



Studies on overexploited Plants of Nagzira Wildlife Sanctuary, District - Gondia, Maharashtra, India.

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Abstract: Plants have many and diverse uses which have direct or indirect bearing on the civilization of human society. India is the second largest country in Asia and seventh in the world. Over and above, with diversity of climate, soil and topography with almost all types of ecosystems found anywhere in the world and hundreds of biotopes -each supporting rich characteristic floristic and faunistic elements. The general survey of medicinal plants from Nagzira wildlife sanctuary shows total 229 species comprising 71 families, 190 Genus including 207 species of dicots and 22 species of monocots. More stress has been given on plants used by tribals and locals for their medicinal purpose. There are c 19 species which are over-exploited because of economic products such as gum, edible fruit, medicinal use and *Bidi* vapors.

KEY Words: Overexploitation, wildlife, drug, phytochemical, biotopes

Introduction: From ancient time man is dependent on the plants product to fulfill the basic needs such as food shelter and clothing, still today we human are depend on various plants product such as wood, gum, honey, tannin, resins, dye, wild fruits, edible corms, tubers, rubber, *Bidi* vapors and various ayurvedic medicine etc. because of unsustainable use forest and its product many species of plants are become extinct/ vulnerable or overexploited. The rich floristic diversity in India is not withstanding i.e., c 1700 spp. of Indian flowering plants are threatened with extinction to-day (c 7 percent of 26,106 globally threatened spp. are from India). During last 400 years c 654 spp. have become extinct (WCMC, 1992). During past two centuries, India has lost about 17 spp. like *Sterculia khasiana* and number of other spp. also could not be relocated due to natural (abiotic) and manmade (biotic) causes (Jain & Sastry, 1984; Nayar and Sastry, 1990). Conservation of bio wealth in India initiated dates back to 4th century B.C. and is attributed to Acharya Kautilya who in Arth-shastra underlined the need for setting aside forested areas for not only protection of Wildlife, but also to provide goods and services to the society (Rangrajan,1992). Similarly, the Emperor Ashoka,in 252 B.C.,laid down 'Stone edicts' for conservation of Wildlife (Saharia ,1981;Mackinnon *et al.*, 1986). Since the vedic periods, every form of life was loved, worshipped and even sheltered in the ashrams of sages (hermitages), there by nurturing the philosophy of nature conservation (Jain and Sastry, 1981). The importance of the forests in remote areas of Kutch (Gujarat , India) was realized much earlier by Maharaja (King) of Kutch who demarcated certain areas (Chadua Rakhil & Nadibaug) as reserved protected forests where biotic activities like hunting of wild animals, felling of trees, Grazing etc. were strictly prohibited(Kothari & Singh,2002).



Materials and Methods: To study the plants diversity, plant exploration tours were conducted in different seasons. The area was surveyed extensively and intensively. The flowering and fruiting specimens were collected. Field observations regarding habit, habitat, color of flowers, local names, relative abundance, associated plants etc. were noted. Close up of flowering/ fruiting material along with their associated plants were photographed. Information about the medicinal uses of each plant to cure various diseases also noted from local peoples and confirmed with the help of authentic reliable literatures. Plants were processed in customary way in the laboratory and identified in regional herbarium of Botanical Survey of India, Pune (BSI).

About the Study Area: Nagzira Wildlife Sanctuary, Maharashtra, India.

The wildlife Sanctuary (Biogeographical Province 6D) was constituted as per the notification No. WLP/1669/22860/Y/dt.3/6/1970, covering an area *152.81 sq. km*. The Sanctuary is miraculously preserved as 'Green Oasis' in the eastern most part of the Maharashtra State and has a great importance from bio-diversity conservation point of view. The name Nagzira Wildlife Sanctuary is based on idol Nagdev and Nagzira lake.

Location: The Sanctuary is situated in Sakoli tahsil of Bhandara district and Arjuni (Sadak), Goregaon & Tiroda tahsil of Gondia District (Maharashtra State) under the Nagzira range at 79° 58' E to 80° 11' E longitude and 21° 12' N to 21° 21' N latitude.

The Sanctuary is surrounded externally by the Reserve forests of Gondia forest division and Bhandara Forests Division on the Northern and Eastern side and by Reserve Forests of FDCM of Bhandara Division on the Southern and Western side. The length of internal range of boundary is 104.53 km. 'Thadezari' is the only village geographically situated inside the Sanctuary, coincide the Compartment boundary. Ecologically, the forest area surrounding the Sanctuary is a self-sufficient ecosystem with its living fauna & flora.

Area of Nagzira was declared as Wild life Sanctuary vide Govt. Notification No. WLP/1669/228601-y dt.3/6/70. As per the memo. no. WLP/Gen/HPA/ 45(7071/B/8360, dt.23/7/70) from Chief Conservator of Forests, Maharashtra State, felling's have been suspended in the coupes falling within the area of Sanctuary and Grazing is also prohibited. Shooting of tigers is prohibited vide Govt. Resolution No. WLP/1570/45404-Y, dt.25/7/1970.

Geology and soil: The Sanctuary exhibits amazing diversity of terrain and altitude ranges from nearly 30 m to 560 m above sea level.

Soil: Soils are laterite texture varies from sand to sandy-loam in plains and lower slopes, sandy to Murram on the steep slopes and rocky on the precipitous slopes. Calcareous soils found in patches and foot hills along the nasal and near villages, where top soil is removed. The laterite soils are well suited for *Tectona grandis*.

Climate: The temperature varies between 6° c during December and 46° c during May.

The mean annual rainfall observed is 1200 mm. The maximum rainfall about 1600 mm occurs during July-August. Maximum wind velocity is observed from June-August.

Drainage: The seven important lakes in the adjoining areas are Chorkhamara, Bodalkasa, Balapur, Ledezari, Malujunga, Murpar and Rangepar. There are two big water reservoirs within the Sanctuary at Nagzira and Thadezari lakes.

Fauna: The Nagzira wildlife Sanctuary has a number of fishes, c 34 species of mammals, 166 species of birds, 36 species of reptiles and four species of amphibians. Wild animals to spot are the Tigers, Panthers, Bison, Sambars, Nilgais, Chitals, Wild boars, sloth bears and dogs.

Vegetation: The vegetation of the area is of South Indian Moist deciduous type (Champion & Seth, 1968) and distributed in three different zonation. The top canopy of the forest includes tree species like *Anogeissus latifolia*, *Bridelia retusa*, *Cleistanthus collinus*, *Diospyros melanoxylon*, *Sterculia urens*, *Xylia xylocarpa* etc.

Result and Discussion: The general survey of medicinal plants from Nawegaon National Park shows total 229 species comprising 71 families, 190 Genus including 207 species of dicots and 22 species of monocots. Local tribes are “Gond” More stress has been given on plants used by tribals and locals for their daily needs, economic and medicinal purpose.

There are c 27 plants which are either vulnerable, endangered or threatened if over-exploited for commercial or other purposes. Among them 2 spp. viz. *Iphigenia magnifica*, and *Sphenostylis bracteata* are vulnerable and c 6 endemic species are endangered viz. *Barleria prattensis*, *Chlorophytum glaucum*, *Curcuma inodora*, *C. pseudomontana*, *Eulophia ochreatea*, *Zingiber neesatum* etc. and there are c 19 species which are not endemics but over-exploited for medicinal and other purposes viz. *Andrographis paniculata*, *Caesalpinia bonduc*, *Diospyros melanoxylon*, *Embelia basaal*, *Embelia officinalis*, *Entada rheedei*, *Gardenia gummifera*, *Indigofera constricta*, *Justicia adhatoda*, *Madhuca longifolia* var. *latifolia*, *Mimusops elengi*, *Plumbago zeylanica*, *Pongamia pinnata*, *Rauvolfia serpentina*, *Semecarpus anacardium*, *Sterculia urens*, *Tectona grandis*, *Tinospora cordifolia*, *Vetiveria zizanioides* information is collected from tribals and local people from the area studied and present status is based on information and literature.

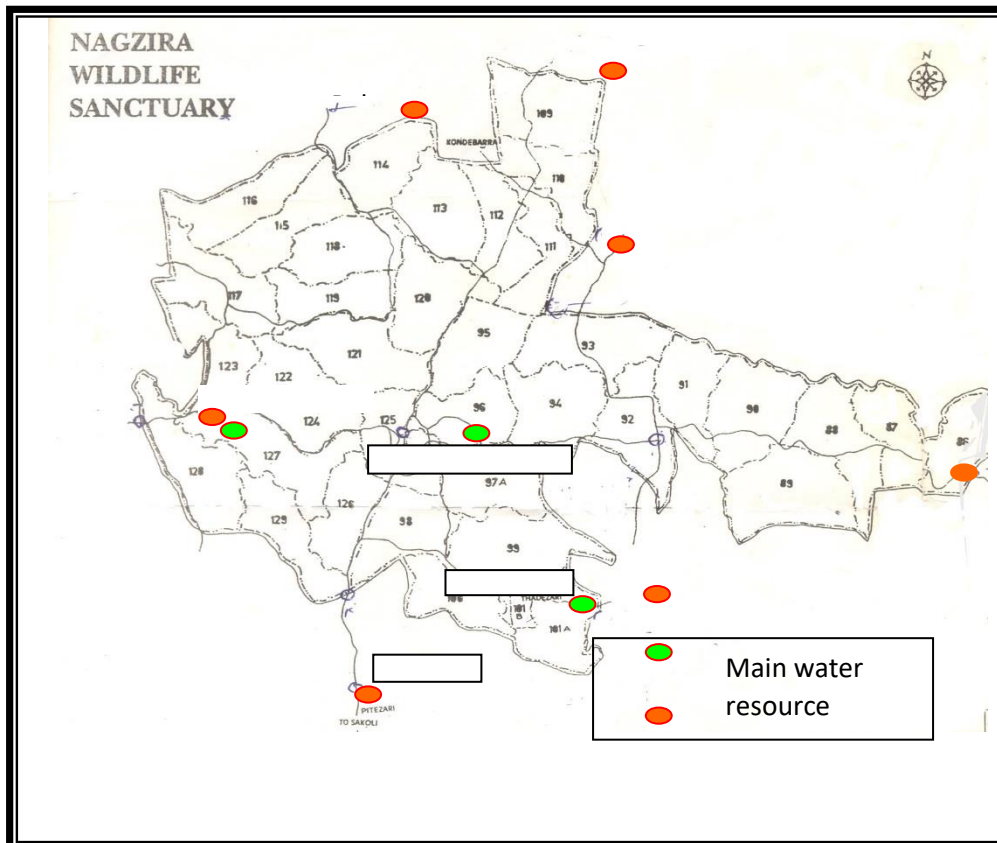
Conservation: To conserve plants in their natural habitat (*In situ conservation*) 13 biosphere reserves, 89 National parks and 489 Wildlife Sanctuaries including 5 National parks and 35 Wildlife Sanctuaries (Area 14747.84 sq. km) in Maharashtra have been declared by Govt. of India.

The faunistic diversity depends on rich floristic diversity. This inter dependence was emphasized by Gilbert (1980) stating that loss of a Keystone mutualist (typical plant) would cause loss

of mobile links (animals) followed by link of dependent plants. A noted conservationist Myer (1984) also concluded that at least one species is disappearing each day in tropical forests alone and in a few more years there will be species loss each hour. The disappearing plant can take with it 10-30 dependent species such as insects, taller animals and even other plants (Jain & Sastry, 1980). Hence to preserve the animal diversity, it is essential to preserve plant diversity.

International Union for conservation of Nature & Natural Resources (IUCN) with the advice of co-operation & financial support of the United Nations, Environmental Programme (UNEP) and the World Wildlife Fund (WWF) has prepared a world conservation strategy on 5 March 1980 with 3 main objectives viz. 1) Maintenance of essential ecological processes and life-support systems; 2) Preservation of Genetic Diversity and 3) Sustainable utilization of species and ecosystems. Through the efforts of IUCN, The Indian Wildlife (Protection) Act 1972 has also further been amended to include plants for their conservation.

Discission: To save the biodiversity of Nagzira Wildlife Sanctuary from biotic man-made threats such as overexploitation for its edible fruits, medicine, food, *Bidi Vapor*, forest fire, overgrazing, construction of roads and abiotic factors like heavy rain fall, land slide. it is our moral duty to create awareness among the common people through all medias (Radio, Television, Newspapers), flower shows etc. Starting from children education. For conservation and awareness, Botanical Survey of India has published 4 volumes of the *Red Data books of Indian plants* (Singh & Singh, 2002).





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