

COURSE CONTENT FOR FOREST GUARDS OF SPECIAL TIGER PROTECTION FORCE

SUBJECTS TO BE COVERED

Table of Contents

1. WILDLIFE CONSERVATION.....	2
2. WILDLIFE PROTECTION.....	5
3. FOREST AND WILDLIFE LAW.....	7
4. COMMUNITY FORESTRY AND ECO-DEVELOPMENT.....	8
5. SILVICULTURE.....	9
6. SURVEY AND ENGINEERING.....	11
7. FOREST UTILISATION.....	13
8. ACCOUNTS AND PROCEDURE.....	14

1. WILDLIFE CONSERVATION

1. Introduction, Importance of wildlife

- Aesthetic, recreational and cultural values
- Economic values (Financial value to state and individual).
- Scientific values

2. Management of Wildlife

- Protected Area Network in the country with reference to the state
- Alternative resource utilization strategies to reduce pressure on the resource.
- Distribution of Wildlife in India with particular reference to state.
- State animal, tree and bird
- Closure season
- Schedules of Wildlife (Protection) Act, 1972.

3. Introduction to the concept of Tiger Conservation Plan.

4. Field techniques in Wildlife

- Census techniques: definition, objects, methods, track & trails, Kill evidences, marking total Block counts.
- Techniques of scientific compatibility, field techniques in wildlife management, data collection and assessment techniques viz. vegetation sampling, density
- Census technique: use of Global Positioning System (GPS), Compass, Range Finder, establishing transect line, selecting, direction, alignment demarcation. Circular / rectangular plot. Estimating density of shrubs, grasses, herbs; Road transect
- Monitoring techniques for large herbivores and carnivores with emphasis on species of regional importance.
- Habitat assessment and monitoring
- Damages caused by wildlife
- Habits and habitats-migration, migratory birds, breeding seasons; habitats of important birds and animals.
- Evidences for prevalence of wildlife.
- Foot prints of animals with paws, pugmarks, animals with hooves, bird tracks, preparation of foot print traces and preparation of plaster casts.
- Feeding signs on kills, recognizing kills made by tiger.
- Wildlife remains.
- Dropping and pellets.
- Identifying (not upto species level) mosses, lichens, ferns

- Visitor information, tourism management
- Use of binocular, tiger tracer

- Important wild animals hunted

- Hunters/gatherers including ethnic groups.
- Methods of hunting, gathering, network, nodal stations, tools devices, their applications.
- Surveillance & intelligence
- Custody safety preservation & disposal of dues & evidence
- Operational maintenance of wireless sets, batteries, panels, registers & logs their of key, unique & special habitat
- Man conflict: ascertaining WL damage to property; seasonality of crop damage with seasonality of animal movement; susceptible crops, crop rotation
- Useful & harmful species of birds & insects
- Traditional crop damage control methods and physical barriers; destructive crop protection methods
- Cause & investigation of cattle kill, post kill monitoring.
- Why wild animal becomes a problem animal; handling, feeding, relocation and first aid of protection animals
- Bird and mammal calls
- Animal behavior; alarm and aggression
- Endemic & endangered species
- Using format for recording observation,
 - Habitat, niche, welfare, decimating, limiting factors.
 - Grass land-degradation and its indicators, exclosures, controlled burning
 - Erosion & its indicators
- Regeneration & its identification
- Monitoring physical condition of wild animals: Carnivores, ungulates, Elephants
 - Wetland fauna
 - Elements of eco-development
 - Vantage positions of machans, watchtowers, hides and Doss & Dons therein
 - Use of knots, nooses, pulley
 - Salt licks and wallows as tools for habitat improvement
 - Human injury and death, compensation thereof.
 - Identifying dead wild animal morphologically (age/sex); making measurements and recording observations

- species specific hunting strategies and skeletal remains (skull, jaws, hooves, claws)
- Characteristic, bird nests, raptors
- making and maintenance of PIPs
- Water as a habitat factor; mapping of seasonal & perennial water holes
- weed identification, mapping and control
- calls of birds & mammals
- zoo management
- safari park
- ecotourism

PRACTICALS: Animal sign survey, laying transects & quadrats, elementary quantification techniques

2. WILDLIFE PROTECTION

Biotic and abiotic factors:

1. Introduction

- Factors responsible for depletion of forests
- man, cattle, fire and other natural calamities.

2. Forest Fires:

- Causes, types, evil & beneficial effects.
- Preventive measures – fire lines, early control burning.
- Combative measures – watch towers, fire indicators, fire fighting
- Introduction to modern fire fighting equipments
- Reporting of fire damage.
- Fire report & fire damage assessment.
- Public support in prevention, detection & surveillance of fire ----
- Seasonality of fire, amount & kind of combustible material, hilly topography, winds; Fire detection
- Tools like rickers, fire beaters etc
- Safety in fire suppression e.g. carrying water, emergency transport, first aid, avoiding getting surrounded by fire, animals escaping from fire

3. Grazing, Lopping

- Effects of cattle grazing on forests.
- Preventive measures – regulation, rotational grazing, fencing in regeneration areas.
- Introduction to grazing policy of the state vis-à-vis practices prevalent.
- Thumb rules relating to carrying capacity of forests for cattle grazing
- Lopping damage – Safe rule for lopping of fodder trees.

4. Man:

- Illicit felling – causes and effects, introduction to control measures Indication of illegal activities e.g. stumps, poisoning of salt licks & waterholes, illegal hides, snares, trapping tools, campsites, foul smell,
- Checking barriers: importance and location; checking money receipts, permits and transit hammers
- patrolling register
- Encroachments, maintenance of boundaries of forests, laws dealing with encroachments.
- Shifting cultivation: definition, causes & effects, practices, viability economic/ecological.
- Physical drill, physical combat, use of fire arms

5. Duties and responsibilities

- Of Forest Guards in protection of forests-extension
- Roles of people, Village Forest (Protection) Committees.

PRACTICALS: Personal safety against offenders, wild animals, accidents, fire, flood, sabotage, first aid, transportation, safety of offenders in custody.

3. FOREST AND WILDLIFE LAW

1. Salient Features of

- (i) Wildlife (Protection) Act, 1972 : With special emphasis on Provisions for National Parks, Wild life Sanctuaries, Tiger Reserves, Conservation Reserves, Community Reserves, Chapter IV (Protected Areas), Chapter IVB (NTCA), Chapter IVC (WCCB), Chapter V (Trade in Wild Animals, Articles & Trophies) Chapter VI (Prevention and Detection of Offence), Chapter VIA (Forfeiture of property derived from Illegal hunting and trade) and sections 59 & 60 of WPA
- (ii) Indian Forest Act, 1927
- (iii) Forest (Conservation) Act, 1980.
- (iv) Indian Arms Act, 1959
- (v) Tree Felling Act of concerned state
- (vi) Prevention of Cruelty to Animals Act, 1960
- (vii) Preparing POR, seizure memo, panchnama, witness statement, search warrant, bail on bonds, seizure report to magistrate, complaint, charge sheet, habitual offender record, investigation report, expert report (forensic, chemical, ballistic, veterinary etc)
- (viii) Legal provisions relating to use of fire arms.
- (ix) Exposure of Indian Penal Code, Criminal Procedure Code and Indian Evidence Act with special reference to arrest, seizure, search & raids
- (x) Definitions: Forest, Cattle, Forest Produce, Forest Offences, Forest Officer.
- (xi) Study to specific provisions of State Forest Act relating to: -
- (xii) Legal classification of forests – RF/VF/PF.
- (xiii) Acts prohibited in different categories of forests.
- (xiv) Punishment for violation of prohibited act.
- (xv) Types of permits for transit of forest produce and authority to issue them, general rules for issue and checking of permits.
- (xvi) Types of hammers – property hammer, felling hammer, passing/seizure hammer/drift timber/private timber.
- (xvii) Rules relating to detection, enquiry and disposal of forest offences.
- (xviii) Drawing up of a seizure list filing of F.I.R. recording of statement, collection of evidence. arrest and release of offenders.

Practicals: Drawing up FIR/seizure list/offence report.

4. COMMUNITY FORESTRY AND ECO-DEVELOPMENT

1. Introduction-Definition and, scope,

2. Motivation and Extension

Awareness campaigns for anti-poaching activities, mitigating man-animal conflicts etc.

3. Participatory Forest Management

- Need for role of community in forest regeneration and protection.
- Interaction with local people for explaining programme and assessing their needs.
- Village level societies, Eco-development committee, and role of NGOs in participatory forest management. Mahila Mandal, Tree Growers Co-operative Societies, Self-help groups etc.
- Role of forest guards in the societies.
- Techniques for collection of data/information for preparation of micro-plan by involving people (PRA & RRA Techniques).

4. Watershed management – Basic Concept.

PRACTICAL EXERCISE

- Collection of data of village communities on different forms for preparation of Micro Planning.
- Role of Forest officials in Village Forest. Group exercise on Motivation and Communication skill. Evaluation of various extension strategies

5. SILVICULTURE

1. Role of Forests:

- Importance of forests – general and special
- Protective/Productive/Aesthetic functions
- Environmental Conservation

2. Growth of tree:

- Tree growth, various stages of tree: seedling, sapling, pole, tree.
- Parts of tree – stem, branches, crown.

3. Growth of Forests:

- Factors affecting growth climatic, topographic, edaphic, biotic.
- Nutrient cycle, humus & soil organic matter

4. Field Botany:

- Basic botany – plant morphology – leaf, stem, flower, inflorescence, fruit, seed.
- Local & English names of 50 important selected species along with their habitat, identification, characteristic.

5. Natural regeneration/management of natural forests

- Introduction to growth characteristic of natural forests stands structure.
- Regeneration as pre-requisite for removal of mature trees. Silvicultural systems - definition, types (high forest/coppice).
- Clear felling systems – coppice/uniform.
- Selection system.
- Method and importance of regeneration survey. Important marking rules for different systems.

6. Regeneration of Bamboo, canes, reeds and grass lands.

- Special characteristics of these types of forest crops.
- Classification and important cutting rules.
- Subsidiary silvicultural operations and improvement works, cleaning of clumps, half-moon trenches.

7. Maintenance of Regeneration area:

- Tending operations, thinning - types/methods, improvement felling.
- Survival percentage/success of regeneration
- Climber control – necessity in young/old regeneration area.

8. Rehabilitation of degraded forests:

- Rehabilitation techniques.
- Protection, cleaning/singling, nature and properties of rooted wastes.
- Plantation of important species

9. Regeneration from seed, and factors influencing it. Seed dispersal and germination, coppicing and pollarding with examples. A brief account of bad, good, fair and non coppicers. Factors influencing coppicing viz., age and size of the tree, cutting season, method of cutting, height of the stump etc.

10. Maintenance of Regeneration area:

- Secondary Silvicultural Operations in naturally regenerated and planted area.
- Tending operations, thinning – types/methods, improvements felling.
- Survival percentage/success of regeneration.
- Climber control – necessity in young/old regeneration area. .

Practicals: Identification of tree/soil-rock types
 Concepts to be developed only through practicals
 Assignments to be given for collection of herbarium specimen, field identification, features, phenology of 50 selected species.

6. SURVEY AND ENGINEERING

Part A: SURVEY:

1. Chain survey: -
Verification of boundary, pillars, with maps toposheets, general & prismatic compass.
2. Elementary principles of map reading.

Part B: MEASUREMENT:

1. Measurement of diameter and girth of the standing trees.
 - (a) Breast height measurement under different situations.
 - (b) Measurement with caliper and tape, advantages and disadvantages.
2. Measurement of height, Haga altimeter, shadow and stick method.
3. Simple calculation of basal area and volume of trees.
4. Definitions, Survey, branches of survey like plane table survey, geodetical survey, triangulation survey and traverse survey. Use of survey in forestry. Two great principles of survey. Scale and its use, a simple knowledge of angle, triangle, circle. Calculation of area of a triangle, square, circle and cylinder.
5. Chain Survey: Definition, scope, and applicability. Definition of common terms like survey station, survey line, base line, check line, tie line etc. A brief account of offsets and instruments used for laying of offsets. Obstacles in chaining and methods to overcome. Plotting of chain survey and area calculation. A brief account of local attraction and closing error.
6. Prismatic Compass Survey: Definition, scope and applicability. Closed and open traverse. Description of prismatic compass and method of using. Definition of common terms like bearing, meridian, dip, angle, declination, forward, bearing, backward bearing, whole circle bearing etc. Definition, detection and correction of local attraction. Closing error – definition and adjustments. Checking of forest boundaries and replacement of missing cairns. Laying out of sample plots and coupes on the ground and its area calculation.
7. Maps and Map Reading: Definition of a map and plan Definition of scale and representative fraction. Detection of one's position on a map-using a chain or prismatic compass. Types of forest maps, working plan maps, and regeneration plan maps, control maps, village maps, topo-sheets, etc.

Practicals:

Layout of sample plot, preservation plots, objectives, types of initial and periodic measurement, maintenance and demarcation of a forest coupe, boundary line of a forest, various types of measurement of tree, calculation of plot area/volume of timber-Log, sawn & stacked.

Part C: FOREST ENGINEERING:

I. Building materials –

- (a) Stone – Different kinds of stone, collection.
- (b) Bricks –characteristics of Ist Class bricks. No. of bricks required for 100 cft. of brick works
- (c) Brief idea about tile, lime cement, sand and metal chips.
- (d) Mortar – Lime, cement and mud
- (e) Concrete – Lime, cement and R.C.C.
- (f) Plastering and Painting
cement plaster, mud plaster, preparation of surface for plastering and painting, curing and its objects.

II. Building Construction:

- 1. (a) Selection of site.
(b) Foundation, plinth, super structure, floor, masonry walls (Brick & Stones).
- 2. Doors and Windows: Pannel, Batton, Glazed (Introduction only).
- 3. Roof: Different types of roof- Asbestos, Tile, Thatch, R.C.C.

III. Miscellaneous:

1. Wells:

- (a) Selection of site – Dug well/Tube well.
- (b) Elementary idea about construction, repair and cleaning, purification of water.

- 2. **Problems:** Simple volumetric and area calculation of various works such as earthwork, whitewashing and ascertaining the quantities of building materials used in brick and stone masonry.

7. FOREST UTILISATION

PART-A: WOOD PRODUCTS

1. Use of timbers of common species, introduction to wood seasoning and wood preservation.

PART – B: NON-TIMBER FOREST PRODUCTS (N.T.F.P.)

Relevant to state, in brief: -

- (a) Name and use of important items of N.T.F.P. such as Sabai grass, Lemon grass, Rosa grass, Thatch grass, Barks, Honey, Wax, Resin, Gums, Lac, Tussar cocoons, katha, Mohua, Dyes.
- (b) Use of oil seed (Sal, Neem, Eucalyptus, Rosa, Khus etc.).
- (c) Working of Tendu Leaves (for specific states only).
- (d) Important Medicinal plants – Trees, Herbs, Shrubs-techniques of ex-situ conservation
- (e) Forest foods – tuber, leaves, fruits, seeds, etc.

8. ACCOUNTS AND PROCEDURE

1. Different types of vouchers for payment, muster rolls, measurement books, their preparation and maintenance, register of sanctioned works, completion reports, lost or missing receipts/vouchers.
2. Procedure of handing over – taking over charges, charge reports.
3. Leave Rules – Earned Leave, Casual Leave, Leave without pay, half pay leave, Commuted Leave.
4. Traveling Allowance Rules and preparation of T.A. bills and T.T.A. bills
5. Maintenance of consumable store register, register of stores, tools/plants, writing off of unserviceable stores.
6. Basic elements of labour laws.
7. Organizational structure of the department – practical.