



सत्यमेव जयते



# NORTH SEVOK MEDICINAL PLANTS CONSERVATION AREA (MPCA)

## WEST BENGAL



वन विभाग  
पश्चिमबंग सरकार



# Spatial Distribution Map of North Sevoke MPCA in West Bengal.

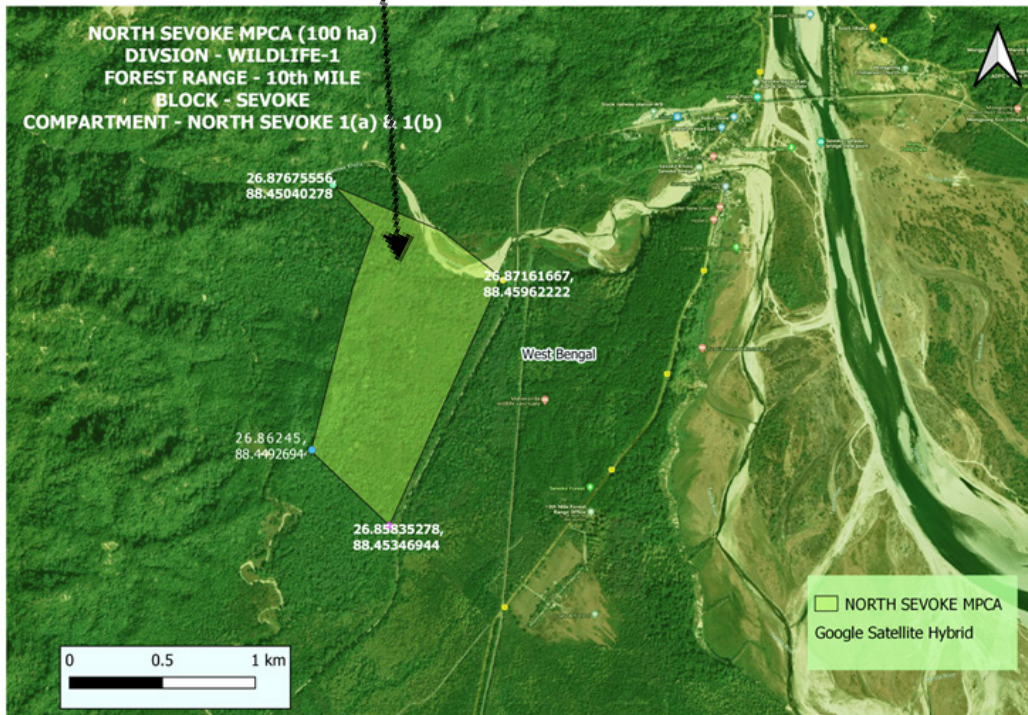
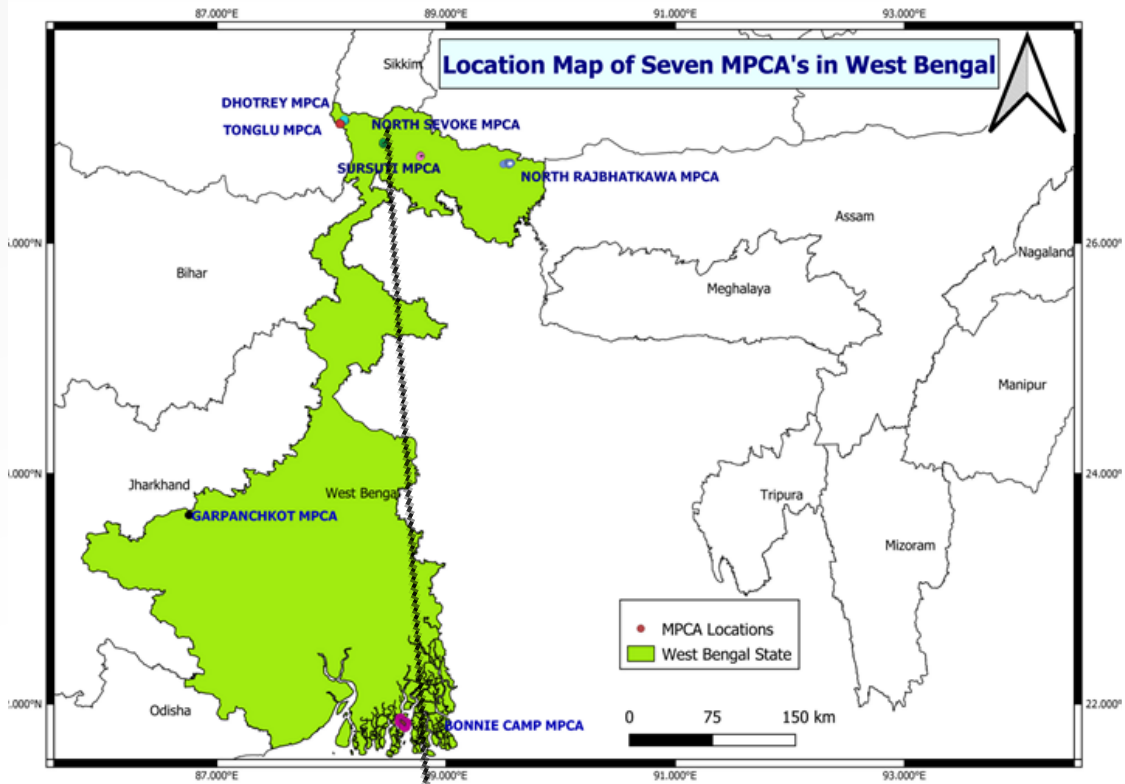


Fig. No. 1: Spatial distribution Map of North Sevoke demarcating the area under the MPCA.

## MPCAs as an inventive tool for Forest Biodiversity Conservation in West Bengal

The state of West Bengal is blessed with varied phytogeography that allows it to host a diverse range of plants and animals. The state has 11, 879 sq. km of forested area of which 39.50% is under protected area network. In 2007-09, seven (7) Medicinal Plant Conservation Areas (MPCAs) were established in the State for promoting Conservation of Medicinal Plants and Traditional Knowledge for enhancing health and livelihood security of the surrounding indigenous communities. In the face of global warming and climate change the MPCA's can act as buffers for carbon sequestration, habitat protection, gene pool conservation, health and poverty issues and other ecosystem services. Each MPCA can act as a permanent plot for future assessments on impact of climate change on forest ecosystems. Awareness regarding the objectives and presence of the MPCA is of paramount importance to meet the Global Sustainable Development Goals (SDGs) of UN. A pictorial guide book of the medicinal plants of the MPCA's and their IUCN status is a prerequisite for facilitating the conservation initiatives of every MPCA.

Of the 7 MPCA's in the State of West Bengal, three were established in North Bengal, namely North Sevoke, Sursuti and North Rajabathkhawa, two in Darjeeling Hills namely Dhotrey and Tonglu MPCA and two in South Bengal namely Bonnie Camp in Sundarbans and Garpanchakot in Purulia.

The North Sevoke MPCA has an area of 100 ha in the 10th Mile Forest Range of Kurseong Sub Division under Wild Life-1 Forest Division in North Sevoke 1(a) and 1(b) Block of Darjeeling District (Fig. No 1)

Table 1. Community, Phytogeographic, Climatic, Edaphic and Administrative profile of North Sevoke MPCA.

Community	
The adjacent villages such as 10th mile, Sevoke bazaar, Chamakdangi, Toribari and Singhihora are inhabited by Nepali and Bengali communities.	The major livelihood sources were daily wage labour, Tea garden worker, charcoal making, farming work, NTFP collection, and few govt. jobs.
Phytogeography	
Lat- N 26° 41' Long- E 89° 33' Elevation- 161-184m MSL Forest Type – As per Champion & Seth's Classification: 3C North India Moist Deciduous Forest.	Dominant tree species (as per VI values) <i>Bauhinia purpurea</i> L. <i>Careya arborea</i> Roxb. <i>Clerodendron viscosum</i> Vent. <i>Gmelina arborea</i> Roxb. <i>Oroxylum indicum</i> (L.) Kurz <i>Streculia villosa</i> Roxb., <i>Tetrameles nudiflora</i> R. Br. <i>Terminalia crenulata</i> (Heyne) Roth.
Climatic Condition	
Temperature in oC Max – 36 Min-12 Rainfall in mm 3500 unit	Spring- January to February Summer- March-May South West Monsoon- June-September. Winter –October to January. High altitudes experience snowfall in winter.
Edaphic Condition	
The soil is sandy loam but has dark colouration due to deposition of ash from repeated forest fires.	
Administration	
The MPCA comes under Protected area network and is a Wildlife Sanctuary.	The FPC's and EDCs are 10th Mile Forest Range Wildlife-I Forest Division with 1147 ha area. MPCA- 100 ha

The MPCA lies within the Mahananda Wild life Sanctuary. Though the adjacent villages are close to the MPCA but most of them are separated by the Teesta river from The MPCA. The North Sevoke MPCA harbours 343 medicinal plants. About 16 plants of this group are under the threatened category. A large number of plants have been reported as rare in this MPCA (Table 2)



Sl. No	Sc. Name	Family	Habit	Status
1	<i>Abelmoschus moschatus</i> Medik	Malvaceae	Herb	Endangered & Rare
2	<i>Alangium chinensis</i> (Lour.) Harms	Alangiaceae	Shrub	Rare
3	<i>Allophylus simplicifolius</i> Radlk	Sapindaceae	Shrub	Rare
4	<i>Alpinia calcarata</i> (Haw.) Roscoe	Zingiberaceae	Herb	Endangered & Less Common
5	<i>Amischotolype hookerii</i> (Hassk.) H. Hara	Commelinaceae	Herb	Rare
6	<i>Ampelocissus barbata</i> (Wall.) Planch.	Vitaceae	Climber	Vulnerable & Common
7	<i>Anisomeles heyneana</i> Benth.	Lamiaceae	Herb	Rare
8	<i>Aristolochia indica</i> L.	Aristolochiaceae	Climber	Endangered & Less Common
9	<i>Aristolochia tagala</i> Cham.	Aristolochiaceae	Climber	Rare
10	<i>Balakata baccata</i> (Roxb.) Esser	Euphorbiaceae	Tree	Rare
11	<i>Bauhinia vahlii</i> Wight & Arn.	Fabaceae	Liana	Rare
12	<i>Capparis olacifolia</i> Hook. F. & Thoms.	Capparidaceae	Shrub	Rare
13	<i>Castanopsis argentea</i> (Blume) A.DC	Fagaceae	Tree	Rare
14	<i>Celastrus paniculatus</i> Willd.	Celastraceae	Climber	Vulnerable & Less Common
15	<i>Cinnamomum bejolghota</i> (Buch.-Ham.) Sweet.	Lauraceae	Tree	Endangered & Rare
16	<i>Cinnamomum cecidodaphne</i> Meissn.	Lauraceae	Tree	Endangered & Less Common
17	<i>Dioscorea prazeri</i> Prain & Burkill	Dioscoreaceae	Climber	Endangered & Less Common
18	<i>Drosera burmanni</i> Vahl.	Droseraceae	Herb	Endangered & Less Common
19	<i>Gynocardia odorata</i> Roxb.	Achariaceae	Tree	Endangered & Rare
20	<i>Helminthostachys zeylanica</i> (L.) Hook.	Ophioglossaceae	Herb	Endangered & Less Common
21	<i>Hiptage benghalensis</i> (L.) Kurz	Malpighiaceae	Shrub	Rare
22	<i>Impatiens trilobata</i> Colebr.	Balsaminaceae	Herb	Rare
23	<i>Machilus glansucescens</i> (Nees) Wight.	Lauraceae	Tree	Critically Endangered & Less Common
24	<i>Magnolia hodgsonii</i> (Hook.f. & Thomson) H. Keng	Magnoliaceae	Tree	Rare
25	<i>Mesua ferrea</i> L.	Caryophyllaceae	Tree	Endangered & Less Common
26	<i>Morinda citrifolia</i> L.	Rubiaceae	Shrub	Vulnerable & Less Common
27	<i>Oroxylum indicum</i> (L.) Kurz	Bignoniaceae	Tree	Rare
28	<i>Pericampylus glaucus</i> (Lam.) Merr.	Menispermaceae	Climber	Vulnerable & Rare
29	<i>Piper lonchites</i> Schult.	Piperaceae	Climber	Rare
30	<i>Stereospermum colais</i> (Dillw.) Mabb.	Bignoniaceae	Tree	Vulnerable & Common
31	<i>Uvaria hamiltonii</i> Hook.f. & Thomson.	Annonaceae	Tree	Rare
32	<i>Melletia pachycarpa</i> Benth.	Fabaceae	Liana	Rare
33	<i>Gnetum montanum</i> Markgr.	Gnetaceae	Liana	Rare

Rare (<50 plants), less common (< 100 plants), common (>500 plants)

The community adjacent to the North Sevoke MPCA used medicinal plant parts growing in the neighbourhood of the MPCA to treat ailments such as jaundice, pneumonia, fever, joint pain, bone fracture, skin disease, scabies, arthritis, ulcer, stomach ailment and as food item (Table 3). Various types of mushroom species were the main

NTFPS collected from the adjoining forests of the MPCA. In vitro cultivation of such mushrooms could provide livelihood opportunities for the local community close to the MPCA. Farming in the adjacent villages is often disrupted by elephant herds. Alternate livelihood sources can be generated by the local people by creating home nurseries of medicinal plants. Further value addition to medicinal plant part can reduce extraction pressure to the local biodiversity and also improve local economy. The MPCA can act as a major ecological and economic tool for the sustainable development of surrounding areas specially with respect to various ecosystem services.

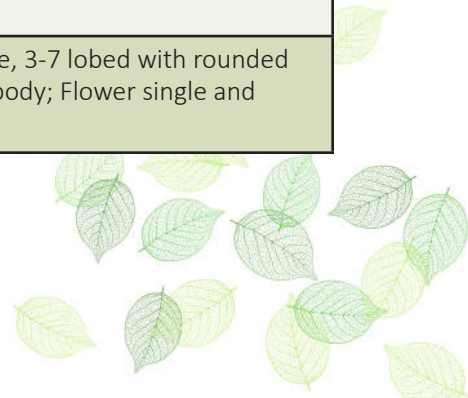
Botanical name	Local Name	Medicinal use	Local use/traded
<i>Ageratum conyzoides</i>	Elamay	Plant used to treat wounds and bruises.	Local use
<i>Baccurea sapida</i>	Kusum	Bark used to treat skin disease and fruit cover for treating body pain.	Local use
<i>Calotropis gigantea</i>	Akh/Akan	Latex used for treating body and joint pain.	Local use
<i>Cassia alata</i>	Dadpata/ Namaste patta	Bark, Leaves and flower used to treat skin disease specially ringworm .	Local use
<i>Cissus quadrangularis</i>	Harjor	Entire plant paste used to treat bone fracture.	Local use
<i>Costus speciosa</i>	Betlauri	Stem and rhizome used in treating jaundice and intestinal problem.	Local use
<i>Cuscuta reflexa</i>	Sarnalata	Stem juice is used for treating jaundice.	Local use
<i>Eupatorium odoratum</i>	Bonmara	Leaf paste is used to treat wounds.	Local use
<i>Ficus religiosa</i>	Pipal/Bot	Leaf juice used in fever.	Local use
<i>Lentinus sp. Auricularia sp.</i>	Cheo	Plant used as food supplement.	Local use
<i>Oroxylum indicum</i>	Totola	Bark used for jaundice; seeds used to treat pneumonia.	Traded and locally used; population declining
<i>Phyllanthus emblica</i>	Aonla	Fruits used as food supplement and tonic.	Local use and traded
<i>Piper longum</i>	Pipla	Fruit used in cough and cold.	Traded and locally used
<i>Rauvolfia serpentina</i>	Kulein	Root juice used to treat fever.	Rare in the forest; roots used and also sold in the market
<i>Solanum sp.</i>	Jangli tomato	Leaf paste is used externally to treat arthritis.	Local use
<i>Terminalia bellirica</i>	Borrah/ Bohera	Fruits used to treat ulcer and stomach ailment.	Traded and locally used
<i>Terminalia chebula</i>	Harrah/ Hartaki	Powdered fruit or fruits juice is used as drink to treat cough.	Traded and locally used
<i>Ziziphus nummularia</i> (Burm. f.) Wight & Arn.	Jangliboyer	Seed powder used for treating scabies.	Local use
<i>Nasturium officinale</i>	Simrayo	Leaves boiled and given in T.B. and chest pain; jaundice; raw leaf juice given in tuberculosis.	Locally used
<i>Panax-pseudo ginseng</i>	Salaney	Rhizome gives good health and used as aphrodisiac.	Locally used
<i>Paris polyphylla</i>	Satwa	Roots used as antidotes; for treatment of boil.	Locally used
<i>Picrorhiza kurrooa</i>	Kutki	Roots and rhizome used in body ache and fever.	Locally used

<i>Podophyllum hexandrum</i>	Papari	Plant used for treatment of skin scars; used in gynaecological infections and other sexual infections; roots as blood purifier.	Locally used
<i>Swertia chirayita</i>	Chiroto	Whole plant used in fever.	Locally used
<i>Taxus wallichiana</i>	Dhangre Salla	Cancer, joint pain, decoction of leaves in body pain; decoction given in high blood pressure.	Locally used, traded

*Abelmoschus moschatus* Medik



Common Name	Musk mallow/ Mashkdana/ Latakasturi
Family	Malvaceae
Habitat and Distribution	Distributed in India, Bangladesh, Indonesia, Thailand, Malaysia, China and Fiji Islands. It grows in open moist area in tropical region up to 1500m altitude. A good population is recorded in the MPCA area.
Ecology:	Seeds are eaten by weevils in the forest floor. However, the rate of germination is good in moist habitat. Seeds are dispersed by wind and animals. This species grows in a community of many other species such as <i>Thunbergia coccinea</i> , <i>Clerodendrom viscosum</i> , <i>Commelina longifolia</i> , <i>Berlaria strigosa</i> , <i>Asplinium erectum</i> , <i>Spillanthus oleresia</i> etc.
Threat status	Near Threatened (NT)
Description	An undershrub, 2-2.5 m tall. Leaves are variable in shape and size, 3-7 lobed with rounded base, long pointed apex ; covered with rough hairs all over the body; Flower single and yellow in colour and fruits are capsules about 6 cm long.



Flowering & fruiting	October to January
Uses	Seeds used in case of <b>nervous debility</b> , hysteria, fatigue, heart disease, <b>fistula</b> , toothache, eye disease, mouth complaints, gonorrhoea; <b>seed powder mixed with milk and applied for itching and skin disease.</b>
Trade information	Dry seeds are sold in the market. One of the highly traded medicinal plants of India; Estimated consumption in the domestic herbal manufacturing units has been assessed between 200-500 MT.
Propagation	Seeds are used for propagation and cultivation.

*Stereospermum colais* (Buch. –Ham. Ex Dillwyn) Mabb.



Common Name	Patala/ Trumpet flower yellow snake tree
Family	Bignoniaceae
Habitat and Distribution	It is distributed in Indo-China and Indo-Malaysia. It grows in scrub, moist deciduous and semi evergreen forest of tropical region.
Ecology:	The individuals are sparsely distributed in the moist deciduous forest; It has winged seed dispersal mechanism; the associated species are <i>Pterygota alata</i> , <i>Tetrastigma campylocarpum</i> , <i>Polyalthia simiarum</i> , <i>Aphanamixis polystachya</i> etc.
Threat status	Vulnerable (VU)
Description	Trees up to 25 m tall. Leaflets 7-9, lance-shaped, 5-12 x 2.5-5.5cm , base pointed, apex long –pointed –caudate, margin entire. Flowers ca. 1.5cm across, in axillary and terminal panicles, yellowish brown. Capsules up to 35x1 cm long bent. seeds winged.
Flowering and fruiting	April –December
Uses	Root bark is one of the constituents of “Dashmula” preparation used as tonic, diuretic in Ayurveda. It is anti-inflammatory, anti-asthmatic, cardiotoxic, and used in piles and nervous disorders.



Trade information	Roots are traded nationally and mixed with <i>S. chelonoides</i> as substitute.
Propagation and cultivation	Propagation with seeds.

*Alpinia calcarata* (Haw.) Roscoe



Common Name	Chittaratha, Aratha, Rasna
Family	Zingiberaceae
Habitat and Distribution	Distributed in India , Myanmar, Sri Lanka, Thailand, Malaysia, China, Indonesia, New Guinea. In India it is cultivated in several places.
Ecology:	This species grows in a community of many other species such as <i>Berlaria strigosa</i> , <i>Cayratia pedata</i> , <i>Commelina longifolia</i> , <i>Curculigo orchioides</i> , <i>Curcuma zedoaria</i> etc.
Threat status	Endangered (EN)
Description	Robust herb up to 2 m ht., rhizomes horizontal, leaves are; aromatic, narrowly elongated, 15-30 cm x 2-3 cm; narrow base, entire margin. Flowers white and borne on terminal branched inflorescence; Largest petal (labellum) is variegated with red and yellow stripes ; Fruits are capsules, hairy, globose, orange red with many seeds.
Flowering and fruiting	Flowering: March-April; Fruiting August to September
Uses	It is a stimulant, carminative and has <b>anti-tubercular</b> properties. Roots / rhizome used to treat <b>rheumatism and bronchial catarrh</b> , seeds treat colic, diarrhea and vomiting.
Trade information	It is a highly traded medicinal plants. Around 200 MT of dry rhizomes are traded and consumed by the herbal industries per year .
Propagation and cultivation	Propagated with rhizome.

*Mesua ferrea* L.

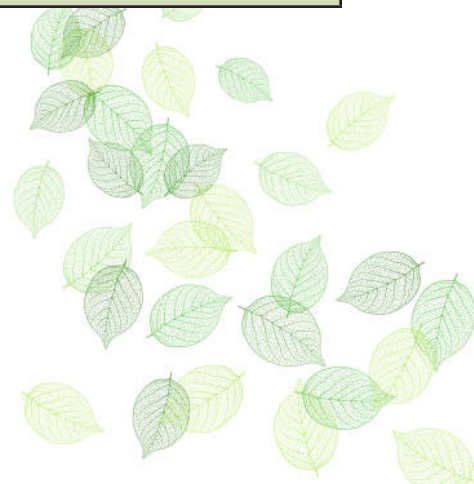


Common Name	Ironwood, Nagakesar/Nagkesar
Family	Clusiaceae
Habitat and Distribution	The species is distributed in Indo-Malaysian region; in India Eastern Ghats, North-East Region, and Andaman Islands specially along the stream sides and river banks.
Ecology:	During full bloom, thousands of bees visit the tree and helps in pollination.
Threat status	Endangered (EN)
Description	Tree upto 25 mt ht, Stems buttressed at the base, Bark exfoliates in brown large thin flakes, Leaves are shining green; narrow base and pointed apex, lance shaped, about 10 cm long, ventral surface light green, young leaves red coloured. Flowers white, small, fragrant, 1,2,or 3 in axillary cluster.
Flowering and fruiting	April to November
Uses	Flower buds used as stomachic, stamens and flowers are used for the treatment of blood dysentery, diarrhoea; seed oil applied on rheumatism, wounds and skin disease.
Trade information	It is one of the highly traded medicinal plants; consumption in domestic herbal market is around the range of 200- 500 MT.
Propagation and cultivation	Grows in wide range of soil with hot, humid and much precipitation; propagated with seeds.

*Aristolochia indica* L.



Common Name	Indian Birthwort, Ishwaramooli
Family	Aristolochiaceae
Habitat and Distribution	Grows in shaded areas in thick forests of India, Nepal, Bangladesh and Sri Lanka.
Ecology:	Seeds are winged and dispersed by wind. The population of this species is declining due to habitat fragmentation and indiscriminate collection.
Threat status	Endangered (EN)
Description	Plant is a climber with oblong leaves of various size. The perianth is globose at base and extends upwards as a column that ends in expanded coloured tongue. Fruit is a dehiscent capsule with 6 valves.
Flowering and fruiting	July to March
Uses	Leaves and tender shoots are used to treat snakebite, fever, bone fracture, intestinal pain, gall bladder pain, arthritis, rheumatism, weight loss and wounds
Trade information	Not traded from the area.
Propagation and cultivation	Propagate by seeds and roots.



*Oroxylum indicum* (L.) Benth. Ex Kurz



Common Name	Indian Trumpet flower, Totola
Family	Bignonaceaea
Habitat and Distribution	Indo-Malaysian region to China. Occurs in sub-montane to deciduous forests between 600 to 1200 m altitude.
Ecology:	Papery winged seeds are dispersed by wind. Flowers are pollinated by small bats and bear foul smell of over-ripe jackfruit, the bees are seen near the style.
Threat status	Least Concern (LC)
Description	Deciduous, medium sized tree up to 10 m ht. Stems with prominent leaf scars, Bark is rough, brown-grey. Leaf is quadarypinnate, 1mt long; Flowers are large, fleshy, creamy, violet coloured and foul smelling; Fruit is 1.5mt. long and soward shaped capsule.
Flowering and fruiting	Flowering from July to August, Fruiting in the month of December to March.
Uses	Locals use root bark to treat jaundice and seeds for pneumonia.
Trade information	Dried root barks of 8-10 kg per day is collected and sold at Rs 15-20 per kg. In India 1201 MT of this crude drug is used by the domestic herbal industry.
Propagation and cultivation	Through seeds collected before February-March.



*Alstonia scholaris* (L.)R. Br.



Scientific name	<i>Alstonia scholaris</i> (L.) R. Br.
Common name	Devil's Tree, Chatim
Family	Apocyanaceae
Habitat and Distribution	Grows in tropical, subtropical and moist deciduous forests. It is native of Indian sub-continent, China, South East Asia and Australia. It is the State tree of West Bengal.
Ecology:	The nocturnal fragrant anthesis of flowers attracts moths for pollination.
Threat status	Least Concern (LC)
Description	Medium sized evergreen tree reaching upto 27 m ht. Palmate leaves with are four or seven in a whorl, leafy leather with obtuse tips. Flowers are in a bunch of greenish white fragrant flowers; follicles are narrowly cylindrical. Bark is rough; greyish white, yellowish inside and excludes bitter latex.
Flowering and fruiting	Flowering is from March to July; Fruiting in August.
Uses	Bark infusion is used to treat fever, skin diseases, liver complaint, chronic diarrhoea and dysentery.
Trade information	Trade name is saptaparni. Parts used are Stem bark, leaves, latex and flowers.
Propagation and cultivation	Propagated by seeds.

*Rauvolfia serpentina* (L.) Benth. Ex. Kurz



Common Name	Sarpagndha
Family	Apocynaceae
Habitat and Distribution	Distributed in Indo-Malaysian region. In India, it is found in eastern and peninsular India and Andaman Islands, in moist deciduous to evergreen forests.
Ecology:	Flowers attract wide variety of insect pollinators. <i>Papilio demoleus</i> was reported as most efficient pollinator followed by <i>Amegilla zonata</i> . Population declined drastically due to indiscriminate collection from the wild by uprooting the plants.
Threat status	Endangered (EN)
Description	It is a small shrub, up to 1.5 m tall with milky latex. Leaves are two in opposite or 3 in whorls broadly inverted lance-shaped, about 15 cm long with shortly pointed apex. Flowers are red (sepals) and white (petals) borne on axillary, 5-7 flowers in the corymbose inflorescence; fruits are drupes, spherical purplish-black.
Flowering and fruiting	March to December
Uses	Roots used to treat <b>high blood pressure, rheumatism, epilepsy eczema and snake bite</b> ; leaves used in removal of opacities of the cornea; used to treat pneumonia.
Trade information	One of the highly traded medicinal plants having a total estimated consumption of around 280-290 MT per year in India.
Propagation and cultivation	Propagated through seeds, stems and root cuttings.

*Pterygota alata* (R.) R. Br.



Family	Sterculiaceae
Habitat and Distribution	Naturally distributed in India, South-east Asia and Myanmar; Grows on different soil varieties from clay loam to soils of red lateritic origin.
Ecology:	Local forest villagers occasionally eat the seeds. Tree squirrels and terrestrial rodents are usually seed predators and helps in seed dispersal.
Threat status	Not evaluated yet however the other species of the genus <i>Pterygota</i> are declining globally and kept under the Vulnerable (VU) groups; current study shows restricted population;
Description	Large trees with root buttresses; leaves clustered at the end of the branches irregular in shape and variously acuminate, base cordate; Flowers in panicles, calyx 5-6 lobed; corolla three-fourth the length of the calyx bearing 4-6 group of 4 anthers; females and hermaphrodite flowers; ovaries 5; follicles shortly beaked , woody; seeds numerous, compressed with spongy terminal wings.
Flowering and fruiting	February to November
Uses	Used as substitute of opium ; seeds are eaten occasionally like groundnuts; the bark juice of <i>Pterygota</i> species was used traditionally in the management of hemorrhoids, dropsy, swelling oedema, gout, leprosy and pain.
Trade information	Seeds and barks are collected locally and sold.
Propagation and cultivation	Easily propagated with seeds

*Asperagus racemosus* Willd.



Common Name	Satamuli/ Satmul
Family	Liliaceae
Habitat and Distribution	Distributed in the tropical regions of the old world. In India, it is found in the tropical and sub-tropical regions including Andaman Islands.
Ecology:	This species grows well in sandy loam fertile soil under shade.
Threat status	Endangered (EN)
Description	It is a scandent undershrub, a perennial climber growing on other standing shrub branches. Roots stock consists of several fleshy tubers around 10-50 cm long. Stems are cylindrical and green with spines. Leaves are small and reduced to scales. Flowers are white ca. 8 mm across and borne on dense, racemose inflorescence. Fruits are berries, globose with 3-6 seeds.
Flowering and fruiting	September to January
Uses	Roots are used in diarrhoea, piles, menorrhagia, internal haemorrhage, gout defects of vision, poisoning and as a health rejuvenators; tubers are good for lactating mother; leaves used to treat night blindness.
Trade information	One of the highly traded medicinal plants of India. Around 3000- 3200 MT are consumed by the domestic herbal industries.
Propagation and cultivation	Tubers and seeds.



*Gynocardia odorata* Roxb.



Common Name	Chaulmoogra
Family	Flacourtiaceae
Habitat and Distribution	Found in deciduous evergreen forest of Indian sub-continent and grows extensively in tropical forest of hilly region of North-East India.
Ecology:	This species grows well in deciduous evergreen forest in a community having an association of <i>Stereospermum colais</i> , <i>Gynocardia</i> species are dioecious. Pollination is by insects, by cross. Seeds dispersed by self, by birds or animals, dispersal by humans.
Threat status	Endangered (EN)
Description	An evergreen dioecious trees, ca. 10-30 m tall. Leaves simple, alternate; ca. 10-33 x 3.5-10.5 cm, oblong. Male flowers solitary or few in axillary, ca. 2.5-3.5 cm across, pale yellow, fragrant; calyx, 5-lobed at apex, stamens ca. 100; female flowers few on tubercles on stem; Berry globose, ca. 8-12 cm across; pericarp thick, hard, seeds numerous, variable, ovoid or ellipsoid, endosperm oily and fleshy.
Flowering and fruiting	March to May
Uses	The fruit juice is taken as antipyretic agent; the seeds are extracted and the oil is used as lotion in leprosy and other skin diseases.
Trade information	The fruits and seeds are collected and sold in the market. Also, the crude oil is sold as an ointment in the local market for treatment of skin disease.
Propagation and cultivation	Propagated with seeds.

*Aphanamixis polystachya* (Wall.) R.N. Parker



Common Name	Rakta rohida, Rohitak, Pithharaj, Royna
Family	Meliaceae
Habitat and Distribution	It grows in lowland and hill forests, usually on hillsides and ridges. It is an Indo-Malayan species.
Ecology:	The brightly coloured petals attract insects which play a vital role in the transference of pollen. Tree squirrels and terrestrial rodents are usually seed predators. It is a plant of primary and secondary rain forests at 1400 m altitude.
Threat status	Least Concern (LC) but less common in the MPCA.
Description	Large evergreen trees grow upto 15-20 m tall. Leaves imparipinnate; Leaflets 8-, opposite, basal pair the smallest having tiny transparent spots. White flowers arranged in 10-20 cm spikes. Fruit is a 3-valved globose capsule, seeds with red aril.
Flowering and fruiting	May-September
Uses	Stem bark is used to treat liver, ulcer, diabetes, jaundice, arthritis, leucorrhoea.
Trade information	Collected and sold in local markets.
Propagation and cultivation	Propagated by seeds. Seeds are germinated in well drained partly shaded soil.

## UTILITY OF THIS PICTORIAL GUIDE

Sevoke MPCA comes under the Mahananda Wildlife Sanctuary which is bestowed with enormous gifts of nature. This whole area falls in the foothills of Eastern Himalayan region that makes it an important biodiversity rich zone. This unique ecosystem harbours the most important and magnificent forest having rich gene pools of many threatened species. It has immense value with respect to various ecosystem services such as climate regulation, carbon sink, soil reclamation, water supply, nutrient cycling, pollination, recreation, aesthetic value and livelihood for many local communities.

This guide booklet will help one to know about the important plants, their global distribution, medicinal uses, issues, related to various threats to these plants and the dependence of local communities on the forest resources such as food, fuelwood, fodder, medicines, honey and many other non-timber forest products (NTFPs).

This book also provides a glimpse of the MPCA in a nutshell. It will allow quick identification of important medicinal plants through their photographs for the field staff from the Forest Department. The list of threatened and less commonly occurring species provides a blue print to the Forest Department for short listing species of conservation concern. The list of traditionally used medicinal plants can promote the sharing of traditional medicinal knowledge among the younger generation of residents neighbouring the MPCA, as well as for researchers, foresters, traders and others. The list of dominant tree species according to their Importance Value Index (IVI) gives a fair idea of the structure and composition of the community and tree species in the MPCA. Finally, this guide book can create awareness regarding the importance of MPCA and facilitate informed Biodiversity Conservation action programs of West Bengal.

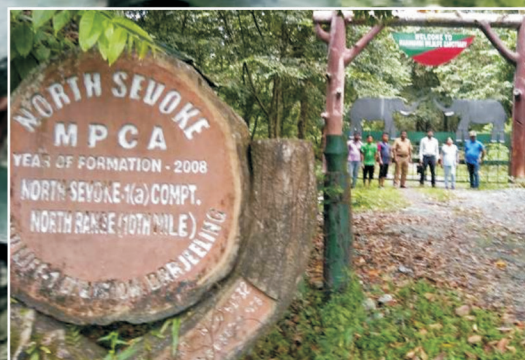
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