4. “Tree lands” fell outside the scope of forest

administration nevertheless they could significantly contribute to the improvement of the physical conditions of the country. National importance could limit the rights of the residents of the neighbouring areas on the forest and its produce and the claim of agriculture on the forest land. Though the policy entrusted ownership rights to the individuals over the private forest, it could also be limited in the national interest if it affected—the general welfare, physical, climatic and economic conditions. One-third of the total land is aimed to be maintained under forest cover. As per the policy, the States should undertake afforestation.

Forest grazing was highly contested during colonial rule. National Policy of 1952 explicitly favoured regulation of grazing on the following principles: Firstly, prohibition of grazing in the newly or young plantations and also be minimal in the protected forest. Secondly, imposition of reasonable fees on grazing to secure quality in grazing and cattle breeding as the policy framers believed that “free and indiscriminate forest grazing is, therefore, a serious disservice to cattle breeding.” Thirdly, restrict continuous grazing and introduce rational grazing compatible with the scientific forestry with the participation of the villagers. As a result, the sheep and goats were restricted from forest grazing. As an alternative measure, the policy mentioned that a special reserve is created with strict rotational control.

The policy also proposed to restrict shifting cultivation which was prominent among the aborigines. Shifting cultivation was viewed as detrimental to forest growth. Such restriction, however, should be persuasive and not coercion. As a part of effective forest management and to secure sustained yield through forest legislation, the policy proposed forest education and training to the forest official. The whole object of the policy was to develop a common outlook, forest research and forest budget.

Forest Policy of 1952 was primarily driven by a narrow agenda of national interest. It imbibed inherent contradictions which were explicitly present during the colonial rule. Tribal rights needed more rational consideration as observed by the Scheduled Areas and Scheduled Tribes Commission constituted in 1960 under the Chairmanship of U N Dhebar.

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## **9.4 THE NATIONAL FOREST POLICY, 1988**

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The Forest policy of 1952 did not withstand the sufferings of the tribal population and forest deforestation. According to one study (Joshi 1983), there was a decline in the geographical area under the forest from 24 per cent in 1961 to 22 per cent by the end of the 1970s. Also, out of the total area sanctioned for regeneration i.e., 292,648 sq. km only 13,648 sq km were regenerated. This impending situation was well expressed in the National Forest Policy of 1988. The policy stated that, “However, over the years, forests in the country have suffered serious depletion. This is attributable to relentless pressures arising from the ever-increasing demand for fuel-wood, fodder and timber; inadequacy of protection measures; diversion of forest

lands to non-forest uses without ensuring compensatory afforestation and essential environmental safeguards; and the tendency to look upon forests as revenue earning resource. With the need to review the situation and evolve, for the future, a new strategy of forest conservation has become imperative. Conservation includes preservation, maintenance, sustainable utilisation, restoration, and enhancement of the natural environment. It has thus become necessary to review and revise the National Forest Policy.”

To address the perplexing situation, the government introduced the National Forest Policy in 1988. The policy primarily had the following objectives viz.,

- To undertake environmental stability or ecological balance to overcome the depletion of forests.
- To conserve natural forests, and genetic resources and maintain biological diversity.
- To control soil erosion in the catchment areas of rivers, lakes and reservoirs which are prone to floods and droughts.
- To control the spread of dunes in Rajasthan and other coastal tracts.
- To increase forest cover by undertaking extensive afforestation and social forestry.
- To provide fodder, small timber, and firewood to the rural population and tribals.
- To enhance forest productivity in the national interests.
- To promote efficient use of forest produce.
- To generate awareness among all sections of society on forest conservation.

The 1988 policy adopted the following strategies to secure the above objectives.

- A. To secure a balanced ecosystem, the policy planned to bring two third of the mountain and hilly region under the forest cover; and one-third area under other regions.
- B. To undertake time-bound and need-based afforestation in the denuded and wastelands, the policy planned afforestation along the railway lines, roads, and rivers among others. Develop green belts in the urban and industrial areas. At the village level, encourage village communities to participate in the afforestation and modify land laws to support tree farming.
- C. On the management of the forests, the central government’s approval was mandatory. Restrictions will be imposed on the schemes and projects that interfered with ecologically sensitive areas. Scientific and technical methods will be adopted to enhance the forest cover.

- D. Rights and concession in the forest meant for bonafide use such as grazing, and firewood among others. Tribals and neighbouring communities were the bearers of the right. But such use should support the development of the forest. This policy mentioned that the rights of the tribals on forests should be safeguarded by the respective governments. Most of the communities majorly rely on the forest for firewood, the policy proposed to substitute it with alternative long-term solutions. For instance, fuel-efficient chulhas, biogas or solar energy.
- E. For the first time, the policy addressed the diversion of forest land for non-forest purposes. The government was obliged to treat the forest as a national asset and any diversion needed intense scrutiny from specified agencies about its social and environmental outcomes. Also, the miners were bound to repair and regenerate the lost forest. Government should not allow any private and public mining without an approved mine management plan.
- F. Tribal's role in the protection of forests seemed very crucial. It followed a reciprocal approach. On one hand, it recognized the customary rights of the tribals and on the other hand, they were engaged in safeguarding the forest. The policy acknowledges the degradation of forests by the contractors, hence to overcome this, the policy suggested the establishment of tribal cooperatives, labour cooperatives, government cooperatives etc. Also, for the advancement of tribals and the economy, it proposed the introduction of an integrated development programme. This included the regeneration of minor forests, development of forest villages and alternate energy sources.
- G. Alternative agricultural practices should be identified to restrict the shifting cultivation which was prominent among the tribals. This practice led to the degradation of the environment and land use.
- H. The policy also reflected on three major issues related to forest conservation viz., encroachments, fires and grazing. Grazing was addressed in the 1952 policy. Encroachments should be strictly dealt with as per the law. No regularization should be permitted. Forest fires were seen on the rise and they combated the natural regeneration of the forest. The policy suggested the adoption of improved and modern forest management practices to avert it. Uncontrolled grazing has seen another major menace against forest regeneration. Hence, to overcome it, the policy suggested measures such as community participation, levy of grazing fees, and the development of grazing fields.
- I. Forest-based industries will be permitted only if there is adequate raw material. They have to develop raw materials by employing the locals.
- J. Formal education and training to the farmers on the optimum use of their land and water seemed crucial and a part of the forest extension programme.

- K. Promotion of scientific forestry research to identify new priorities for the improvement of wastelands and regeneration of denuded forests. It also included the introduction of new measures to enhance the competency of forest professionals and scientists. The governmental agencies should generate periodic scientific data to improve forest management.
- L. Financial and Legal assistance should be provided at the Centre and the State levels to support the effective implementation of the policy and secure ecological balance.

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## 9.5 THE FOREST CONSERVATION ACT, 1980

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Besides the two national policies of 1952 and 1988, the Parliament also passed the Forest (Conservation) Act 1980. Initially, the 1980 Act was an ordinance issued by the Central Government in October 1980 and subsequently, it was converted into a law. 'Forest' was a State subject under the Seventh Schedule but in 1976 it was inserted into the Concurrent list and immediately thereafter the Government of India issued the Ordinance. The 1980 Act came into force on December 27, 1980, and it contained five sections. The Act included three salient features:

Firstly, the State Government cannot cease the 'reserved' forest or any portion from thereof. Additionally, the State Government cannot use any forest land for non-forest purposes. In both cases the prior approval of the Central Government was mandatory. Non-forest use however was exempted if it involved reafforestation. The major reason for this exemption was the denudation of forest cover in India.

Secondly, the Act established an Advisory Committee to advise the Central Government relating to the grant of approval for the cessation of reserved forest and conversion of any forest to a non-forest use. Later in 1988, two more provisions were added to this list which needed approval from the central government. They were—assignment of the forest by lease either to the private person or any other authority and for clearing of any forest land for reafforestation. The committee also advised the government on the other matters of afforestation. The powers and composition of the committee were determined by the Central Government.

In 1988, Parliament added Sections 3A and 3B to the Act. Section 3A laid down penalties for the contravention of Section 2 i.e., failure to seek approval from the central government while converting forest land to a non-forest use. The punishment included simple imprisonment which may extend to fifteen days. Section 3B included offences by the authorities and government departments violating section 2. The Department of the Government, the head of the department and all persons who were responsible for the conduct of the business under the Act shall be liable for the punishment except if it is committed without the knowledge of that person or the person has taken all due diligence to prevent the commission of a such offence.

Thirdly, the Central Government could make rules under this Act with the approval of the Parliament. The government passed rules in 2003 and amended them in 2004, 2014 and 2017.

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## **9.6 THE SCHEDULED TRIBES AND OTHER TRADITIONAL FOREST DWELLERS (RECOGNITION OF FOREST RIGHTS) ACT, 2006**

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The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 also referred to as Forest Rights Act (hereinafter will be referred to as 'FRA') recognized the symbiotic relationship between the tribals and the forests. It is well evident from the fact that tribals share proximity with the forests as they not only draw their livelihood from it but they also possess traditional wisdom to conserve it. The policy of 1988 had already recognized the symbiotic relationship and it was statutorily recognized by the FRA in 2006. The Act received the President's assent on December 29, 2006, and it was published in the official gazette on January 2, 2007. The Act contains fourteen sections divided into six chapters. At the outset, the Act outlined the objectives as:

“An Act to recognize and vest the forest rights and occupation in forest land in forest dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recorded; to provide for a framework for recording the forest rights so vested and the nature of evidence required for such recognition and vesting in respect of forest land. Whereas the recognised rights of the forest-dwelling Scheduled Tribes and other traditional forest dwellers include the responsibilities and authority for sustainable use, conservation of biodiversity and maintenance of ecological balance and thereby strengthening the conservation regime of the forests while ensuring livelihood and food security of the forest-dwelling Scheduled Tribes and other traditional forest dwellers; And Whereas the forest rights on ancestral lands and their habitat were not adequately recognised in the consolidation of State forests during the colonial period as well as in independent India resulting in historical injustice to the forest dwelling Scheduled Tribes and other traditional forest dwellers who are integral to the very survival and sustainability of the forest ecosystem; And Whereas it has become necessary to address the long-standing insecurity of tenurial and access rights of forest-dwelling Scheduled Tribes and other traditional forest dwellers including those who were forced to relocate their dwelling due to State development interventions.”

The above objective can be summarized as:

First, the Act relates to the Scheduled Tribes and Other Traditional Forest Dwellers. It recognizes and lays down the procedure for the forest rights which were ignored in the past.

Second, these rights are coupled with responsibilities of sustainable use, conserving biodiversity, maintaining ecological balance and serving food security.

Third, it acknowledges that the previous governmental approach toward tribals and traditional forest dwellers was marred with historical injustice.

The salient features under the Act are as follows:

A. It presents the list of rights the Scheduled Tribes and the other traditional forest dwellers entitled to:

- Every scheduled tribe whether individual or in a group including other traditional forest dwellers was declared of having a right to hold and live in the forest land under the occupation either for habitation or for self-cultivation.
- Possessed community right like *nistar*. Community right further extended to the use and entitlement of fish, other products of water bodies, grazing and access to traditional seasonal resources.
- Entitled to right of ownership of the traditional minor forest produce. Right to ownership included the right to dispose of, collect and use.
- Rights of the primitive tribes and pre-agricultural communities on community tenures of habitat and habitation.
- Right to convert *pattas* or leases or grants on forest land issued by the governmental authorities.
- Right to settlement and conversion of all forest villages into revenue villages.
- Entitled to all other rights which are mentioned or declared in any State legislations or Autonomous Regional Council or Autonomous District Council.
- Right to access intellectual property and traditional knowledge rights in the community related to biodiversity and cultural rights.
- Entitled to rehabilitation and alternative land if they are displaced from their forest lands.

Apart from the above-specified rights, they were also entitled to unspecified rights. The above rights are not exhaustive. However, the Act mentioned that the tribals or other forest dwellers have no right to traditional hunting of any species of wild animal. The Act also enumerated a list of purposes for which the diversion of forests was permitted but such conversion should be less than one hectare and the felling of trees should not exceed seventy-five per hectare, but such conversion should be recommended by the concerned Gram Sabha. The purposes for which the forest could be converted were: (a) schools; (b) dispensary or hospital; (c) Anganwadi; (d) fair price shops; (e)

electric and telecommunication lines; (f) tanks and other minor water bodies; (g) drinking water supply and water pipelines; (h) water or rainwater harvesting structures; (i) minor irrigation canals; (j) non-conventional source of energy; (k) skill up-gradation or vocational training centres; (l) roads; and (m) community centres.

The holders of the above rights also have duties. Section 5 states the duties as:

- A. To protect the biodiversity, forest, wildlife, catchment areas, water sources, and other ecologically sensitive areas.
- B. Object any destructive practices to the habitats and thereby ensure the protection of their natural and cultural heritage.
- C. the decisions of the Gram Sabha should provide access to the forest biodiversity and not be detrimental to wild animals, forest and biodiversity.

In addition to the above duties, Section 4 mentioned that the rights of Scheduled tribes and other forest dwellers in the critical wildlife habitats of National Parks and Sanctuaries can be modified or resettled. But such modifications or settlements need to fulfil certain conditions. These conditions are: firstly, the concerned authorities must have completed the vesting of rights. Secondly, they have concluded that the rights of the Scheduled Tribes and other forest dwellers will cause irreversible damage to the wildlife animals and their habitat. Thirdly, while imposing a limitation on the holder of rights to protect wildlife, the authorities must prepare and communicate the alternative package or resettlement to the Scheduled Tribes and other forest dwellers. Fourthly, the proposed resettlement or package should be consented by Gram Sabha in writing. Fifthly, the relocation is completed only after the land and facilities are provided to the holder of rights. Sixthly, no authority can convert the use of the land occupied under the relocation meant for the conservation of critical wildlife habitats.

The process for the vesting of rights is initiated by Gram Sabha. As a part of the process, the Gram Sabha decides the nature and extent of individual and community rights in the forest. It receives claims, consolidates them and after verification it prepares a map delineating the claimed area. Finally, it passes the resolution relating to the claims and submits the copy of the resolution to the Sub-Divisional Level Committee. Any person who is aggrieved by the decision of the Gram Sabha can file a petition before the Sub-Divisional Level Committee constituted by the State Government within sixty days from the date of the passing of the resolution. A final appeal against the decision of the Sub-Divisional Level Committee can be filed before the District Level Committee constituted by the State Government. The decision of the District Level Committee on the record of forest rights shall be final and binding. In addition to the above authorities, the State government will establish State Level Monitoring Committee to monitor the process of vesting of forest

rights and submit reports to the nodal agency i.e. Central Government Ministry of Tribal Affairs.

The concerned authorities are bound to conduct the business under the act with good faith and due diligence. Any violation of any provision of the Act or the rule, then such officer will be punished with a fine of rupees one thousand. Under this Act, the Central Government has the power to make rules.

### Check Your Progress 1

**Note:** i) Use the space given below for your answers.

ii) Check your answers with those given at the end of the unit.

1. What was the first law passed by the colonial lawmakers on the forest?

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2. Write a short note on the National Forest Policy, 1952.

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3. What are the salient features of the National Forest Policy, 1988?

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4. Write a short note on the Forest Conservation Act, 1980.

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5. Explain the features of the Scheduled Tribes and Other Traditional

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## 9.7 LET US SUM UP

Forest laws in India have an impressive history which spans from colonial times. Colonial lawmakers introduced forest laws to cater for their interests. For instance, the protection of forests gave more primacy to the procurement of timber needed for railway constructions and other purposes, as a result, the community rights on the forest were restricted. In post-colonial India, though the government introduced two policies in 1952 and 1988, it demanded practical inclusivity in the conservation of forests. The central government realized the previous shortcomings in forest conservation and followed a more inclusive path. As a result, in 2006 the Parliament passed FRA to secure the rights of tribals and other forest dwellers.

## 9.8 KEY WORDS

**Article 48A:** Protection and improvement of environment and safeguarding of forests and wildlife. —The State shall endeavour to protect and improve the environment and safeguard the forests and wildlife of the country.

**Article 51-A (g):** Article 51-A (g) states that every citizen should protect and improve the natural environment, including forests, lakes, rivers and wildlife, and have compassion for living creatures.

## 9.10 SUGGESTED FURTHER READING/REFERENCES

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## 9.11 ANSWERS TO CHECK YOUR PROGRESS

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### Check Your Progress 1

1. Forest Act of 1865 was the first legislation passed by the Britishers to consolidate and legitimize the authority over forests which previously remained administratively unorganized leading to overlapping decision makings. The 1865 Act empowered the local government—to declare any forest as a 'government forest' without affecting the interest of the local people, prepare rules relating to the governance and preservation of the forest and pronounce punishments for any infringement of the rules.
2. Please refer to section 9.3
3. Please refer to section 9.4
4. Please refer to section 9.5
5. Please refer to section 9.6

### Structure

- 10.1 Introduction
- 10.2 Objectives
- 10.3 Wildlife Conservation
- 10.4 The Wild Life (Protection) Act, 1972
- 10.5 The Wildlife (Protection) Rules, 1995
- 10.6 Let Us Sum Up
- 10.7 Key Words
- 10.8 Suggested Further Reading/References
- 10.9 Answers to Check Your Progress

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### 10.1 INTRODUCTION

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Wildlife is a major part of the ecosystem. India possesses extensive wildlife from the northern Himalayas to the Northeast region and from the southern lush green forests of Nilgiris to the Western ghats extending to Gujarat and Rajasthan. According to the National Wildlife Database Cell of the Wildlife Institute of India (WII), India has a network of 990 Protected Areas including 106 National Parks, 565 Wildlife Sanctuaries, 100 Conservation Reserves and 219 Community Reserves covering a total of 1,73,306.83 km<sup>2</sup> of the geographical area of the country which is approximately 5.27%. Wildlife is an essential part of the ecosystem and needs conservation. In this regard, the UN Sustainable Development Goal 15 has set the benchmark for every nation to secure the UN 2030 agenda. SDG 15 states that “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.” The major focus is on the conservation of wildlife. Since independence, various policies have been introduced to enhance and safeguard the wildlife in India. Some of the safeguards include the establishment of protected areas such as national parks, wildlife sanctuaries, conservation reserves and community reserves.

Conservation is further extended to endangered species such as Tiger reserves, Biosphere reserves and Elephant reserves. Multilevel tasks are undertaken by the government of India to offer protection to the extremely risked endangered species of plants and animals. For instance, with the concerted efforts of the government and civil society members, Project Tiger brought a stupendous increase in the tiger population in India. However, according to the UN Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) globally one million species are under immediate threat of extinction and it demanded comprehensive transformative changes both at the structural and functional levels. This

equally applies to India. So far, on wildlife protection, the Parliament has passed special legislation. In this unit, we would endeavour to discuss the features of the Wild Life (Protection) Act, 1972 and the Wildlife (Protection) Rules, 1995.

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## 10.2 OBJECTIVES

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After studying this unit, you should be able to:

- explain the features of the Wild Life (Protection) Act, 1972; and
- explain the features of the Wildlife (Protection) Rules, 1995.

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## 10.3 WILDLIFE CONSERVATION

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Legislations on wildlife conservation have certain colonial traces. An unprecedented level of hunting was prevalent in India. Colonial rule in India followed a subjective approach toward wildlife conservation. Wildlife preservation began with the preservation of the 'game'. Britishers often hunted animals such as woodcock, deer, wild dogs, bears, and the cheetah among others. To impose some restrictions, in particular, determined a closed season when the animals will not be hunted for the first time in 1879 the Britishers passed the *Nilgiris Game and Fish Preservation Act*. According to the Act, it aimed “to provide for the Protection of Game and Acclimatized fish in the district of the Nilgiris”. So during the closed season, the government imposed restrictions on the hunting of certain animals, birds and acclimatized fish. Any violation under the Act both pecuniary and simple imprisonment was awarded. According to the Act, animals for the game included bison, Sāmbhar, Ibex, jungle-sheep, deer of all descriptions, hares, jungle-fowl, peafowl, partridge, quail, and spur-fowl, or such birds or animals as the government determined. In the same year, the Britishers passed the *Elephants’ Preservation Act* to protect the killing and capture of wild elephants. Any violation attracted a fine and imprisonment. Moreover, the Act allowed the capture and killing of wild elephants only if the Collector issued a license for the same.

By the end of the nineteenth century i.e., in the year 1887, the Britishers passed the *Wild Birds Protection Act* and later repealed in 1912 by the *Wild Birds and Animal Protection Act*. This small legislation contained nine sections and a schedule. Schedule a specified list of birds and animals to whom the protection under the law was offered. Birds included Bustards, ducks, floricans, jungle fowl, partridges, peafowl, pheasants, pigeons, quail, sand-grouse, painted snipe, spur-fowl, wood-cock, herons, egrets, rollers, and king-fishers. The schedule identified animals as antelopes, asses, bison, buffaloes, deer, gazelles, goats, hares, oxen, rhinoceroses and sheep. The local government issued a notification to declare the ‘close time’ a period which can be either a whole year or a part of any year during which the capture, killing, selling and buying of the birds and animals mentioned in the schedule were prohibited. Any contravention according to the Act attracted a

fine and imprisonment. However, the Act permitted the killing and capture if it was needed for scientific research. The object of the law was primarily to protect the ‘harvesting’ wild animals and birds.

For the preservation of rare species, the Britishers passed *Bengal Rhinoceros Preservation Act 1932* to protect the one-horned rhino species. The Act prohibited the killing, capture and injuring of wild rhinoceros including an attempt. Any person who violated the offence under this Act then such person was punished with imprisonment of one month or a fine up to one thousand rupees or both. Besides the above laws, the imperial authorities also established Banjara Valley reserve, Corbett National Park, and Kaziranga Sanctuary. On the imperial conservation policy, author Vijaya Mandala concludes that “...conservation laws are primarily concerned with regulating hunting privileges, but did not wholly prohibit trade in wildlife products, the latter being a major factor in the decimation of flora and fauna (Mandala 2015: 90).”

## 10.4 THE WILD LIFE (PROTECTION) ACT, 1972

In post-colonial India, the Constitution of India recognized the conservation of wildlife. Article 48A inserted by Forty Second Constitution Amendment 1976 states, "Protection and improvement of environment and safeguarding of forests and wildlife. —The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country." It also includes a fundamental duty under Article 51A(g) as “to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.” Entry 17B i.e., ‘wildlife’ included under the Concurrent List i.e., List III of the Seventh Schedule of the Constitution of India. As per Entry 17B, both Parliament and State Legislature can make laws on 'wildlife'. As a result, Parliament passed the Wildlife (Protection) Act, 1972. The Act contains sixty-six sections divided into seven chapters and it has been amended in 1991, 2002 and 2006.

The main object of the Act is to protect wild animals, birds and plants to ensure the ecological and environmental security of the country. It identifies protected areas to conserve wildlife and establishes authorities to frame and implement wildlife policies. Section 2(37) defines ‘wildlife’ as “includes any animal, aquatic or land vegetation which forms part of any habitat”. ‘Animal’ as per Section 2(1) includes “amphibians, birds, mammals and reptiles and their young, and also includes, in the cases of birds and reptiles, their eggs”. The outline of the Act is mentioned in table 10.1.

**Table 10.1 Outline of the Wild Life (Protection) Act, 1972**

| S.No. | TITLE OF THE CHAPTER   | SECTIONS |
|-------|------------------------|----------|
| 1.    | Chapter I: Preliminary | 1 to 2   |

|     |                                                                                                               |                                            |
|-----|---------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| 2.  | Chapter II: Authorities to be Appointed or Constitutes under the Act                                          | 3 to 8                                     |
| 3.  | Chapter III: Hunting of Wild Animals                                                                          | 9 to 12<br>(sections 13 to 17 are omitted) |
| 4.  | Chapter IIIA: Protection of Specified Plants                                                                  | 17A to 17H                                 |
| 5.  | Chapter IV: Protected Areas                                                                                   | 18 to 38                                   |
| 6.  | Chapter IVA: Central Zoo Authority and Recognition of Zoos                                                    | 38A to 38J                                 |
| 7.  | Chapter IVB: National Tiger Conservation Authority                                                            | 38K to 38X                                 |
| 8.  | Chapter IVC: Tiger and Other Endangered Species Crime Control Bureau                                          | 38Y to 38Z                                 |
| 9.  | Chapter V: Trade or Commerce in Wild Animals, Animal Articles and Trophies                                    | 39 to 49                                   |
| 10. | Chapter VA: Prohibition of Trade or Commerce in Trophies, Animal articles, etc., Derived from Certain Animals | 49A to 49C                                 |
| 11. | Chapter VI: Prevention and Detection of Offences                                                              | 50 to 58                                   |
| 12. | Chapter VIA: Forfeiture of Property derived from Illegal Hunting and Trade                                    | 58A to 58Y                                 |
| 13. | Chapter VII: Miscellaneous                                                                                    | 59 to 66                                   |

For understanding the true nature and scope of the Act, we can classify the Act into two broad categories viz., firstly, to enumerate permissible areas and acts which are detrimental to the wildlife. Secondly, to enlist the constitution and functioning of the various government authorities established under the Act. The Act specifies the following acts and areas which are immediate threats to wildlife such as:

**A. Prohibition of Hunting of Wild Animals:** Hunting of wild animals is prohibited as per section 9 of the Act. The wild animals are mentioned under Schedule I, II, III and IV of the Act. But there are three situations in which hunting is permitted. First, if the Chief Wild Life Warden is satisfied that any wild animal has become dangerous to human life or is so disabled or diseased as to be beyond recovery and if the warden authorizes then the hunting is justified. Second, if a person kills or wound any wild animal in good faith i.e., to protect oneself or others in defence. The above two situations are mentioned in section 11. Third, if a wild animal is needed for education, scientific research and scientific

management, then the Chief Wild Life Warden will grant the permit in writing stating the reasons for hunting. The third ground of special purpose is mentioned under Section 12.

**B. Protection of Specified Plants:** The provisions relating to the specified plants were inserted in 1991 through amendment. The specified plants are mentioned in Schedule VI of the Act. Section 17A prohibits any person from willfully picking, uprooting, damaging, destroying, acquiring or collecting any specified plant from any forest land and any area specified by notification by the Central government. It also prohibits the possession, selling, offering for sale, or transferring by way of gift or transporting any specified plant whether alive or dead or part or derivative thereof. But the restrictions imposed in section 17A will be exempted by the Chief Wild Life Warden with the previous permission of the State government if the specified plant is needed for education, scientific research; collection, preservation and display in a herbarium of any scientific institution; or propagation by a person or an institution approved by the central government. These exemptions are mentioned under section 17B. Moreover, for the cultivation and dealing of the specified plants, the permission in writing is granted either by the Chief Wild Life Warden or any other authorized officer of the State Government.

**C. Protected Areas:** Chapter IV deals with Protected Areas. According to Section 2(24A), Protected Area means a National Park, a Sanctuary, a Conservation reserve or a Community Reserve. At the outset, we will discuss how protected areas are declared. Generally, the powers are vested with the State government. The process begins with the issuance of notification. Notification is the intention of the State government to declare a certain area as a protected area. After issuance of notification, the Collector is appointed to settle issues relating to the rights over the land to be acquired. Collector issues proclamation and conducts the inquiry into the claims. After the completion of the inquiry and the settlement of claims, the government issues a declaration. The declaration is the final order of the government that the area has been declared a protected area. The above procedure applies to all protected areas. After the declaration of the protected area, the Act prohibits certain acts. In a sanctuary, no person is allowed to remove wildlife and forest produce from a sanctuary. It prohibits destruction or damage or diversion of the habitat of the wild animal; and the diversion, stopping or enhancement of the flow of water into or outside the sanctuary. The Act prohibits the use of fire, chemicals, explosives or any other substances in the sanctuary in any manner which endangers any wildlife in the sanctuary. No individual is allowed to enter a sanctuary with any weapon except with the permission of the Chief Wild Life Warden. The above prohibitions to a large extent are also applicable to the National Parks, Conservation Reserve and Community Reserve. In addition, section

35(7) does not permit the grazing of any livestock in a National Park.

Conservation Reserve is “an area adjacent to the National Parks and Sanctuaries and those areas which link one protected area with another”. They are essential to protect landscapes, seascapes, flora and fauna. In the case of Community Reserve, section 36C (1) states that “the community or an individual has volunteered to conserve wildlife and its habitat, declare any private or community land not comprised within a National Park, sanctuary or a conservation reserve, as a community reserve, for protecting fauna, flora and traditional or cultural conservation values and practices.”

- D.** The Act includes a provision for the establishment of Zoos. Besides constituting the authorities, Section 38J states that no person shall tease, molest, injure or feed any animal or cause disturbance to the animals by noise or otherwise, or litter the grounds in a zoo.
- E.** Section 49B prohibits the commencement or carrying on business as a manufacturer or dealer or taxidermist or dealer in a trophy or uncured trophy or a dealer in any captive animals or a dealer in meat relating to Scheduled Animal except with the permitted license.

After we identified the protected areas and prohibited acts, we shall discuss the various authorities established under the Act. Every authority has a distinct task to undertake, its establishment and powers are laid down under the Act.

**Table 10.2 Authorities to be appointed under the Wild Life (Protection) Act, 1972**

| S.No. | Subject Area                                 | Authorities                                                                                                                | Sections    |
|-------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------|
| 1     | Key administrative Authorities under the Act | a. Director of Wild Life Preservation appointed by the Central Government.                                                 | Section 3   |
|       |                                              | b. Chief Wild Life Wardens; Wild Life Wardens and honorary Wild Life Wardens appointed by the State Government             | Section 4   |
| 2     | Boards for Wild Life                         | As per the Wild Life (Protection) Amendment Act 2002, the Central Government Constituted the National Board for Wild Life. | Section 5A  |
|       |                                              | The State Government constituted the State Board for Wild Life.                                                            | Section 6   |
| 3     | On the administration of Zoos in India       | The Wild Life Amendment Act 1991 empowered the Central Government to establish the Central Zoo Authority                   | Section 38A |

|   |                                |                                                                                                                      |                             |
|---|--------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------|
| 4 | For the conservation of Tigers | The Central Government under the Wild Life Amendment Act 2006 established the National Tiger Conservation Authority. | Section 38L                 |
|   |                                | The State Government established Steering Committee and the Tiger Conservation Foundation.                           | Section 38U and Section 38X |
|   |                                | It has established Endangered Species Crime Control Bureau also known as the Wildlife Crime Control Bureau           | Section 38Y                 |
| 5 | Adjudicatory Authority         | The State Government shall establish the Appellate Tribunal                                                          | Section 58N                 |

### I. Key Administrative Authorities and their Functions

Under the Act, the Chief Wild Life Warden enjoys extensive powers. Some of these powers and functions are catalogued below:

1. Permits the hunting of wild animals if the animal has become detrimental to public safety (section 11).
2. Authority to grant permits for hunting and use of specified plants for special purposes such as scientific research purposes (section 12, section 17B).
3. Issues license for the planting of specified plants (section 17C).
4. The collector should consult Chief Wild Life Warden in determining the claims of the landholder on lands within the limits of the sanctuary (section 24).
5. Impose restrictions on the entry of any person in the sanctuary (section 27).
6. Authority to manage and maintain all sanctuaries (section 33).
7. Power to enter any property, search, arrest and detention of any person in relation to the offences committed under this Act (section 50).
8. Offers reward to the person who assists in the detection of the offence (section 60B).

### II. Wild Life Boards, its Constitution, Powers and Functions

At the Centre and the State, the National Board for Wild Life and State Board for Wild Life are constituted. To further assist the National Board, the Act establishes Standing Committee.

## **National Board**

### **Members**

(a) the Prime Minister as Chairperson; (b) the Minister in-charge of Forests and Wild Life as Vice-Chairperson; (c) three members of Parliament of whom two shall be from the House of the People and one from the Council of States; (d) Member, Planning Commission in-charge of Forests and Wild Life; (e) five persons to represent non-governmental organizations to be nominated by the Central Government; (f) ten persons to be nominated by the Central Government from amongst eminent conservationists, ecologists and environmentalists; (g) the Secretary to the Government of India in-charge of the Ministry or Department of the Central Government dealing with Forests and Wild Life; (h) the Chief of the Army Staff; (i) the Secretary to the Government of India in-charge of the Ministry of Defence; (j) the Secretary to the Government of India in-charge of the Ministry of Information and Broadcasting; (k) the Secretary to the Government of India in-charge of the Department of Expenditure, Ministry of Finance; (l) the Secretary to the Government of India, Ministry of Tribal Welfare; (m) the Director-General of Forests in the Ministry or Department of the Central Government dealing with Forests and Wild Life; (n) the Director-General of Tourism, Government of India; (o) the Director-General, Indian Council for Forestry Research and Education, Dehradun; (p) the Director, Wild Life Institute of India, Dehradun; (q) the Director, Zoological Survey of India; (r) the Director, Botanical Survey of India; (s) the Director, Indian Veterinary Research Institute; (t) the Member-Secretary, Central Zoo Authority; (u) the Director, National Institute of Oceanography; (v) one representative each from ten States and Union territories by rotation, to be nominated by the Central Government; (w) the Director of Wild Life Preservation who shall be the Member-Secretary of the National Board.

### **Functions**

The National Board performs the following functions - (a) frame policies and advises the Central Government and the State Governments on the ways and means of promoting wildlife conservation and effectively controlling poaching and illegal trade of wildlife and its products; (b) recommends setting up of and management of national parks, sanctuaries and other protected areas and on matters relating to the restriction of activities in those areas; (c) conduct impact assessment of various projects and activities on wildlife or its habitat; (d) undertakes periodical reviews on the progress of wildlife conservation in the country and suggesting measures for improvement thereto; and (e) publishes a status report at least once in two years on wildlife in the country.

### **State Boards**

#### **Members**

(a) the Chief Minister of the State and in case of the Union territory, either

Chief Minister or Administrator, as the case may be - Chairperson; (b) the Minister in-charge of Forests and Wild Life - Vice-Chairperson; (c) three members of the State Legislature or in the case of a Union territory with Legislature, two members of the Legislative Assembly of that Union territory; (d) three persons to represent non-governmental organizations dealing with wildlife to be nominated by the State Government; (e) ten persons to be nominated by the State Government from amongst eminent conservationists, ecologists and environmentalists including at least two representatives of the Scheduled Tribes; (f) the Secretary to the State Government or the Government of the Union territory, as the case may be, in-charge of Forests and Wild Life; (g) the Officer in-charge of the State Forest Department; (h) the Secretary to the State Government, Department of Tribal Welfare; (i) the Managing Director, State Tourism Development Corporation; (j) an officer of the State Police Department not below the rank of Inspector-General; (k) a representative of the Armed Forces not below the rank of a Brigadier to be nominated by the Central Government; (l) the Director, Department of Animal Husbandry of the State; (m) the Director, Department of Fisheries of the State; (n) an officer to be nominated by the Director, Wild Life Preservation; (o) a representative of the Wildlife Institute of India, Dehradun; (p) a representative of the Botanical Survey of India; (q) a representative of the Zoological Survey of India; (r) the Chief Wild Life Warden, who shall be the Member-Secretary.

### **Functions**

The State Boards advise the State Government in relation to the — (a) in the selection and management of areas to be declared as protected areas; (b) in the formulation of the policy for the protection and conservation of the wildlife and specified plants; (c) measures to be taken for harmonizing the needs of the tribals and other dwellers of the forest with the protection and conservation of wildlife, and (d) in any other matter connected with the protection of wildlife, which may be referred to it by the State Government.

### **III Central Zoo Authority**

(1) The Central Government establishes the Central Zoo Authority to exercise the powers conferred on, and to perform the functions assigned to it under this Act. (2) The Authority consist of— (a) Chairperson; (b) a such number of members not exceeding ten; and (c) Member-Secretary, to be appointed by the Central Government.

### **Functions**

The Central Zoo Authority perform following functions, namely:— (a) specify the minimum standards for housing, upkeep and veterinary care of the animals kept in a zoo; (b) evaluate and assess the functioning of zoos with respect to the standards or the norms as may be prescribed; (c) recognize or derecognize zoos; (d) identify endangered species of wild animals for purposes of captive breeding and assigning responsibility in this regard to a

zoo; (e) co-ordinate the acquisition, exchange and loaning of animals for breeding purposes; (f) ensure maintenance of studbooks of endangered species of wild animals bred in captivity; (g) identify priorities and themes with regard to display of captive animals in a zoo; (h) coordinate training of zoo personnel in India and outside India; (i) coordinate research in captive breeding and educational programmes for the purposes of zoos; (j) provide technical and other assistance to zoos for their proper management and development on scientific lines; (k) perform such other functions as may be necessary to carry out the purposes of this Act with regard to zoos.

#### **IV National Tiger Conservation Authority**

The Central Government establishes the National Tiger Conservation Authority under this Act. The Authority consists the following members, namely:— (a) the Minister in charge of the Ministry of Environment and Forests—Chairperson; (b) the Minister of State in the Ministry of Environment and Forests—Vice-Chairperson; (c) three members of Parliament of whom two shall be elected by the House of the People and one by the Council of States; (d) eight experts or professionals having prescribed qualifications and experience in conservation of wildlife and welfare of people living in tiger reserve out of which at least two shall be from the field of tribal development; (e) Secretary, Ministry of Environment and Forests; (f) Director General of Forests and Special Secretary, Ministry of Environment and Forests; (g) Director, Wild Life Preservation, Ministry of Environment and Forests; (h) six Chief Wild Life Wardens from the tiger reserve States in rotation for three years; (i) an officer not below the rank of Joint Secretary and Legislative Counsel from the Ministry of Law and Justice; (j) Secretary, Ministry of Tribal Affairs; (k) Secretary, Ministry of Social Justice and Empowerment; (l) Chairperson, National Commission for the Scheduled Tribes; (m) Chairperson, National Commission for the Scheduled Castes; (n) Secretary, Ministry of Panchayati Raj; (o) Inspector-General of Forests or an officer of the equivalent rank having at least ten years' experience in a tiger reserve or wildlife management, who shall be the Member-Secretary, to be notified by the Central Government, in the Official Gazette.

#### **Powers and Functions**

The Tiger Conservation Authority performs following functions: (a) approves the Tiger Conservation Plan prepared by the State Government; (b) evaluates and assess various aspects of sustainable ecology and disallow any ecologically unsustainable land use such as mining, industry and other projects within the tiger reserves; (c) lay down normative standards for tourism activities and guidelines for project tiger from time to time for tiger conservation in the buffer and core area of tiger reserves and ensure their due compliance; (d) provide for management focus and measures for addressing conflicts of men and wild animals and to emphasize on co-existence in forest areas outside the National Parks, sanctuaries or tiger reserve, in the working plan code; (e) provide information on protection measures including future

conservation plan, estimation of population of tiger and its natural prey species, status of habitats, disease surveillance, mortality survey, patrolling, reports on untoward happenings and such other management aspects as it may deem fit including future plan conservation; (f) approve, coordinate research and monitoring on tiger, co-predators, prey, habitat, related ecological and socio-economic parameters and their evaluation; (g) ensure that the tiger reserves and areas linking one protected area or tiger reserve with another protected area or tiger reserve are not diverted for ecologically unsustainable uses, except in public interest and with the approval of the National Board for Wild Life and on the advice of the Tiger Conservation Authority; (h) facilitate and support the tiger reserve management in the State for biodiversity conservation initiatives through eco-development and people's participation as per approved management plans and to support similar initiatives in adjoining areas consistent with the Central and State laws; (i) ensure critical support including scientific, information technology and legal support for better implementation of the tiger conservation plan; (j) facilitate ongoing capacity building programme for skill development of officers and staff of tiger reserves; and (k) perform such other functions as may be necessary to carry out the purposes of this Act with regard to conservation of tigers and their habitat.

### **Steering Committee**

The State Government establishes a Steering Committee to ensure co-ordination, monitoring, protection and conservation of tigers, co-predators and prey animals within the tiger range States.

The Steering Committee shall consist of— (a) the Chief Minister — Chairperson; (b) the Minister-in-charge of Wild Life —Vice-Chairperson; (c) a such number of official members not exceeding five including at least two Field Directors of tiger reserve or Director of National Park and one from the State Government's Departments dealing with tribal affairs; (d) three experts or professionals having qualifications and experience in conservation of wildlife of which at least one shall be from the field of tribal development, (e) two members from the State's Tribal Advisory Council; (f) one representative each from State Government's Departments dealing with Panchayati Raj and Social Justice and Empowerment; (g) Chief Wild Life Warden of the State shall be the Member-Secretary, ex officio, to be notified by the State Government, in the Official Gazette.

## **V. Wildlife Crime Control Bureau**

### **Composition**

(a) the Director of Wildlife Preservation—Director ex officio;(b) the Inspector-General of Police—Additional Director; (c) the Deputy Inspector-General of Police—Joint Director; (d) the Deputy Inspector-General of Forests—Joint Director; (e) the Additional Commissioner (Customs and Central Excise)—Joint Director; and (f) such other officers as may be

appointed.

### **Functions**

The Wildlife Crime Control Bureau performs the following tasks— (i) collect and collate intelligence related to wildlife crime activities and share it with the State and other enforcement agencies for immediate action; (ii) coordinate actions by various officers, State Governments and other authorities in connection with the enforcement of the provisions of this Act; (iii) implementation of various international Conventions and protocols on wildlife crime control; (iv) coordinate with the foreign countries on wildlife crime control; (v) develop infrastructure and capacity building for a scientific and professional investigation into wildlife crimes and assist State Governments to ensure success in prosecutions related to wildlife crimes; (vi) advice the Government of India on issues relating to wildlife crimes having national and international ramifications, and suggest changes required in relevant policy and laws from time to time.

### **Penalties Under the Act**

Section 51 of the Act states that any person who violates any of the provisions under this Act and it may include breach of any of the conditions of any licence or permit granted under this Act, then such person shall be punished with imprisonment for a term which may extend to three years, or with fine which may extend to twenty-five thousand rupees or with both.

Provided that where the offence committed is in relation to any animal specified in Schedule I or Part II of Schedule II or meat of any such animal or animal article, trophy or uncured trophy derived from such animal or where the offence relates to hunting in a sanctuary or a National Park or altering the boundaries of a sanctuary or a National Park, such offence shall be punishable with imprisonment for a term which shall not be less than three years but may extend to seven years and also with fine which shall not be less than ten thousand rupees. If the offence is repeated then the term of the imprisonment shall not be less than three years but may extend to seven years and also with a fine which shall not be less than twenty-five thousand rupees.

Any person who contravenes any provisions of Chapter VA shall be punishable with imprisonment for a term which shall not be less than three years but which may extend to seven years and also with a fine which shall not be less than ten thousand rupees.

The power to take cognizance of an offence under this Act as per Section 55 lies with the Director of Wild Life Preservation or any other officer authorized on this behalf by the Central Government; or the Member-Secretary, Central Zoo Authority; Member-Secretary, Tiger Conservation Authority or Director of the concerned tiger reserve or the Chief Wild Life Warden, or any other officer authorized in this behalf by the State Government.

## 10.5 THE WILDLIFE (PROTECTION) RULES, 1995

The Wildlife (Protection) Rules 1995 merely contains three provisions. It provides how the notice should be issued under section 55 (c). Section 55 deals with the cognizance of an offence under the Act. So, Clause C mentions that "(c) any person who has given notice of not less than sixty days, in the manner prescribed, of the alleged offence and of his intention to make a complaint, to the Central Government or the State". The manner in which the notice is to be issued is laid down in the 1995 rules. The complainant has to fill out the form laid down under the rules to satisfy the requirement of section 55(c).

### Check Your Progress 1

**Note:** i) Use the space given below for your answers.

ii) Check your answers with those given at the end of the unit.

1. What are the objectives of the Nilgiris Game and Fish Preservation Act, 1879?

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2. Write a short note on wildlife conservation.

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3. Explain the features of the Wild Life (Protection) Act, 1972.

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4. Write a short note on the Wildlife (Protection) Rules, 1995.

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## 10.6 LET US SUM UP

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Wildlife has a wider scope as it encompasses wild animal, their habitat, and plants among others. Hence any laws on the protection and conservation of wildlife have to consider all factors to generate effective outcomes. Colonial lawmakers took some serious steps only at the end of their rule as they introduced some special laws for the protection of elephants and tigers. Until then their actions had severely impacted the wildlife. The post-colonial Wild Life (Protection) Act 1972 addressed some key problems like hunting wild animals. But it had to amend later to extend protection to the tigers and specified plants. Special protection zones such as Zoos and Parks also found substantial relevance in it. Moreover, the Act has established special administrative authorities such as Central Zoo Conservation Authority, National and State Wildlife Boards etc., to effectively implement the wildlife law and overcome policy inertia.

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## 10.7 KEY WORDS

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**Protected Area:** Protected area includes National Park, Sanctuary, Conservation Reserve or Community Reserve.

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## 10.8 SUGGESTED FURTHER READING/REFERENCES

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## 10.9 ANSWERS TO CHECK YOUR PROGRESS

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Environmental Policy  
in Pre-independent  
India

### Check Your Progress 1

1. The objective of the Nilgiris Game and Fish Preservation Act, 1879 was to provide for the protection of Game and acclimatized fish in the district of the Nilgiris.
2. Please refer to section 10.3
3. Please refer to section 10.4
4. Please refer to section 10.5



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## UNIT 11 BIODIVERSITY

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### Structure

- 11.1 Introduction
- 11.2 Objectives
- 11.3 The Biological Diversity Act, 2002
- 11.4 National Biodiversity Authority (NBA)
- 11.5 State Biodiversity Boards (SBBs)
- 11.6 Biodiversity Management Committees (BMCs)
- 11.7 Biodiversity Heritage Sites (BHS)
- 11.8 Let Us Sum Up
- 11.9 Key Words
- 11.10 Suggested Further Reading/References
- 11.11 Answers to Check Your Progress

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### 11.1 INTRODUCTION

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The Biological Diversity Act, 2002 is an Act enacted by the Parliament of India for the preservation of biological diversity in India and provides a mechanism for equitable sharing of benefits arising out of the use of traditional biological resources and knowledge. This act was an attempt to meet the objectives carved in the United Nations Convention on Biological Diversity (CBD) 1992. CBD has three main objectives: the conservation of biodiversity; the sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources. It has two supplementary agreements, the Cartagena Protocol and Nagoya Protocol. Before going deeper into “The Biological Diversity Act, 2002”, let us quickly recap the definition of biodiversity! CBD defined biodiversity as **“the variability among living biota from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems”**. This unit will give you an overview of the Biological Diversity Act, 2002. We will be discussing the functions of the National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs) and Biodiversity Management Committees (BMCs).

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### 11.2 OBJECTIVES

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After studying this unit, you should be able to:

- explain the features of the Biological Diversity Act, 2002;
- explain the functions of the National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs) and Biodiversity Management

Committees (BMCs); and

- describe the Biodiversity Heritage Sites (BHS).

## 11.3 THE BIOLOGICAL DIVERSITY ACT, 2002

The biological diversity act, 2002 has a total of 12 chapters (Table 11.1). The act envisaged a three-tier structure to regulate the access to biological resources at the national level, at the state level and district level through The National Biodiversity Authority (NBA), The State Biodiversity Boards (SBBs) and The Biodiversity Management Committees (BMCs) respectively.

**Table 11.1 The chapters in the Biological Diversity Act, 2002**

| Chapter | Content                                                        |
|---------|----------------------------------------------------------------|
| I       | 1. Short title, extent and commencement and 2. Definitions.    |
| II      | Regulations of Access to Biological Diversity                  |
| III     | National Biodiversity Authority                                |
| IV      | Functions and Powers of the National Biodiversity Authority    |
| V       | Approval by the National Biodiversity Authority                |
| VI      | State Biodiversity Board                                       |
| VII     | Finance, Accounts and Audit of National Biodiversity Authority |
| VIII    | Finance, Accounts and Audit of State Biodiversity Board        |
| IX      | Duties of the Central and the State Governments                |
| X       | Biodiversity Management Committee                              |
| XI      | Local Biodiversity Fund                                        |
| XII     | Miscellaneous                                                  |

Let's know about the National Biodiversity Authority (NBA)!

## 11.4 NATIONAL BIODIVERSITY AUTHORITY

The National Biodiversity Authority (NBA) was established in 2003 and is a statutory body that performs facilitative, regulatory and advisory functions for the Government of India on the issue of conservation and sustainable use of biological resources. The head office of the NBA is in Chennai, Tamil Nadu, India.

### Structure of NBA

The National Biodiversity Authority (NBA) consists of the following members who are appointed by the Central Government:

**a. The Chairperson**

The Chairperson shall be an eminent person having adequate knowledge and experience in the conservation and sustainable use of biological diversity and in matters relating to equitable sharing of benefits, to be appointed by the Central Government.

**Term of Office of the Chairperson**

1. The Chairperson of the Authority shall hold the office for a term of three years and shall be eligible for re-appointment,
  2. Provided that no Chairperson shall hold office as such after he attains the age of sixty-five years or his term of office expires which is earlier.
  3. The Chairperson may resign from his office by giving at least one month's notice in writing to the Central Government.
- b. Three ex officio members, one representing the Ministry dealing with Tribal Affairs and two representing the Ministry dealing with Environment, Forests, and Climate Change.
- c. Seven ex-officio members to represent respectively the Ministries of the Central Government dealing with:
- i) Agricultural Research and Education
  - ii) Biotechnology
  - iii) Ocean Development
  - iv) Agriculture and Cooperation
  - v) Indian Systems of Medicine and Homoeopathy
  - vi) Science and Technology
  - vii) Scientific and Industrial Research
- d. Five non-official members to be appointed from amongst specialists and scientists having special knowledge and experience in the areas relating to conservation of biological diversity, sustainable use of biological resources and equitable sharing of benefits arising out of the use of biological resources, representatives of industry, conservers, creators and knowledge-holders of biological resources.

**Functions of the NBA**

- To promote conservation and sustainable use of biodiversity.
- Advising the central government, regulating activities and issuing guidelines for access to biological resources and fair and equitable benefit sharing as per Biological Diversity Act, 2002.
- To oppose the grant of intellectual property rights in any country outside India on any biological resource obtained from India or knowledge

associated with such biological resources derived from India.

- Advising the State Governments in the selection of areas of biodiversity importance to be notified as heritage sites and their management.

### **Approval from the National Biodiversity Authority (NBA)**

Approval from the National Biodiversity Authority (NBA) is required for the following:

- To obtain any biological resource occurring in India or knowledge associated with the biological resource for research or commercial utilisation.
- To transfer the results of any research relating to any biological resources from India.
- To claim intellectual property rights on any invention based on the research made on the biological resources obtained from India.
- Under the Biological Diversity Act, 2002, the Central Government in consultation with the NBA:
- Shall notify threatened species and prohibit or regulate their collection, rehabilitation and conservation.
- All offences under this act are cognizable and non-bailable.

Any grievances relating to the determination of benefit sharing or order of the National Biodiversity Authority or a State Biodiversity Board under this Act shall be taken to the National Green Tribunal (NGT). NGT is a specialised body set up under the National Green Tribunal Act (2010) for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.

### **Exemptions from the Act**

- The Act excludes Indian biological resources that are normally traded as commodities.
- The act also excludes traditional uses of Indian biological resources and associated knowledge and when they are used in collaborative research projects between Indian and foreign institutions with the approval of the central government.
- Growers and cultivators of biodiversity, and vaidas and hakims, who have been practising indigenous medicine are exempted.

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## **11.5 STATE BIODIVERSITY BOARDS (SBBS)**

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The SBBs are established by the State Governments in accordance with Section 22 of the Biological Diversity Act, 2002.

### Structure of SBBs

The State Biodiversity Board consists of the following members:

- A Chairperson;
- Not more than five ex officio members to represent the concerned Departments of the State Government; and
- Not more than five members from amongst experts in matters relating to conservation of biological diversity, sustainable use of biological resources and equitable sharing of benefits arising out of the use of biological resources.

All the members of the SBB are appointed by the respective State Governments.

### Functions of SBBs

1. To advise the State Government, subject to any guidelines issued by the Central Government, on matters relating to the conservation, sustainable use or sharing of equitable benefits.
2. To grant approvals or otherwise requests for commercial utilisation or bio-survey and bio-utilisation of any biological resource by people.

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## 11.6 BIODIVERSITY MANAGEMENT COMMITTEES (BMCs)

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According to Section 41 of the Biological Diversity Act, 2002, every local body shall constitute the BMC within its area to promote conservation, sustainable use and documentation of biological diversity including:

- Preservation of habitats
- Conservation of Landraces
- Folk varieties and cultivars
- Domesticated stocks and breeds of animals
- Microorganisms and chronicling of knowledge relating to biological diversity

“The National Biodiversity Authority and the State Biodiversity Boards shall consult the Biodiversity Management Committees while taking any decision relating to the use of biological resources and knowledge associated with such resources occurring within the territorial jurisdiction of the Biodiversity Management Committee. The Biodiversity Management Committees may levy charges by way of collection fees from any person for accessing or collecting any biological resource for commercial purposes from areas falling within its territorial jurisdiction” (<https://www.indiacode.nic.in/bitstream/123456789/2046/1/200318.pdf>).

### Structure of BMCs

- It shall consist of a chairperson and not more than six persons nominated by the local body.
- Out of the total members of a BMC, not less than one-third should be women and not less than 18% should belong to the Scheduled Castes/ Scheduled Tribes.
- The Chairperson of the Biodiversity Management Committee shall be elected from amongst the members of the committee in a meeting to be chaired by the Chairperson of the local body.
- The chairperson of the local body shall have the casting votes in case of a tie.

### Functions of BMCs

- The main function of the BMC is to prepare the People's Biodiversity Register in consultation with the local people.
- The register shall contain comprehensive information on the availability and knowledge of local biological resources, their medicinal or any other use or any other.

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## 11.7 BIODIVERSITY HERITAGE SITES (BHS)

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According to Section 37 of the Biological Diversity Act, 2002, the State Government in consultation with local bodies may notify the areas of biodiversity importance as Biodiversity Heritage Sites. “The State Government, in consultation with the Central Government, may frame rules for the management and conservation of all the heritage sites. The State Government shall frame schemes for compensating or rehabilitating any person or section of people economically affected by such notification” (<https://www.indiacode.nic.in/bitstream/123456789/2046/1/200318.pdf>).

The Biodiversity Heritage Sites are the well-defined areas that are unique, ecologically fragile ecosystems - terrestrial, coastal and inland waters and marine having rich biodiversity comprising of any one or more of the following components:

- the richness of wild as well as domesticated species or intra-specific categories
- high endemism
- presence of rare and threatened species
- keystone species
- species of evolutionary significance
- wild ancestors of domestic/cultivated species or their varieties
- past pre-eminence of biological components represented by fossil beds and having significant cultural, ethical or aesthetic values

### Check Your Progress 1

**Note:** i) Use the space given below for your answers.

ii) Check your answers with those given at the end of the unit.

1. What are the functions of the National Biodiversity Authority?

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2. Write a short note on State Biodiversity Authority.

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3. Write a short note on the "Biodiversity Management Committee".

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4. Write a short note on Biodiversity Heritage Sites.

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### 11.8 LET US SUM UP

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India is a nation rich in biodiversity and has a history of enriched knowledge of its forms and biodiversity use in traditional medicine etc. Way back on 5<sup>th</sup> June 1992, India became a party to the United Nations Convention on Biological Diversity signed in Rio de Janeiro, 1992 and the said Convention came into force on the 29th December 1993. The Convention has the main

objective of conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

In this unit, we have discussed the salient features of the Biological Diversity Act, 2002. The Biological Diversity Act, 2002 is an Act enacted by the Parliament of India for the preservation of biological diversity in India and provides a mechanism for equitable sharing of benefits arising out of the use of traditional biological resources and knowledge. This act was an attempt to meet the objectives carved in the United Nations Convention on Biological Diversity (CBD) 1992. We have also discussed the functions of the National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs) and Biodiversity Management Committees (BMCs).

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## 11.9 KEY WORDS

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**Agrobiodiversity:** "Agrobiodiversity" means the biological diversity of agriculture-related species and their wild relatives.

**Biological Diversity:** "Biological diversity" means the variability among living organisms from all sources and the ecological complexes of which they are part and includes diversity within species or between species and of ecosystems.

**Biological Resources:** Biological Resources can be defined as plants, animals and micro-organisms or parts thereof, their genetic material and by-products (excluding value added products) with actual or potential use or value, but do not include human genetic material.

**Commercial Utilisation of Biodiversity:** "Commercial utilisation of biodiversity" means end uses of biological resources for commercial utilisation such as drugs, industrial enzymes, food flavours, fragrance, cosmetics, emulsifiers, oleoresins, colours, extracts and genes used for improving crops and livestock through genetic intervention, but does not include conventional breeding or traditional practices in use in any agriculture, horticulture, poultry, dairy farming, animal husbandry or beekeeping.

**Sustainable Use of Biodiversity:** "Sustainable use of biodiversity" means the use of components of biological diversity in such manner and at such a rate that does not lead to the long-term decline of the biological diversity thereby maintaining its potential to meet the needs and aspirations of present and future generations.

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## 11.10 SUGGESTED FURTHER READING/REFERENCES

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### Web Links

<http://nbaindia.org/link/304/1/1/home.html>

<https://legislative.gov.in/sites/default/files/A2003-18.pdf>

<https://www.indiacode.nic.in/bitstream/123456789/2046/1/200318.pdf>

<http://nbaindia.org/content/106/29/1/bhs.html>

[http://www.wiienvi.nic.in/Database/bhs\\_8650.aspx](http://www.wiienvi.nic.in/Database/bhs_8650.aspx)

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## 11.11 ANSWERS TO CHECK YOUR PROGRESS

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### Check Your Progress 1

1. Please refer to section 11.4
2. Please refer to section 11.5
3. Please refer to section 11.6
4. Please refer to section 11.7



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## UNIT 12 CONSERVATION OF WATER BODIES

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Environmental Policy  
in Pre-independent  
India

### Structure

- 12.1 Introduction
- 12.2 Objectives
- 12.3 National River Conservation Plan
- 12.4 Ganga Action Plan Phase-I (GAP-I)
- 12.5 Ganga Action Plan Phase-II (GAP-II)
- 12.6 National Mission for Clean Ganga
- 12.7 Ganga Knowledge Centre
- 12.8 National Lake Conservation Plan
- 12.9 The Wetland (Conservation and Management) Rules, 2010
- 12.10 National Wetland Conservation Programme
- 12.11 Coastal Zone Regulation
- 12.12 Let Us Sum Up
- 12.13 Key Words
- 12.14 Suggested Further Reading/References
- 12.15 Answers to Check Your Progress

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### 12.1 INTRODUCTION

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Most of the Indian rivers, such as the Ganga, Yamuna, Godavari, Krishna, Sone, Cauvery, Damodar and Brahmaputra and their tributaries are extremely contaminated because of the release of untreated sewage and industrial effluents into these rivers. For instance, the Ganga alone gets sewage from 29 (class I) urban communities situated on its banks and industrial effluent of more than 300 industrial units all through its entire journey of about 2,525 km. Similarly, the river Yamuna has additionally been undermined by contamination in Delhi and the Ghaziabad zone. Around 5,15,000 kiloliters of untreated sewage are released into the river Yamuna daily. Apart from this, there are around 1,500 medium and small industrial units which additionally contribute enormous measures of untreated wastewater to the river Yamuna every day.

Similarly, numerous different rivers were studied in the past decades concerning their pollution status and most of them were found polluted. Since, the 1980s, the Government of India made up several genuine efforts for checking water contamination of the river Ganga and other significant rivers of India. The significant action is the Ganga Action Plan. Conservation of water bodies is a continuous and ongoing process. Presently, several

programmes are running in the country for the conservation of water bodies. In this unit, we will be discussing the National River Conservation Plan and the features of the Ganga Action Plan Phase-I and Phase-II. This unit will also provide an overview of the National Mission for Clean Ganga. Further, we will be discussing the features of the Wetland (Conservation and Management) Rules, 2010 and the National Wetland Conservation Programme.

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## **12.2 OBJECTIVES**

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After studying this unit, you should be able to:

- describe the National River Conservation plan of India;
- explain the Ganga Action Plan Phase-I and Phase-II;
- explain the features of the National Mission for Clean Ganga;
- explain the features of the Wetland (Conservation and Management) Rules, 2010;
- describe the National Wetland Conservation Programme; and
- explain the Coastal Zone Regulation.

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## **12.3 NATIONAL RIVER CONSERVATION PLAN**

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In 1985, the Government of India started its river pollution control program with the start of the Ganga Action Plan (GAP). After that, the GAP Phase II started in 1993 to control pollution of the river Yamuna and Gomati and major tributaries of the river Ganga. The river pollution mitigation program was further expanded to include other major rivers of the country in 1995 under the aegis of the National River Conservation Plan (NRCP). In December 1996, GAP Phase II was also merged with the NRCP and all projects related to river conservation in the country were brought under one plan of NRCP.

### **Objectives of NRCP**

The main goal of the plan was to reduce the pollution load in Indian rivers through the use of different pollution control measures, resulting in improvement in river water quality. NRCP was a central government-funded plan launched in 1995, the main goal of the plan was to mitigate the pollution of rivers. The main purposes of the plan include the construction of STPs, river development, low-cost sanitation, and afforestation.

NRCP covers 38 rivers in 178 cities from more than 20 states. The sewage treatment capability of almost 4064 million litres per day (MLD) has been set up. River activities for sewage disposal and management were also introduced into other plans like the Jawaharlal Nehru National city-based renewal & development plan for small and medium towns. Conservation of rivers comprises whole approaches of the central and state governments.

The central government helped in all the efforts of the state governments to overcome river pollution. Based on the supervising system followed by institutions on some of the main rivers under NRCP, the water pollution in terms of BOD (Biochemical Oxygen Demand) values has improved at most of the locations as compared to water quality before implementing the pollution control measures. The central government, in February 2009, set up the National Ganga River Basin Authority (NGRBA) which has the powers to initiate financial planning, supervising and coordinating authority to make sure of effective pollution control measures for the river Ganga. Discharge of untreated wastewater contributes to the pollution load for the rivers. Drawing water for agricultural practices, industrial use, drinking purpose, power plants for electricity generation and other uses additionally gives the challenge to keep the adequate flow rate in the rivers and cleansing them. Diversion of sewage and installation of sewage treatment plants (STP) is the foremost aim of pollution control under the plan (NRCP). The concept of NRCP is to enhance the water quality of Indian rivers by strict implementation of pollution control measures because rivers are the lifelines of any country. Conservation of rivers is a continuous and ongoing process. Later in June 2015, an Integrated Ganga Conservation Mission, namely "Namami Gange" has been approved as a 'Flagship Programme' set up to accomplish effective abatement of pollution, conservation and rejuvenation of the river.

The pollution mitigation measures taken up under the NRCP scheme are:

- a) Interception and diversion of sewerage systems to collect sewage water flowing into the rivers through drains and diverting them for treatment.
- b) Installation of sewage treatment plants for treating the diverted sewage.
- c) Building of public toilets to control open defecation on river banks.
- d) Building of electric crematoria and improving wood crematoria.
- e) Riverfront development practices, i.e., development of river ghats.
- f) Public awareness and participation.

State governments and local bodies are responsible for the proper treatment and disposal of sewage. Central government supporting the efforts of state governments through the NRCP plan of MoEF&CC, NGRBA/Namami Gange plan of MoWR, RD&GR and AMRUT/Smart cities plans of MoUD.

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## **12.4 GANGA ACTION PLAN PHASE –I (GAP-I)**

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The river Ganga is worshipped by millions of Indians, because of its purity and spiritual values, but now it is one of the most polluted rivers in India. It is so polluted that in some parts of the river, the water doesn't fit even for bathing purposes, especially in the summertime. It starts from the Gangotri glacier, around 4100 meters above ocean level. The river flows through the Himalayas and combines with other streams at Devprayag. The Ganga basin is the dominant river basin of the country covering approximately 40% population of India. The Ganga after travelling a distance of around 2,525 km

from its origin, then falls into the Bay of Bengal. During its journey from the hills to the Bay of Bengal, a large amount of sewage from sewage treatment plants and effluent treatment plants and wastes from many other sources are discharged into the river increasing pollution. This scenario is unacceptable because it is a common practice for the Indians to take a bath in the 'holy' water of the Ganga. Similarly, a large number of people live along the river that uses the river water for drinking and other living purposes. The livelihoods of many humans like fishermen, boatmen and monks are also linked to the water quality of the river Ganga.

### Objectives of Ganga Action Plan Phase - I (GAP-I)

The main goal of the GAP was to improve the water quality of the river Ganga up to acceptable standards by preventing pollution, but later, the goal of the GAP was changed to restoring the river water quality to the “Bathing class”.

**Table 12.1 Towns covered in the Ganga Action Plan Phase-I**

| State         | Town                                                                                                                                                             |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Uttar Pradesh | Mirzapur, Haridwar, Faridabad, Fatehgarh, Allahabad, Kanpur and Varanasi                                                                                         |
| Bihar         | Chapra, Bhagalpur, Munger and Patna.                                                                                                                             |
| West Bengal   | Naihati, Kamarhati, Bharampore, Nabadwip, Hugli Chinsura, Serampore, Chandan Nagar, Bally, Kalyani, Bhatpara, Titagarh, Howrah, Kolkata, Calcutta and Baranagar. |

#### Box 12.1 Ganga and GAP in Kanpur

Kanpur became the key participant of GAP because of its huge pollution levels. Nearly, Rs.730 million had been invested for GAP phase I in Kanpur city for mitigation of pollution load. The overall sewage generated in Kanpur at the time of the starting of the GAP was around 285 MLD out of which 162 MLD of sewage were diverted to sewage treatment plants for treatment under phase I.

The objective of treatment plants was to mitigate the 162 MLD of home/domestic sewage and 9 MLD of tannery effluent generated from one hundred seventy-five (175) tanneries and transport the treated wastewater to the villages for irrigation purposes. Four intermediate pumping stations had been constructed alongside the Ganga, and all wastewater drains had been interrupted and diverted to the pumping stations. The pumping stations were to transfer the wastewater into a common waste pipe leading to the main pumping station, which filters out solid waste and then pumps the remaining wastewater into three sewage treatment plants. Two of these sewage treatment plants (5 MLD & 130 MLD) treated domestic wastewater, using

sedimentation after aerobic treatment and anaerobic stabilization. Another plant, with a capability of 36 MLD integrated with the Dutch technology (known as UASB) was also constructed. This plant used anaerobic microorganisms to decompose the waste substances and needed a few amounts of post-treatment. This plant was supposed to treat the tannery effluent, with the idea that the chromium and different heavy metals from this effluent should be recovered and recycled at the manufacturing unit. Various initiatives had been undertaken perfectly, including cleaning of sewers, enlargement of the sewer system, installation of electric crematoria, and the setup of low-price sanitation systems.

## **12.5 GANGA ACTION PLAN PHASE –II (GAP-II)**

The GAP I was continued as GAP II from 1993. GAP II includes four main tributaries of the Ganga, which are Yamuna, Gomati, Damodar and Mahanadi. As GAP I addressed only a part of the pollution load of Ganga, GAP II was launched in stages between 1993 and 1996. Under GAP-II, 59 towns along the main stem of the river Ganga in five States of Uttarakhand, U.P., Jharkhand, Bihar and West Bengal are covered. In GAP-II, Yamuna and Gomati action plans have been approved in April 1993. Plans for the other rivers were also permitted in 1995 under NRCP; in December 1996, it was decided to combine GAP II and NRCP.

The program has become vast in 1995 with the addition of other rivers and the GAP was renamed NRCP. The remarkable achievements of GAP were the use of appropriate technologies for sewage treatment such as Upflow Anaerobic Sludge Blanket (UASB), sewage treatment with the help of plants, upgraded oxidation ponds, aquaculture with the usage of duckweeds and pisciculture etc. The technologies were cost-effective in terms of operation & maintenance. The cost-effectiveness of these technologies helped to make GAP and plans sustainable.

### **Monitoring System for GAP**

The action plans are monitored at both the State as well as Central government levels through a multi-level monitoring system.

#### **State Level**

- i) Detailed monitoring by a group of technically sound people on daily basis.
- ii) Monthly review of the progress by the Chief Executive of the nodal association.
- iii) Local people are included in the monitoring committee to audit the advancement and give contributions to public participation and association.
- iv) A regular survey by the divisional project monitoring cells.

- v) A timely study of advancement of the plan by a state guiding council driven by the concerned Chief Secretaries.
- vi) Overall consistent audit by a high-powered committee under the chairmanship of the chief minister.

#### Central Level

- i) Regular communication and audit by NRCD authority, including regular site visits. Regular review by the NRCD project director.
- ii) The quarterly survey of advancement by a steering committee headed by the Secretary of the ministry. Chief Secretaries of the concerned states and experts in public health engineering and other related areas are the members of this committee.
- iii) Quarterly review of the progress of scientific and technical aspects of the programme as well as the impact of works on the river water quality by a monitoring committee headed by member environment, planning commission.
- iv) Quarterly review by a standing committee headed by the Union Minister of Environment & Forests.
- v) Annual review of progress by the National River Conservation Authority led by the Prime Minister. The concerned Chief Ministers of the states and individuals from this Committee.

#### Check Your Progress 1

**Note:** i) Use the space given below for your answers.

ii) Check your answers with those given at the end of the unit.

1. Write a short note on Ganga Action Plan Phase-I (GAP-I).

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2. Write a short note on Ganga Action Plan Phase-II (GAP-II).

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## 12.6 NATIONAL MISSION FOR CLEAN GANGA

National Mission for Clean Ganga (NMCG), a society registered under the Societies Registration Act, 1860, is an authority created under the river Ganga (Rejuvenation, Protection and Management) authorities order, 2016 by the government of India. NMCG is a nodal service for effective mitigation of pollution and rejuvenation, protection and management of the river Ganga and its tributaries. The states have a river Ganga basin, specifically, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Haryana, Rajasthan, West Bengal, Delhi and tributaries of the river Ganga are covered under this mission.

NMCG approved the planning, financing and execution of projects to overcome the contamination in the river Ganga, including the development of a sewerage system, treatment of chemicals released from numerous industries, catchment area treatment, flood control, creating public awareness and participation programs, conservation of oceanic, riparian life and biodiversity and such other measures for sustainable river management. NMCG also facilitated, screened and survey the utilization of various projects and exercises taken up for prevention and control of contamination, safety and management in the river Ganga and its tributaries.

## 12.7 GANGA KNOWLEDGE CENTRE

River Ganga has important economic, ecological and social values in India. The river travels a distance of approx 2,525 km from the Himalayas to the Bay of Bengal. The Ganga basin, which is spread out into parts of Nepal, China and Bangladesh, represents 26% of India's landmass, 30% of its water assets and over 40% of its population. The Ganga is one of India's holiest rivers whose social and cultural values rise above the limits of the basin. The Ganga Knowledge Center is set up at National Mission for Clean Ganga to discover the issues and to improve the nature of the execution of the National Ganga River Basin Authority (NGRBA) program. The Ganga Knowledge Center is an autonomous information-based organization which supports advancement and partner cooperation to enhance the investments of NGRBA. The Ganga Knowledge Centre is situated in Delhi and is a part of the NMCG. It will have a physical presence on the Ganga and topical focuses on subjects like dolphin conservation, ecological diversity, flora, fauna, industrial pollution, hydro-power etc.

### Objectives and Scope of Ganga Knowledge Centre

- a) To make and oversee learning assets.
- b) Inspection and analysis of data relevant to the river Ganga.
- c) To develop and inquire about improvement through recognizable knowledge gaps, the need for new ideas and support focused on research.
- d) To encourage partners through public participation and building

partnership with colleges/educational/research institutes of national and international repute and NGOs.

- e) The Ganga Knowledge Center is an organization which produces the condition of specialized learning even while considering always conventional and local knowledge.
- f) Knowledge-based items include distributions, on the website, virtual information bases and e-library.
- g) Sharing the improved vision across agencies.

The main functions of the Ganga Knowledge Centre are:

- a) Collection of real-time information to work as an observing centre.
- b) The key function of the Ganga Knowledge Center is to make and keep up, an excellent web-based interface for the Ganga, a data focus (MIS) on all major Ganga projects, a GIS-based mapping arrangement of the Ganga basin, a process for supporting new thoughts and procedures for connecting with partners through occasions, publications and online media.

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## **12.8 NATIONAL LAKE CONSERVATION PLAN**

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Analyzing the significance of lakes, MOEF&CC, the Government of India, started the National Lake Conservation Plan (NLCP), a Central government-funded plan mainly focused on maintaining the quality of lake water and the ecology of the lakes in the territories of the nation. The plan was approved by the government of India during the IXth Plan (June 2001) as a 100% Central government grant. The funding pattern for NLCP has been changed in February 2002 from 100% central funding to 70:30 cost sharing between the central and the concerned state government. The primary objective of the plan is to re-establish and preserve the urban and semi-urban lakes in the nation which are highly contaminated due to wastewater released into the lake and other wastewater sources.

### **Activities under NLCP**

To prevent the contamination from point sources by intercepting, redirecting and treating the contamination entering the lake. The interferences may incorporate sewage treatment for the entire lake catchment area.

- a) In situ measures of lake cleaning like de-silting, de-weeding, bioremediation, bio-manipulation, nutrient reduction, air circulation etc.
- b) Catchment area treatment may incorporate afforestation, stormwater drainage, sediment traps etc.
- c) Lake fencing and shoreline development.
- d) Lake eco-development programmes, including public participation.
- e) Solid waste management & provision of Dhobi Ghats (washing areas)

was generally not secured under NLCP.

- f) Prevention of pollutants from non-point sources.
- g) Public awareness and public participation.
- h) Training and research for lake conservation.

### **Lake Selection Criteria**

#### *Hydrological Criteria*

- a) The lake water body is enduring i.e., it holds a certain volume of water at all times, even in the lean period of the year.
- b) Physical parameters of the lake are: (i) Lake size > 10 Ha (Exception: lakes larger than 3 Ha having social, cultural or religious importance) (ii) Lake depth (maximum depth) > 3 m

#### *Scientific Criteria*

The lake is prioritized by the concerned state government or if the water body is highly contaminated/degraded and cannot be put to its traditional use, primarily because of the discharge of domestic and industrial wastewater into the lake & dumping of municipal solid waste.

### **Funding for the NLCP**

- a) 70% of project expenses were supported by the Government of India and the remaining 30% of the project cost was supported by the state government, of which the share of the local body would be up to 10% to ensure public participation in the project. A commitment to this impact too to be provided by the state government.
- a) Part of the lake where sewage treatment is being supported by other sources. In case, the proposal also includes the internal sewerage as one of the components; the funding pattern shall be 60:40 between the centre and the respective state. As far as possible, government land may be identified for the creation of infrastructure.
- b) The Operation & Maintenance (O&M) are a part of the project and the costs are borne entirely by the States for which additional resources have to be demonstrably raised and committed to O&M. The O&M Plan must reveal the dedicated streams for revenue generation to meet O&M expenses and the same has to be passed as a resolution by the concerned local body.
- c) If there is a cost overrun in a project because of the delay, inflation or any other reason, the contribution of the government of India shall be limited to the amount initially agreed to in the administrative approval & expenditure sanction order.

In February 2013 the National Lake Conservation Plan (NLCP) has been merged with another scheme of the National Wetlands Conservation Programme (NWCP) to avoid overlap and promote better synergy into a new integrated scheme of the National Plan for Conservation of Aquatic-ecosystems (NPCA) for holistic conservation and restoration of lakes and wetlands in the country.

### Check Your Progress 2

**Note:** i) Use the space given below for your answers.

ii) Check your answers with those given at the end of the unit.

1. What are the major activities of the National Mission for Clean Ganga (NMCG)?

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2. Write a short note on Ganga Knowledge Center.

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## 12.9 THE WETLANDS (CONSERVATION AND MANAGEMENT) RULES, 2010

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The Ministry of Environment and Forests notified the Wetlands (Conservation and Management) Rules, 2010. These rules have been drafted by the Ministry of Environment and Forests to ensure better conservation and prevent the degradation of existing wetlands in India. These rules came into force on 4<sup>th</sup> December 2010.

Wetlands are essential for human progress and prosperity, especially in India, a large number of individuals depend on them for drinking water, food and livelihood. The wetlands are among the most degraded biological systems in the world. Research study suggests that 1/3<sup>rd</sup> of India's wetlands have been wiped out due to excess fishing, discharge of industrial effluents, fertilizers and pesticides, uncontrolled siltation and weed invasion. Wetland protection is the need of the hour in India. National Wetlands Conservation Program of India has been financially supporting wetland safeguarding techniques all

over India. 115 wetlands have been identified for conservation and management to date in this program. Under the Ramsar convention, there are 27 wetlands of India, which are involved in the wetlands of global significance.

### **Essential features of the Wetlands (Conservation and Management) Rules, 2010**

- The Wetlands (Conservation and Management) Rules, 2010 is to reduce and prohibit the degradation of wetlands in India. Its objectives are wetland conservation, wetland protection, and wetland management to ensure that no further degradation of wetlands takes place in India.
- The rules indicate the exercises which are degrading the wetlands such as industrialization, developmental activities, dumping of untreated sewage and solid waste etc. The rules forbid these exercises within the wetlands.
- The Central Wetland Regulatory Authority has been set up to guarantee appropriate execution of the Rules and performs all functions for the management of wetlands in the nation. Apart from fundamental government delegates, the Authority shall have various expert members to ensure that wetland preservation is done in the most ideal way.
- The rules have classified the wetlands to ensure wetland protection, and its easier identification and management.
- The activities, for example, harvesting, dredging and so on might be done in the wetlands, but only after consent from the concerned authorities.
- To avoid confusion, it was referenced in the rules that if the wetlands are present inside the protected zones of the National Parks and Wildlife Sanctuaries they will be managed by the regulations of the Wild Life (Protection) Act, 1972.
- The Wetlands (Conservation and Management) Rules, 2010 was a necessary step to promote wetland protection and conservation in India.
- The Wetlands (Conservation and Management) Rules, 2010 has been amended in 2016 and again in 2017. The new Wetlands (Conservation and Management) Rules, 2017 replaced the Wetland (Conservation and Management) Rules, 2010.

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## **12.10 NATIONAL WETLAND CONSERVATION PROGRAMME**

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The National Wetlands Conservation Programme (NWCP) has been merged in February 2013 with National Lake Conservation Plan (NLCP) into a new scheme “National Plan for Conservation of Aquatic Ecosystems” (NPCA) to avoid overlap and better collaboration. NPCA goes for the preservation and reclamation of wetlands and lakes for achieving the ideal water quality, besides progress in biodiversity and biological communities through an

incorporated and multidisciplinary approach. Around 115 wetlands in 24 states and two Union Territories are recognized for protection under the NPCA/NWCP.

The Ministry has guided state governments through a series of gatherings held in November 2013 and in October 2014 for the preparation of Comprehensive Management Action Plans for seeking financial help and for coordinated administration of lakes and wetlands. The activities required by the states are with respect to the following:

- a) Identification of priority wetlands.
- b) Construction of wetland boards.
- c) Development of coordinated administrative plans.
- d) Securing assets for implementation of management plans.
- e) Strengthening legal and administrative aspects.
- f) Proper monitoring and assessment.
- g) Strengthening research practices.

About nine states (Orissa, Karnataka, Bihar and Kerela) have officially set up State wetland/lake authorities for appropriate conservation. Specific lake authorities like Chilka Development Authority, Loktak Development Authority, Wullar Conservation and Management Authority and East Calcutta Wetland Management Authority have additionally been set up by the separate State Governments.

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## **12.11 COASTAL REGULATION ZONE**

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There is an urgent need to protect the coastal ecosystems and habitats by executing the coastal regulation zone notice. A sound coastal life needs an understanding and proper planning of the environment, on and nearby the coast. Maybe with these perspectives, the Ministry of Environment and Forest, Government of India issued a notice in the year 1991, beneath the Environment (Protection) Act of 1986, declaring coastal extends as a coastal regulation zone and controlling activities in it.

India has a coastline of around 7516 km long and around 4198 islands are there along the shores of the Andaman, Nicobar and Lakshadweep groups. The coastal zone consolidates the zone between the high tide line (HTL) and low tide line (LTL), up to 10 maritime miles towards the ocean side from HTL and up to 20 km from HTL towards the land side. The precise boundary of the shoreline is critical for planning purposes. The prime imperative of the coastal regulation zone plan chart is basically to manage coastal and coastal zone features for sustainable use by outlining high and low tide lines on the chart with the assistance of hydrographic surveys.

For the conservation of resources by controlling their exhaustion and managing developmental activities, the Government of India proclaimed the

Environment (Protection) act 1986. The Ministry of Environment and Forest has informed in February 1991, that the coast extends from HTL to 500 meters towards land and from HTL to LTL towards the sea as a coastal regulation zone (CRZ).

The CRZ notification has put an excessive number of limitations on the advancement along the coast. In Maharashtra, with its coastline of 720 km and 54 river creeks, noteworthy stretches of land are hit by the CRZ notice. It is representing a few issues previously the planners and decision-makers on one side and investors and developers on the other. Various critical issues of CRZ notification and suggestions engaged with the way toward planning and improvement are:

- a) Demarcation of High tide line (HTL) in the coastal control zone warning is characterized as the line up to which most noteworthy high tide comes in spring tides. It is delineated by remote sensing data.
- b) Demarcation of the low tide line is the limit up to which the lowest tide retreats during spring tide. This line would be arrived at by making a bathymetric graph of the coastal region with the datum of the graph being the least low tide.
- c) In the case of rivers, CRZ notification and resulting Supreme Court judgment have stipulated that if the width of the stream is up to 350 meters, the CRZ will be 100 meters from the creek and if the width surpasses 350 meters, it will be 150 meters from the brook. Presently where to measure the separation of 100 meters or 150 meters is a point of debate. Another point in the appreciation of the creek is up to what distance inside the brook, the CRZ notice will be regulated. Some specialists have opined that distance in the river, where the tidal impact of the wave arrives at an end, ought to be considered as the distance inside the creek for deciding the coastal zone.
- d) It is stipulated that if there should arise an area of mangrove with a territory of  $1000\text{m}^2$  or more, would be named CRZ with a buffer zone of no less than 50 meters. The mangrove is a tropical tree developing, along the coastline and requires saline water for its development.

Coral reefs are vital encouraging grounds for fish. Mangrove and coral reefs act as a buffer zone against wave and tidal power, for balancing out and protecting the coast. Before making the CRZ outline, the best possible assessment of the coastal features and their accurate measurement is essential.

Apart from systematizing the 25 amendments that were made to CRZ notice during 1991-2009, the CRZ notice (2011) has a few new highlights: It has exceptional arrangements for Goa, Kerala, Greater Mumbai and critically vulnerable coastal regions like Sundarbans mangrove area, Sunderland Mangrove, Chilka and Bhitarkanika (Orissa), Gulf of Khambat and Gulf of Kutch (Gujarat), Malwan (Maharashtra), Karwar and Kundapur (Karnataka),

Vembanad (Kerala), Coringa, East Godavari and Krishna Delta (Andhra Pradesh), East Godavari, Gulf of Mannar (Tamil Nadu).

Water zones up to 12 nautical miles in the sea and the entire water zone of the tidal water body, i.e., stream, river, estuary and so on, would presently be consolidated into the CRZ zones management plan, without pushing any limitations of angling activities. The thought of a Coastal Zone Management Plan, to be established with the fullest commitment and support of local communities, has been introduced.

To control developmental exercises, the coastline extends inside 500 meters of HTL on the landward side and is described in the following four various classes of coastal regulation zones.

- i) Category I (CRZ-I): The zones that are naturally sensitive and significant, i.e., national parks, sanctuaries, reserve forests, wildlife habitats, mangroves, coral reef areas close to the breeding ground of fish and marine life, Historical heritage areas, and regions subject to be submerged due to rise in sea level because of global warming. It covers the areas between HTL and LTL.
- ii) Category II (CRZ-II): The areas that have recently been created up to and near the shoreline. Created areas are referred to as that territory within the municipal limits assigned urban region which is now significantly developed and which has been furnished with waste and approach streets and other foundation offices, for example, water supply and sewerage mains. Some advancement on the landward side of the present road/street and proposed road/street that appeared on the coastal zone management plan are allowed in this category.
- iii) Category III (CRZ-III): The commonly undisturbed regions and those which don't have a place with either classification I or II. These will include seaside zone in the rural regions (developed and undeveloped) and also regions inside municipal limits or legally assigned urban areas, which are not essentially created.
- iv) Category IV (CRZ-IV): Coastal stretches in the Andaman and Nicobar, Lakshadweep and little islands except those assigned as CRZ-I, CRZ-II and CRZ-III.

### Check Your Progress 3

**Note:** i) Use the space given below for your answers.

ii) Check your answers with those given at the end of the unit.

1. What do you understand by coastal regulation zone? What is its importance?

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2. Mention the four categories of coastal zones as per CRZ notification.

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3. Enlist some activities under NLCP for the prevention of pollution from point sources.

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4. How many wetlands are under the Ramsar Convention in India? What is the significance of wetlands?

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5. Why National Lake Conservation Plan was merged into National Wetlands Conservation Programme?

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## 12.12 LET US SUM UP

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In this unit, we have discussed the National River Conservation Plan and key features of the Ganga Action Plan Phase-I and Phase-II. The Central Government set up the "National Ganga River Basin Authority" in 2009 for

the river Ganga, to ensure effective abatement of pollution. National Mission for Clean Ganga was also constituted for effective control of water pollution and rejuvenation, protection and management of the river Ganga and its major tributaries. Under this mission, no untreated municipal sewage and industrial effluent are to be discharged into the river Ganga. Later in June 2015 an Integrated Ganga Conservation Mission, namely “Namami Gange” has been ratified as the flagship programme to achieve effective abatement of pollution, conservation and rejuvenation of the river. For the conservation of lakes, the Government of India started the National Lake Conservation Plan in June 2011. The plan mainly focused on maintaining the quality of lake water and the ecology of the lakes. In 2013, the National Lake Conservation Plan has been merged with the National Wetlands Conservation Programme to avoid overlap. Wetlands conservation is very essential as they protect and improve water quality, provides fish and wildlife habitats, control floods by holding water like a sponge and maintains surface water flow during dry periods. The Ministry of Environment and Forests drafted Wetlands (Conservation and Management) Rules, 2010 for better preservation and to prevent the degradation of existing wetlands in India.

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## 12.13 KEY WORDS

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**Wetland:** Wetland means an area of marsh, fen, peatland or water; whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters, but does not include river channels, paddy fields, human-made water bodies/tanks specifically constructed for drinking water purposes and structures specifically constructed for aquaculture, salt production, recreation and irrigation purposes.

**Wetlands Complexes:** Wetlands complexes mean two or more ecologically and hydrologically contiguous wetlands and may include their connecting channels/ducts.

### ABBREVIATIONS

|             |   |                                                                       |
|-------------|---|-----------------------------------------------------------------------|
| NRCP        | : | National River Conservation Plan                                      |
| GAP         | : | Ganga Action Plan                                                     |
| MLD         | : | Million Liters per Day                                                |
| BOD         | : | Biochemical Oxygen Demand                                             |
| NGRBA       | : | National Ganga River Basin Authority                                  |
| STP         | : | Sewage Treatment Plant                                                |
| MOEF & CC   | : | Ministry of Environment, Forest and Climate Change                    |
| MOWR, RD&GR | : | Ministry of Water Resources, River Development and Ganga Rejuvenation |

|       |   |                                                        |
|-------|---|--------------------------------------------------------|
| AMRUT | : | Atal Mission for Rejuvenation and Urban Transformation |
| MOUD  | : | Ministry of Urban Development                          |
| UASB  | : | Up-flow Anaerobic Sludge Blanket                       |
| NMCG  | : | National Mission for Clean Ganga                       |
| NLCP  | : | National Lake Conservation Plan                        |
| NPCA  | : | National Plan for Conservation of Aquatic Ecosystems   |
| NWCP  | : | National Wetland Conservation Program                  |
| CRZ   | : | Coastal Regulation Zone                                |

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## 12.14 SUGGESTED FURTHER READING/REFERENCES

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Iyer, R.R. (2015). Living Rivers, Dying Rivers. Oxford University Press.

### Web Links

<https://nrcd.nic.in/writereaddata/FileUpload/23617950NRCP%20Backgrpund.pdf>

[http://www.moef.gov.in/sites/default/files/National%20River%20Conservation%20Plan\\_0.pdf](http://www.moef.gov.in/sites/default/files/National%20River%20Conservation%20Plan_0.pdf)

[https://nmcg.nic.in/pdf/13\\_Guide%20Lines%20IAndD%20and%20STP%20-%20Final.pdf](https://nmcg.nic.in/pdf/13_Guide%20Lines%20IAndD%20and%20STP%20-%20Final.pdf)

[http://www.moef.nic.in/sites/default/files/nlcp/NLCP\\_guideline.pdf](http://www.moef.nic.in/sites/default/files/nlcp/NLCP_guideline.pdf)

<http://www.indiaenvironmentportal.org.in/files/file/National%20Lake%20Conservation%20Programme.pdf>

<http://envfor.nic.in/division/national-wetland-conservation-programme-nwcp>

[https://nrcd.nic.in/npca/npca/nwcp/index\\_nwcp.aspx](https://nrcd.nic.in/npca/npca/nwcp/index_nwcp.aspx)

<http://nrcd.nic.in/npca/writereaddata/fileups/97112050Significant%20achievement.pdf>

<http://envfor.nic.in/sites/default/files/press-releases/DRAFT%20CRZ%20NOTIFICATION%2020181.pdf>

<https://nmcg.nic.in/gkc.aspx>

<http://www.moef.nic.in/sites/default/files/ngrba/Appraisal%20Note%20GKC.pdf>

<https://www.ramsar.org/sites-countries/the-ramsar-sites>

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## 12.15 ANSWERS TO CHECK YOUR PROGRESS

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### Check Your Progress 1

1. Please refer to section 12.4

2. Please refer to section 12.5

### **Check Your Progress 2**

1. Major activities of NMCG are to approve the planning, financing and execution of projects to overcome the contamination in the river Ganga. Besides this, the development of sewage treatment plants, catchment area treatment, flood control, creating public awareness and participation programs, conservation of aquatic life and such different measures for sustainable river management are the other activities of NMCG.
2. The Ganga Knowledge Centre is situated in Delhi, and is a part of the NMCG. The centre is set up to improve the nature of the execution of the National Ganga River Basin Authority (NGRBA) program. The key function of the Ganga Knowledge Center is to make and keep up, an excellent web-based interface for Ganga, a data focus (MIS) on all major Ganga projects, a GIS-based mapping arrangement of the Ganga basin, and a process for supporting new thoughts and procedures for connecting with partners through occasions, publications and online media.

### **Check Your Progress 3**

1. Please refer to section 12.11
2. Please refer to section 12.11
3. To prevent contamination from point sources, the following activities can be recommended in the lake catchment areas.
  - a) In situ measures of lake cleaning like de-silting, de-weeding, nutrient reduction, air circulation etc.;
  - b) Afforestation in the catchment area to reduce soil erosion and trap sediments;
  - c) Lake fencing and shoreline development;
  - d) Lake eco-development programmes;
  - e) Public awareness and public participation; and
  - f) Training and research for lake conservation.
4. Currently, 27 wetlands of India are under the Ramsar convention. Wetlands are essential for human progress and prosperity, a large number of individuals depend on them for drinking water, food and livelihood.
5. Please refer to section 12.10