
UNIT 7 CONSERVATION THROUGH THE AGES

Structure

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7.0 OBJECTIVES

This Unit should enable you to critically understand:

- Importance of Conservation for sustainability;
- Shifts in understanding of Nature and, therefore, of Conservation across historical time;
- Nature as dynamic and not a backdrop for history;
- Change in environments and habitats as an integral part of history;
- Changes in human-nature interactions as linked with changes in conservation strategy;
- Background for global need to conserve natural resources and its international ramifications;
- Significance of biodiversity and its link with sustainability and indigenous knowledge systems; and
- Historical perspective to policy decisions on natural resource management and sustainable development.

7.1 INTRODUCTION

Human activity has been impacting physical environment ever since humans have inhabited the planet. Prehistoric peoples did not live in a simple or constant state of peaceful coexistence with and within their natural surroundings. Evidence from palaeontology, paleoecology, archaeology, and anthropology suggest that dispersal of human population over past 120,000 years was accompanied by environmental degradation and extinction. Best-known prehistoric extinction is the disappearance of mastodons, ground sloths and other

large mammals which coincided with a major wave of human colonization between 12,500 and 10,000 years ago. Humans often employed fire to modify vegetation and concentrate populations of game animals. They fished, hunted and gathered in ways that affected species populations, animal behaviour and dynamics of inter-species relationships. They domesticated plant and animal species and altered natural hydrological systems through dams and canals. This was sometimes part of a process of adapting to extreme environments and often it changed the landscape itself. For example, forests became grasslands, scrubland or fields. Human intervention has now been identified by scientists in landscapes which appear completely natural. The term to describe this aspect of any habitat is anthropogenic. (Anthropogenic is the understanding that all ecosystems have been greatly modified by Anthropos or humans over thousands of years). Stephen J. Pyne ([1982], 2007), for example, has documented coevolution of humans, fire and vegetation in every terrestrial corner of the planet; Antarctica is the exception that proves the rule (Pyne, 1986).

People in landscapes throughout the world also recognized their dependence on non-human natural world. Their concern for sustainability manifested itself in an 'ethics of nature' which meant usage of nature in a manner that permits regeneration. K. Sivaramakrishnan notes,

"Ethics of nature may simply be understood as a set of abiding concerns and guiding principles that humans ponder, articulate and deploy in their interactions with non-human world, even as they fashion their own sense of identity and purpose in the world."

This ethics of nature is found deeply embedded in every living cultural tradition and in most Indian and South Asian cultures. It is often invoked and sanctified through religious doctrines. For example, Maasai of East Africa practiced livestock herding that allowed them to coexist with megafauna in their semiarid homeland. In Arctic region humans coexisted with caribou herds and marine mammals. For survival they valued what they received from nature and were concerned about sustainability. Sustainability focuses on meeting needs of the present without compromising ability of future generations to procure the same. Therefore, most traditional cultures developed sharing arrangements with other human communities to optimise use and sustainability, thus, recognising capacity of natural environment (with its seasonal variations). In India, along with other practices, concept of sacred grove was one such practice. Sacred groves are "ancient nature sanctuaries where all forms of living creatures are afforded protection through grace of some deity." Some of these traditions have survived into modern era, though many now contend with population growth, diminished resources, altered land tenure systems, climate change and rapid economic and technological change.

So, conservation may be contextualised as a practice that makes a habitat and community that lives in it sustainable through utilisation of inter-generational knowledge about nature and environment. What is to be conserved, how it has to be sustained, will depend on what that society produces, consumes and values.

Can we think of societies who were not prudent, but profligate; who did not conserve and were unable to sustain and reproduce their way of living? A major debate around Harappan civilisation explores this dimension. There are no simple answers. However, it is Jared Diamond in his book *Collapse: How Societies Chose to Fail or Succeed* (2004) who researches this and discusses it in great detail.

7.2 ETHICS OF NATURE: INDIA BEFORE BRITISH CONQUEST

The idea of protection, restoration or conservation of nature is as old as humanity. It has been expressed through ages in many different ways in distinct environments and ecologies.

India is a mosaic of many different ecologies and it is difficult to give details of myriad practices and religious sensibilities that go into making its understanding of nature and nature's conservation. The tradition of sacred groves is found across Indian landscapes. Brandis, the first Inspector General of Forests, found a large number of sacred groves in India and lamented their disappearance under British rule. These were undisturbed biological communities. Between 10-30% of land was left inviolate. Such a system of refugia was supported by promotion of keystone resource species (such as *figus glomerata*) which provided biological diversity.

In Part two of *My Fissured Land* (1993) Madhav Gadgil and Ramachandra Guha provide an ecological account of ancient and medieval India and impact of cultural beliefs on ecological issues. Interplay between religion and patterns of natural resource is discussed in interesting examples such as importance of deities of fire (Agni) and water (Varuna) in premodern patterns of resource use. They also demonstrate that over the millennia Indian society developed an incorporative approach which enabled different kinds of resource use and suggest that caste system facilitated a segmented but integrated approach. They see Indian caste system as a form of ecological adaptation where resource conservation is institutionalized as caste duties. In their words (1993: 110),

“Institutional mechanism for this process of incorporation is, of course, the caste system. And by accepting a distinctive, if subordinate position within caste hierarchy, hunters and gatherers could forestall extinction by continuing their traditional mode of resource use, though only at the cost of a larger subordination to victorious peasant mode. These two complementary strategies, of leaving some ecological niches (hills, malarial forests) outside purview of peasant mode and reserving certain niches within it for hunter-gatherers and pastorals, helped track a distinctive path of inter-modal co-operation and coexistence”.

7.3 CONSERVATION OF NATURE: UNDERSTANDING ITS HISTORY

Today conservation is an institutionalised practice, promoted by UN organisations and accepted as a policy by all nations of the world. Its roots may

be traced back to early modern period. In this period of human history navigation of seas, discovery of new world and attendant linkages (discussed as Ecological Imperialism in Unit 8) made global discussion of natural diversity possible. This process produced growing awareness of importance of natural world and its modification by human civilisation. In western world emerging scientific discoveries and Enlightenment brought to fore an appreciation of power of culture and increasing human control over nature. According to Vinita Damodaran the word “conservancy” was first adopted in Britain in 14th century with reference to control of river basins such as river Thames. During course of 18th century optimism about dominion over nature was expressed through discussions about role of climate in moulding human habitats. Nineteenth century witnessed further change with onset of Industrial Revolution. Impact of new machines and factories generated a concern for dismantling of agrarian way of life with its sustainable use of natural resources. In this context nature-culture duality was emphasised. Charles Darwin’s research showed that world was much older and also that it had changed a great deal over time. Nature with animals and plants followed universal laws studied by natural scientists whereas humans created culture and civilisation. This dichotomy produced the idea of nature as external to man and in its early phase conservation was simply the absence of anthropogenic activity. If humans were removed from a habitat it would be restored to its original state. Rousseau and later, romantic reaction to industrial life with its mechanisation and urban overcrowding mirrored this perspective. Romantic manifesto proclaimed a “return to nature”; “unspoilt nature” was seen as pure and spiritual source of renewal. Romantic ideas are in vogue even today and they deeply influenced first phase of nature conservation.

First phase of nature conservation was broadly in continuance with what Georgina Mace refers to as “nature for itself”. Belief that nature left to itself produces wilderness. In both Europe and USA, a cultivation of wild and wilderness became a call for restoration. Wilderness acquired the meaning of a place of pristine order, un-spoilt by men. First example of translation of this idea into a practice of conservation is found in United States. These decades saw virtual depletion of extensive pine forests of upper Great Lakes; overhunting of many game bird and mammal species by market hunters; rapid conversion of Midwest’s extensive prairies to agriculture; degradation of aquatic systems through overfishing, pollution and hydrological changes; and widespread overgrazing of semiarid western rangelands. Several well-recognized cases of species depletion and extinction – of white pine, waterfowl, bison (*Bison bison*), Carolina parakeet (*Conuropsis carolinensis*) and passenger pigeon (*Ectopistes migratorius*) – came to symbolize this era of unmitigated resource extraction and decline. In the late 19th century United States had a large and expanding frontier. American Indians, greatly diminished by war and pestilence, had been evacuated and it was possible to imagine large expanses of land where wilderness would reign. Strong American identification with wild nature found early expression in essays of transcendentalists Ralph Waldo Emerson and Henry David Thoreau, poems of William Cullen Bryant and novels of James Fenimore Cooper. George Perkins Marsh’s *Man and Nature: Or Physical Geography as Modified by Human*

Action (1864) is widely considered first great landmark in modern conservation literature. In 1872 US Congress established at Yellowstone – a 3,300 square mile wide area – as “public park” or “pleasuring-ground”. In 1885 New York city created a state forest preserve in Adirondack mountains to protect its wild character as well as its watershed values. That same year Canada designated Banff National Park its first. Impetus toward preservation drew heavily on enthusiasm of nature-writers such as John Muir who led political effort that in 1890 resulted in designation of an enlarged Yosemite National Park in California and who in 1892 founded Sierra Club. Between 1890 and 1914 in Europe, North America and among white populations of European colonies associations formed and pledged themselves to the cause of preserving nature. By 1910 United States boasted around 20 nature conservation organizations. United Kingdom saw the founding of National Trust in 1895 and Society for Preservation of Wild Fauna of the Empire in 1903. And at turn of the century, on European continent, conservation organizations emerged in quick succession. German Bund für Vogelschutz and German-Austrian Verein Naturschutzpark, French Société pour la Protection des Paysages, Dutch Vereeniging tot Behoud von Natuurmonumenten, Swiss Bund für Naturschutz and Italian Lega Nazionale per la Protezione dei Monumenti Naturali, for example, were all founded between 1899 and 1913. In other settler colonies in 1870s and 1880s national parks were founded in Canada, New Zealand and Australia. Each of these British settler societies interpreted American model in their own way. Europe also used this template for conservation. For example, establishment of national parks in areas of Sweden inhabited by Sami (Lapp) people since 1909 and Stelvio National Park created in 1935 by fascist Italy in formerly Austrian territory.

One arm of conservation movement was concerned with preservation of unspoiled nature or wilderness sites and protection of plant and animal species from extinction. Yellowstone became global model of nature protection and founding myth of international conservation movement. Acceptance of Yellowstone Park as a template by global conservationists was significant and had important ramifications for future. In early years of Yellowstone, American Indians were allowed to collect plants and herbs but were eventually denied access. “Wilderness preservation is a gesture of planetary modesty by most dangerous animal on Earth”. Yellowstone Model, therefore, called for removal of humans from protected areas.

In this period of early 20th century another form of conservation, more utilitarian, was also being advocated and developed in western world and implemented in colonies. This was promoted by imperial and colonial governments who were concerned about diminishing natural resources. At the core of utilitarian conservation was the concept of sustained yield. As Aldo Leopold observed, under the progressive conservation banner “wildlife, forests, ranges and waterpower were conceived to be renewable organic resources which might last forever if they were harvested scientifically and not faster than they reproduced. “Conservation” had until then been a lowly word, sleeping obscurely in dictionary. Public never heard of it. It carried no connotation of woods or

waters. Overnight, it became the label of a national issue.” A forest officer, he gradually moved away from this utilitarian ethic but it remained as policy till the coming of environmental movement. At leading edge of this movement Forest Service became a model not only for other resource management agencies but an important service all over the world. In 1913 an International Conference on Protection of Nature in Switzerland attracted representatives from 16 nations. World War-I prevented this effort from gathering momentum but in 1920s and 1930s intermittent steps were taken toward greater international cooperation:

- 1) Second International Conservation Conference in Paris in 1923;
- 2) Establishment in 1928 of an International Office for Protection of Nature in Brussels;
- 3) An unprecedented International Bird Conservation Conference in Paris in 1933;
- 4) Conference for Protection of African Fauna and Flora in London, also in 1933;
- 5) First North American Wildlife Conference in 1936; and
- 6) Establishment of Pan-American Union in 1940 dedicated largely to conservation issues in Western Hemisphere.

These set the stage for expanded international programs that emerged in aftermath of World War II. It is at this time that new developments in ecology and evolutionary biology began to inform conservation issues and forced conservationists to re-examine their scientific assumptions. Ecology (the term ecology was first used by German zoologist Ernst Haeckel in 1869) revolutionized scientific understanding of functioning of biological communities, landscapes and systems and evolutionary biology provided new perspectives on adaptations, roles and interactions of all species. It was conservationists like Leopold who tried to bring these developments together. He was critical of utilitarian perspective and moved from specifics of forestry to a more general concern with its connection to wildlife and a conservation-ethic based on “land as a whole”: “that human beings could maintain a healthy quality of life on land they inhabit only if their economic system worked with, and not against, underlying natural system.”

After World War-II conservation had to engage not only with new scientific methods but also new political alignments in post-colonial world. In this period human population growth, land degradation, air and water pollution and overexploitation of marine resources emerged as global-scale conservation issues. The war demonstrated interconnected global aspect of modern conservation. Developed nations were now concerned about developmental agendas of new independent nations and intellectuals like Russell Train and Julian Huxley and many other conservationists looked at “developing world” and discerned disturbing trends. Decolonization and economic development appeared to pose serious threat to exotic flora and fauna and scholars like Fairfield Osborn

(Our Plundered Planet, 1948) and William Vogt (The Road to Survival, 1948) argued that nature's wealth did not necessarily belong to any one nation but "to all the world.". Reflecting on this, national and international governments and organizations met in 1948 and formed International Union for Conservation of Nature (IUCN) with aim of preserving "entire world biotic environment".

Newly established United Nations was now involved in international conservation programs. As resource management professions became more specialized there was a tendency to adopt technical solutions to conservation problems. These changes divided conservationist issues by disciplines and institutions and distorted integrationist method that had emerged in pre-war era. At the same time earth sciences provided greater scientific understanding of interrelations within and among terrestrial, aquatic, marine and atmospheric systems. IUCN and World Wildlife Fund (later, World-Wide Fund) created in 1961 attempted to persuade nationalist leaders to adopt preservationist set of policies. They promoted creation of national parks or areas of state-protected "wild" nature that were legally cut off from human use. Persuading young nations to think of conservation rather than development was not easy.

In 1950s and 1960s transformation of genetics and evolutionary biology and new communication technologies changed the agenda. Adoption of agricultural pesticides, industrial chemicals and nuclear power created new set of concerns about human health and ecological systems. Publication of Rachel Carson's Silent Spring (1962) which examined impacts of DDT (dichloro-diphenyl-trichloroethane) and other pesticides kickstarted environmental movement in USA. Environmental movements of 1970s in North (developed world) and South (developing world) catalysed environmental activism and environmental history which also impacted the idea of conservation. Growing public awareness of environmental issues in 1960s offered an opportunity and encouraged all nations to come together and create new policies capable of reconciling environmental protection measures with global aspirations for economic development. One event in particular soon encapsulated this optimism. Proposed in 1968 and planned for June 1972, United Nations Conference on the Human Environment (UNCHE) became symbol of hope for environmentalists across the globe. Whereas in 1950s and 1960s environmental NGOs concerned with global development struggled to convince leaders of developing countries to adopt environmental protection. In years following Stockholm many NGOs focused their activism on sources of foreign aid and development assistance. In hoping to reshape development thought and policy in major corridors of power, activists seized on opportunities to play an increasingly active role in shaping:

- 1) US foreign assistance policy,
- 2) World Bank's lending activities, and
- 3) UN's development programs.

In this process many questions emerged:

- 1) How could and should environmental considerations be reconciled with developmental aspirations?
- 2) How could major development agencies be made accountable for effects on environment? And what could non-state actors do to pressure states to take environmental protection more seriously?

Efforts to answer these questions raised many debates, out of which emerged a hybrid understanding of environmentalism and development policy. This debate of mid-1970s finally produced a document that outlined basic principles for managing ecosystems. It said that economic growth should continue, provided it factored in protection of genetic diversity within a given ecosystem and permitted regeneration. Eventually, World Charter for Nature was adopted by United Nations on October 28, 1982. It proclaimed five “principles of conservation by which all human conduct affecting nature is to be guided and judged”:

1. Nature shall be respected and its essential processes shall not be impaired.
2. Genetic viability on earth shall not be compromised; population levels of all life forms, wild and domesticated, must be at least sufficient for their survival, and to this end necessary habitats shall be safeguarded.
3. All areas of earth, both land and sea, shall be subject to these principles of conservation; special protection shall be given to unique areas, representative samples of all different types of ecosystems and habitats of rare or endangered species.
4. Ecosystems and organisms, as well as land, marine and atmospheric resources that are utilized by man, shall be managed to achieve and maintain optimum sustainable productivity, but not in such a way as to endanger integrity of those other ecosystems or species with which they coexist.
5. Nature shall be secured against degradation caused by warfare or other hostile activities.

World Conservation Strategy, thus, outlined three principles to guide all development plans for “sustainable development”:

- 1) maintain essential ecological processes and life-support systems;
- 2) preserve genetic diversity within world’s ecosystems; and
- 3) ensure sustainable utilization of species in ecosystems.

Georgina Mace demarcates different phases of conservation strategies and suggests that till 1960s “under a “nature for itself” framing conservation success was measured with well-established metrics based, for example, on changes in number of species listed in IUCN Red List of threatened species or on coverage of protected areas. But by 1970s and 1980s in “nature despite people” these measures were separated by threat type and efforts made to report on species and areas that were not yet at risk but would soon be if pressures did not abate.”

An important aspect of a change in this strategy in 1980's was that it also recognised that conservation needed to alleviate poverty, improve public health and redress global inequality (Martinez Allier and Ramachandra Guha referred this to as 'environmentalism of the poor'). Other significant addition in mid 1980s to conservation agenda was growing acceptance of overwhelming importance of bio-diversity. In 1980's then terms sustainable development and bio-diversity conservation both became integral part of conservation policy. Yet, reconciling these multiple goals was an uphill task and 1980s and 1990s saw push and pull in various directions from various governments and international agencies.

In Whose conservation? Georgina Mace lists different phases of conservation strategy and suggests that ecosystem-based framings – “nature for people” and “people and nature” – required a paradigm shift because now the metrics required linked nature to human wellbeing, explicitly identifying benefits needed and received by people. Binary of man versus nature has been interrogated and man in nature has acquired significance. Metrics required for this are very different from those of species and protected areas. Now the definition of Conservation has changed considerably and according to Journal of Geography and Natural Disasters: “Environmental conservation is protection, preservation, management or restoration of natural environments and ecological communities that inhabit them. Conservation includes management of human use of natural resources for current public benefit and sustainable social and economic utilization.”

7.4 CONSERVATION IN COLONIAL AND POST-COLONIAL CONTEXTS: INDIA

As Sverker Sorlin has noted, conservation is activist arm of environmental history (The Contemporaneity of Environmental History, Journal of Contemporary History 2011, Vol. 46 No.3, pp. 610-630). In that context, Conservation, in modern sense of the term, emerged from environmental movements of 1970s and writing of environmental history in subsequent decades. Early environmental history written by Indian scholars like Madhav Gadgil and Ramachandra Guha laid emphasis on great transformation brought about by imperial agendas and considered colonial policy as a watershed and negative moment in environmental history of colonial India. Colonial state was castigated for commercial and exploitative use of natural resources, particularly forests and timber. Mahesh Rangarajan (1996) and Ramachandra Guha (1989) argued that the British cut trees for:

- 1) laying roads,
- 2) ship building and
- 3) railway sleepers.

This resulted in considerable deforestation in different parts of British India. Focus on forests and forestry was also linked to Chipko and other environmental movements but gradually diversity of South Asian biomes showed complex mosaic of environmental trajectories. 'Green Imperialism' (defined by Richard Grove and Vinita Damodaran) conceded that colonialism marked accentuation and transformation of scale and brought in new practices of scientific conservation. Rangarajan (2001) also argued that while forest-dwellers were hunting animals merely for food and survival, for colonial authorities hunting was a leisure sport which considered some animals like tiger as vermin. Vijay Ramdas Mandala (2015) says that hunting and conservation went hand-in-hand as essential part of British colonial economy in 19th and early 20th centuries in India. It was the then governor Lord Napier whose keen interest saw formation of Nilgiri Game Association in 1877 and passing of subsequent legislation of Nilgiri Game and Fish Preservation Act II of 1879. The act laid down new rules for establishment of closed season, preventing shooting of game animals and birds of certain specific kinds and regulating fishing licences. In addition, it laid down penalties for violation of game provisions. Passing of Elephant Preservation Act in same year was first in a series of enactments by colonial government in area of conservation. It was followed by Wild Birds Protection Act of 1887 and Wild Birds and Animal Protection Act, 1912. The latter, in particular, was extremely effective in imposing closed and open hunting seasons, also mandating a licence to hunt that thereon became functional in British India. Eric Strahorn describes the provision as 'new era of conservation' as it devised rules specifically to protect tiger species from decline by prohibiting tiger shoots in night, observing 'harvest' season of endangered wild animals and imposing restrictions on baggage of game, besides preserving 'charismatic' birds and animals. In addition, Bengal Rhinoceros Preservation Act was passed in 1932 to protect rare one-horned rhino species. Jim Corbett, who was known for hunting man-eating tigers in United Provinces, became well-known conservationist. With help of Malcolm Hailey, governor of United Provinces, between 1933 and 1935 Corbett succeeded in creation of a wildlife sanctuary in Kumaun hills (Hailey National Park, now known as Corbett Park). Later, Corbett devoted his efforts solely towards wildlife protection and advocated shooting animals with cameras instead of guns. A number of wildlife reserves such as the Banjara Valley Reserve and Kaziranga Sanctuary were also established around this time.

Post- colonial government, broadly, continued with policy of Protected Areas and it was in decade of 1970s that environmental movements and consciousness emerged in India like in other parts of the world. Indira Gandhi took keen interest and Wildlife Protection Act was passed in 1972, export of tiger skin was banned and Project Tiger was announced. Through 1970s new areas were designated as protected but in a densely populated country it was difficult to find areas without human habitation. Conservationist mindset, which considered pristine wilderness as ideal, continued to advocate exclusion and even removal of humans from protected areas. This was a practice that continued from colonial period. It affected livelihoods of peasant and tribal populations adversely because forests provided:

- 1) firewood,
- 2) fodder,
- 3) herbs, and
- 4) other forest produce.

This generated lot of hostility towards functionaries of Revenue and Forest Departments as was witnessed during Chipko Movement. In 1980s problems of managing these reserves surfaced and a survey showed that 70% of protected areas were used for cattle grazing, humans also lived inside them and in vicinity. Human habitations were affected by increasing numbers of pigs, deer and other animals who would raid fields. Increase of wildlife like tigers meant loss of domestic animals for nearby communities.

In 1988, in response to problems articulated by activists working with tribal groups and forest dwellers, a new Forest Policy was initiated by Government of India. This was linked to emergence of community forestry all over the world with support from World Bank and FAO. New policy emphasised customary rights and interests of tribal people and planned to associate them closely with protection, regeneration and development of forests to enable sustainability of natural resources and livelihoods. This was implemented in Eighth Five-Year Plan of 1990. Ban on timber in 1996 and Scheduled Tribes and Other Forest Dwellers Act, 2006 were part of this rethinking. However, forest officials were often reluctant to enforce this and many of these suggestions remained on paper. At the end of 20th century scholars like Vasant Saberwal, Mahesh Rangarajan and Ashish Kothari (People, Parks and Wildlife: Towards Coexistence, 2001) argued for a paradigm shift from fortress conservation to community-based conservation, with complete rupture from exclusionist perspective, and pointed out benefits of including local communities as stakeholders whilst invoking their knowledge of the ecosystem for more sustainable conservation strategies. An interesting and important argument given by Vasant Saberwal was that disturbances and competition define viability of ecosystems whereas exclusion destroys the dynamic and leads to depletion of bio-diversity. This is also pointed out by Madhav Gadgil and P.R. Sheshagiri Rao in Nurturing Bio Diversity (1998). Therefore, bio-diversity is often strengthened by human activity and discreet use of firing and grazing should be permitted.

1990s were a period of neoliberal policies in the world and in India which deeply affected conservation of nature. These policies promote:

- 1) creation of capitalist markets for natural resource exchange and consumption,
- 2) privatisation of resource control within these markets,
- 3) commodification of resources so that they can be traded within markets,
- 4) withdrawal of direct government intervention from market transactions, and

5) decentralisation of resource governance to local authorities and non-state actors such as Non-Governmental Organisations (NGOs).

Yet, it appears that withdrawal of state actors does not necessarily benefit local communities, rather its benefits accrue to international companies and corporations. So, in the end conservation benefits are mopped up by elites rather than the poor. It is worthwhile to end with quotation from Sunita Narain:

“We have not made environment into a development challenge. Because we have still not learnt how to use it sustainably. Therefore, environmental protection becomes an invariable conflict with development. A conflict between nature and jobs. Instead, what we need are policies and practices to use environment for greatest enterprise of jobs and prosperity. Build green futures from use of forests, land, water and fisheries. But we don’t know how. We don’t know how because we refuse to learn most basic lesson – to really trust people and communities. As yet, all we have done is to use bureaucratic tricks to stall and obfuscate. We will have to make changes – effective and earnest – to devolve powers in practice of managing the environment.”

Check Your Progress Exercise

1) Throw light on various environmental acts passed during British period. Did they help and facilitate protection and restoration of ecology or damage to it went side by side?

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2) State True or False for following statements:

- a) Maasai of East Africa practiced livestock herding that allowed them to coexist with megafauna in their semiarid homeland. ()
- b) The word “conservancy” was first adopted in Australia in 14th century with reference to control of river basins such as river Thames. ()
- c) In early years of Yellowstone national park American Indians were allowed to collect plants and herbs but were eventually denied access. ()
- d) The term “ecology” was first used by German zoologist Ernst Haeckel. ()
- e) International Union for Conservation of Nature (IUCN) was set up with aim of preserving “entire world biotic environment”. ()
- f) In 1980’s the terms sustainable development and bio-diversity conservation, both, became integral part of conservation policy throughout the world. ()

g) With help of Malcolm Hailey, governor of United Provinces, between 1933 and 1935 Sunderlal Bahuguna created a wildlife sanctuary in Kumaun hills. ()

h) Indira Gandhi took keen interest in environmental consciousness and movements. Wildlife Protection Act was passed in 1972, export of tiger skin was banned and Project Tiger was announced. ()

7.5 SUMMARY

In this Unit you learnt about significance of conservation and protection of ecology for sustainability of everything on this planet, be it humans of flora and fauna. You were made aware about changes in understanding of environment and its conservation across historical time. An outline of history of conservation was also delineated in India and West. How our colonial masters impacted our ecosystems is also explained to you in some detail. How post-colonial governments up till the present dealt with issue of protection and restoration of Nature is also brought to fore in this Unit.

7.6 KEY WORDS

Anthropogenic: Caused or produced by humans.

Biodiversity: Diversity among and within plant and animal species in an environment.

Sustainable development: Organizing principle for meeting human development goals while simultaneously sustaining ability of natural systems to provide natural resources and ecosystem services on which economy and society depend.

7.7 ANSWERS TO CHECK YOUR PROGRESS EXERCISE

1) See Section 7.4

2) a) True, b) False, c) True, d) True, e) True, f) True, g) False, h) True.

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