

# **Course- FRW- 602 Wildlife Management & Research**

**Course Instructor; Dr. Sangam Khalil**  
**Dept. Forestry Range & Wildlife Management**

## **7<sup>th</sup> Lecture**

### POTENTIAL VALUES OF PROTECTED AREAS

#### A. CONSUMPTIVE USES

##### Goods

- ✚ Access to natural resources, improved management, sustainable harvesting
- ✚ Generate revenue through marketing of sustainable harvesting goods
- ✚ Reservoir of genetic diversity for new crop varieties and livestock breeds improvement
- ✚ Representative sample of indigenous plants, animals, micro-organisms which are useful
- ✚ Conservation of wetlands for fish nursery
- ✚ Marine protected areas for maintaining fish stock for sustainable harvesting

##### Services

- ✚ Conservation of soil and watersheds
- ✚ Clean water
- ✚ Biotic processes
- ✚ Carbon sequestration
- ✚ Climate regulation

- ✚ Maintenance of buffer to natural disasters

## POTENTIAL VALUES OF PROTECTED AREAS (Cont'd)

### B. NON-CONSUMPTIVE USES

- ✚ Recreation
- ✚ Education
- ✚ Tourism
- ✚ Research

### OTHERS

- ✚ Preservation of cultural heritage, sacred sites, cultural/traditional practices, traditional knowledge
- ✚ Conservation of genetic material in natural habitats
- ✚ Preservation of scenic beauty and rare species
- ✚ Promotion of peace and international cooperation

## SIGNIFICANCE OF PROTECTED AREAS

### The World Conservation Strategy (WCS)

#### Major Goals:

1. Maintain essential ecological processes and life support systems on which human depend
2. Preserve genetic diversity on which depend the breeding programmes of crops and domesticated animals
3. Ensure that man's utilization of species and ecosystems is sustainable

#### PAs are necessary to:

- ✓ Ensure that samples of important natural regions are retained in perpetuity
- ✓ Biological and physical environment is maintained

- ✓ Wild genetic materials are conserved

## **CONTRIBUTION OF PROTECTED AREAS**

### **PAs when designed and managed properly;**

- Provide sustainable benefits to the society
- Play major role in social and economic development of natural environments
- Contribute to economic well-being and quality of life of communities
- Ensure conservation of world's natural resources to meet the material and cultural needs of mankind now and in future.

### **PAs also contribute to conservation and sustainable development by;**

- Maintaining the environmental stability of surrounding region
- Reducing the intensity of floods and drought
- Protecting soil erosion and limiting the extremes of climate
- Maintaining the productive capacity of ecosystems, so ensuring the continuous availability of water, plants and animal products
- Provide opportunities for research and monitoring of wild species and ecosystems
- Conservation education for public and policy makers
- Opportunity for rural development and rational use of marginal lands
- Recreation and tourism

## **CATEGORIES OF PROTECTED AREAS IN PAKISTAN**

### **National Park**

A national park is an area set aside by the Government for the protection and preservation of outstanding scenery, flora and fauna in natural state. The national park shall be accessible to public for recreation, education and research, subject to such restrictions as the Government may impose. To facilitate public use and recreation, access roads, construction of rest houses, hostels and other buildings are permitted. Forests in national parks may also be so managed and forest products obtained provided that these activities do not damage natural ecosystem.

The following action shall be prohibited in national park;

- (i) Hunting, shooting, trapping, killing or capturing of any wild animals in a 'national park' or within one and a half mile radius of its boundary.

- (ii) Firing any firearm or doing any other act, which may disturb any animal or bird, or doing any act, which interferes with the breeding places.
- (iii) Felling, tapping, burning or in any way damaging or destroying, taking, collecting or removing any plant or tree there from;
- (iv) Clearing or breaking up any land for cultivation, mining or for any other purpose; and.
- (v) Polluting water flowing in and through the 'National Park'.

Provided that the Government may for scientific purpose or betterment of the national park or any other purpose, authorize the doing of any of the afore-mentioned prohibited acts.

### Wildlife Sanctuary

A wildlife sanctuary is an area owned and notified by the Government as an undisturbed breeding ground for the protection of wildlife. Public access or residence in the sanctuary is prohibited and so is exploitation of forest except for reducing fire-hazards, epidemics, insect attacks or other natural calamities.

No person shall:

- (i) enter or reside;
- (ii) cultivate any land;
- (iii) damage or destroy any vegetation;
- (iv) hunt, kill or capture any wild animal or fire any gun or other firearm within on mile of the boundaries
- (v) introduce any exotic species or animal or plant;
- (vi) introduce any domestic animal or allow it to stray;
- (vii) cause any fire, or
- (viii) pollute water in a wildlife sanctuary

Provided that Government may for specific purposes as are deemed expedient, authorize the doing of the afore-mentioned acts (other than those mentioned in clause (iv)).

### Game Reserve

A game reserve is an area owned and notified by the Government where hunting and shooting of wild animals is not allowed, except under a special permit. This permit may specify the maximum number of animals or birds that may be killed or captured, and the area and duration for which such permits are valid. Game Reserves provide no protection to habitat but only regulate hunting.

### Private Game Reserve

The Government may declare an area as private game reserve if it is satisfied that the owner has dedicated this area with the purpose similar to a game reserve and if owner requests to do so. Hunting and shooting of wild animals by any person other than the owner of the area is not allowed in the reserve except with the permission of the owner.

The owner shall exercise the same powers in the game reserves as exercised by an officer under the Wildlife Act. Government can de-notify any game reserve through gazette notification if it is required to do so.

### Community Controlled Hunting Areas

The controlled hunting areas are conservation areas managed jointly by the relevant Government department and concerned communities for the conservation of flora and fauna. These are notified by the relevant government departments in provinces/territories. Trophy/game hunting is regularized in these areas by the communities through the hunting permits by protection of wildlife. The proceeds of hunts go to the joint account of the community organizations and spent on communal development activities. A small portion of hunting fee also goes to government revenue.

### *SUMMARY OF PROTECTED AREAS IN PAKISTAN*

<b>Province/ Territory</b>	<b>National Park</b>	<b>Wildlife Sanctuary</b>	<b>Game Reserve</b>	<b>CCHA/ CMA</b>	<b>Total</b>
Azad Jammu & Kashmir	7	1	12	0	<b>20</b>
Balochistan	2	15	8	2	<b>27</b>
Punjab	4	36	20	3	<b>63</b>
Khyber Pakhtunkhwa	6	8	38	52	<b>104</b>
Sindh	1	35	14	0	<b>50</b>
Federal Territory	1	1	1	0	<b>3</b>
Gilgit Baltistan	5	3	9	19	<b>36</b>
<b>Total</b>	<b>26</b>	<b>99</b>	<b>102</b>	<b>76</b>	<b>303</b>

**CCHA= Community Controlled Hunting Area**

**CMA = Community Managed Area**

### **RAMSAR SITES IN PAKISTAN**

<b>#</b>	<b>NAME</b>	<b>PROVINCE</b>	<b>AREA (ha)</b>
1	Astola Island (WS)	Balochistan	5,000
2	Jiwani Wetland Complex	Balochistan	4,000
3	Miani Hor	Balochistan	55,000

4	Ormara Turtle Beaches	Balochistan	2,400
5	Hub Dam (WS)	Sindh-Balochistan	27,000
6	Deh Akro-ii (WS)	Sindh	20,500
7	Drigh Lake (WS)	Sindh	164
8	Haleji Lake (WS)	Sindh	1,704
9	Indus Delta	Sindh	472,000
10	Indus Dolphin Reserve	Sindh	125,000
11	Jubbo Lagoon	Sindh	706
12	Kinjhar (Kalri) Lake (WS)	Sindh	13,468
13	Nurri Lagoon	Sindh	2,500
14	Run of Kutch (WS)	Sindh	566,375
15	Tanda Dam (WS)	KPK	405
16	Thanedar Wala (GR)	KPK	4,047
17	Chashma Barrage (WS)	Punjab	34,099
18	Taunsa Barrage (WS)	Punjab	6,576
19	Uchhali Complex (Khabbaki, Uchhali & Jahlar Lakes) (WS)	Punjab	1,243

## Major Issues with the current management of PAs

### 1 Policy/Legislation

*Lack of Policy:* Absence of comprehensive Government policy for viable Protected Areas network and its management in the country.

*Dual ownership:* Dual/multiple ownership of resources in PAs creating management conflicts between different agencies particularly the Forest and Wildlife Departments in majority of the PAs. Priority of the Forest Department is timber management and not the conservation of biodiversity, which is prime objective of creating PAs.

*No demarcation of boundaries:* Clear demarcation of PA boundaries does not exists in the country. Conflicts arise due to non-availability of clear boundary demarcation, such as in the matter of trophy hunting in the buffer zone/community-controlled hunting area, resource use by local people and other government departments.

*Undecided rights of local communities:* Rights and concessions of the communities residing inside or around the PAs are still undecided in majority of the cases. Park management and locals are confused and in conflict over the use of resources in PAs.

*Inter-Agency Cooperation:* Integrated approach for management and conservation of natural resources in the PAs is lacking. Cooperation between the relevant line departments and agencies is at its minimum.

*Community involvement:* Wildlife Protection Acts/Ordinances are silent about community participation/involvement in the management process of PAs, providing no legal coverage and rules for this important aspect.

## **2 Staff/Manpower**

*Insufficient Staff:* Presently, there is no separate staff deputed at most of the PAs and where it has been in a few cases, it is insufficient to meet the requirements. Moreover, technical manpower is acutely short to deal with different disciplines including community matters, environmental education, tourism development, biodiversity research, etc

*Lack of technical expertise:* Generally, there is scarcity of technical knowledge of PA managers and most are unable to give technical input to the PAs management. Only manager can not do the job because technical input is required to deal with multiple issues such as wildlife management, habitat management, conserve natural resources, socio-economic issues of communities, promote eco-tourism in the park, etc.

*Technical Education:* No institution in the country is awarding separate degree in Wildlife management or Conservation Biology. Courses taught in forestry and wildlife to the forest graduates at Pakistan Forest Institute (PFI) are very out-dated. Graduates of Forestry, Biology or Zoology do not have professional competency required for PA management.

*Provincial Secretariats:* Most of the concerned decision-makers in the secretariats are non-technical having little knowledge about conservation of natural resources and biodiversity. Even the provincial Secretaries are not technical persons.

*Job Security of Park Employees:* Most of the PA employees hired in the projects are on contract basis for a few years. Due to lack of job security, they do not work hard with full attention.

## **3 Research Studies and Baseline Data**

*Shortage of data:* Systematic and comprehensive studies to document the floral and faunal biodiversity have not been conducted in majority of PAs. Only scattered data exist from individual and occasional observations and from the local people, which do not provide base for the management planning of PAs.

*Survey of threatened Species:* Population census of threatened wildlife species in most of the PAs have never been carried out. Basic reason for this is lack of technical manpower and adequate resources.

*Lack of social data:* There is serious lack of data on socio-economic aspects of the communities living in and around the PAs. Hence, problems and prospects of their involvement in the management process have hardly been understood.

*Lack of Management Plans:* Management plans exist for only a few national parks. All other PAs have no management plans prepared yet. Hence, no specific guidelines are being followed by the respective authorities for their management. Management plans of some NPs are very old and do not address the recent issues.

#### **4 Financial constraints**

*Inadequate budget:* Annual separate budget is not provided to majority of the PAs. Even, most of the national parks are not given separate budget and where given, the budget is very low. Only establishment expenses can be met and hardly any funds are available for park operations.

*Inadequate facilities:* Financial resources for protection facilities including vehicles, communication system, establishment of watch towers, developing water points for wildlife and providing supplemental feed to the animals are very low.

*Park Administration:* Majority of the PA staff is very low paid which is disincentive to attract people with suitable qualification and experience. Office and residential accommodation for PA staff, wherever exist, are in poor condition. Capacity building opportunities such as trainings, exposure visits to other national parks in the country are also very limited.

*Vehicles and equipment:* In majority of the NPs, the vehicles and equipment are very old and need replacement. Current budget allocation is insufficient to get these replacements.

#### **5 Social Aspects**

*Resource use by locals:* Majority of the local population living inside and around the PAs depend on natural resources for their sustenance including livestock grazing, fuel wood collection, forage and fodder, medicinal plants, etc. These uses are not allowed in the NPs but this prohibition is hard to implement due to population pressure and political influence.

*Illegal hunting:* Hunting and poaching is not allowed in the PAs but it continues in majority of the cases by influential people.

*Depredation by Predators:* Currently, depredation by carnivores especially leopards on local livestock is a major problem in many areas. The local communities have already killed a few leopards as retaliation to this loss.

*Encroachment:* Many PAs are facing land encroachment problems by the local people mainly due to increase in local human population and increasing prices of property. Encroachment leads to habitat fragmentation and disturbance, creating problems for wildlife populations. In certain cases large chunks of PAs are taken away by other government agencies thus affecting the ecosystem.



*Visitors problems:* With the improvement of facilities in some of the national parks, number of visitors is increasing which adversely affect the natural resources if not properly managed. Garbage deposited by the visitors is also a major problem, especially the plastic water bottles which sometimes catch fire which could be dangerous to natural flora and fauna.

## **6 Law enforcement**

*Inadequate law enforcement staff:* Law enforcement staff in the provinces is very few and is not equipped with legal power, vehicles, communication system, weapons and other necessary facilities. As a result, law enforcement in PAs is very weak leading to depletion and disturbance of natural resources in the PAs.

*Illegal hunting and poaching:* Illegal hunting and poaching occur in most of the PAs by the local as well as outsider visitors. In majority of the cases, poachers are influential people equipped with powerful vehicles and modern weapons, sometimes causing even life threat to the PA staff.

*Violation of wildlife Act:* Agencies working inside the PAs are bound to abide by the rules and regulations to maintain its sanctity in accordance with international agreements. In some cases, sensitive agencies have invaded the PAs getting control over their resources and concerned wildlife/forest departments are unable to stop them and in certain cases these departments are not allowed even to visit these areas.

*Illegal allotment of land:* Some illegal allotments have been made by the Revenue departments inside some PAs. This problem is amounting day by day primarily due to the people living close to the PAs and higher property prices. This problem is severe in the Margalla Hills NP, Lal Sohanra NP and many other areas.

## **Recommendations for PAs Management**

### **Policy/legislation**

**Independent Wildlife Departments:** In Balochistan, AJK and Northern Areas, there is no independent Wildlife Department to manage wildlife and PAs. Independent wildlife departments should be established where needed.

**Ownership of Wildlife Department:** As PAs have been declared under Wildlife Protection Acts/Ordinances, respective Wildlife Departments should be given full ownership of the resources in the PAs, where applicable, including forest resources which presently are with the Forest Departments. Wildlife Department should have full authority to manage those resources as per objectives of the respective PA.

**Protected Areas Management Board:** In line with the Forestry Board, there should be a Protected Areas Management Board under the Ministry of Environment comprising members from provincial Secretaries Environment and community representatives.

**Special Judges to hear the Cases:** Cases registered against illegal activities in the park are heard in the regular courts which do not pay much attention to these cases. As a result these cases are pending for many years which encourage the poachers and others. It is suggested that special judges may be deputed in the courts to hear cases against illegal use of PAs resources for their early decision.

**Clarify customary rights:** Rights of local communities in the PAs must be decided on priority basis in consultation with the concerned communities and other stakeholders to avoid ambiguities and conflicts. Wildlife Departments and local communities must be clear about their rights in the respective PAs. It would help to stop misunderstandings and end disputes with communities and to check any further loss/degradation of the park resources.

**Revision of the Wildlife Laws:** Present wildlife laws need to be revised and updated in respect of provisions for community participation and empowerment, collaborative management of PAs, wildlife habitat protection, increase in the fines, etc.

**Buffer Zone for PAs:** There should be provision in the law and efforts should be made for the establishment and management of buffer zone for each PA, especially the national parks.

**Check Negative Political Influence:** Most of the PAs are under heavy negative political influence for hunting and collection of other materials, adversely affecting the resources. This must be encountered at the higher management level for saving the PA resources. It sometimes poses threat to the park employees through fake cases against them and threats to their lives.

## **Institutional arrangements/Institutional Arrangement**

### ***National Park Management System***

Regarding the management of National Parks in the country, provincial/territorial wildlife management authorities have mixed opinion. One point of the view is that:

There should be a Central National Parks Management Authority to manage the NPs in the country such as the National Park Service in USA or South Africa National Parks (SANParks) in South Africa. This authority would have the required technical manpower and resources for the management of NPs in the country. The authority must have adequate manpower deputed to each NP with necessary budget, equipment/mobility/communication, etc to implement management plans and handle other park operations. Nomenclature of NPs management staff may also be made uniform all over the country.

The other point of view, rather a strong one, was that:

It might not be appropriate and feasible in present circumstances to establish a separate federal agency for the management of National Parks in the country in the presence of

NCCW. Also, complications may occur by adding another agency in PAs management in the provinces/territories because two departments i.e. Forest and Wildlife are already involved in it. Moreover, the provinces may consider it interference in their rights.

It was suggested that it would be more effective to strengthen the capacity of wildlife management authorities in provinces/territories and enhance their skills regarding PAs management including NPs. Provinces should be responsible for the management of their respective PAs. Each provincial/territorial wildlife management authority should have a separate National Park/PAs Management Unit for the management of national parks and other PAs under its jurisdiction. This unit must be made fully equipped with sufficient resources (funds, vehicles, equipment, etc) and technical manpower to take care of all aspects of the national parks/PAs including management, scientific research, education/awareness, cultural resources, eco-tourism, matters relating to community, etc. The unit should prioritize the programmes specific to each PA and work accordingly and as the needs emerge.

Federal government should assist the units technically and financially for effective NP management. These units in all provinces be linked with a central committee (PA Management Board) under the NCCW/ Ministry of Environment headed by IG (F). This committee should coordinate and facilitate the units and monitor their progress. Committee may be represented by provincial unit heads, conservators Wildlife of the provinces, AJK and NAs, NCCW, ZSD, 2-3 NGOs, etc. One DIG (F) should exclusively take care of the matters relating to this committee.