

APPENDIX N

WILD GOATS MANAGEMENT PLAN STUDY OUTLINE

Wild Goats Management Plan Study Outline

I. Background

Coruh Valley Wildlife Protection Area was defined in accordance with the Turkish Regulation on Wildlife Protection and Development Areas and covers an area of 23,200 ha. Wild goat is the main species that is aimed to be protected by giving a protection status to this area. In such wildlife protection areas hunting is prohibited, with heavy punishment, year-round for all species. Artvin Directorate of Nature Conservation and National Parks is responsible for managing, monitoring and preservation of the wildlife in the Artvin Province and in this Protection Area. Yusufeli Dam and Hydroelectric Power Plant Project (Yusufeli Project) is one of the 5 projects of the Ministry of Energy General Directorate of State Hydraulic Works (DSI) on Middle and Lower Coruh River, which will be located on the Middle Coruh. Yusufeli Project area is partly within the Coruh Valley Wildlife Protection Area inundating about 1,300 ha of this area as shown in Figure N1.

II. Objectives

The objective of this outline is to develop the basis of the study to prepare a management plan for wild goats in Coruh Valley Wildlife Protection Area and vicinity in line with the needs of the area and the needs of the responsible agency to be more effective. This study will also serve for planning and implementation of further mitigation measures, if necessary, for the adverse impacts that might be caused by the Yusufeli Project and other hydro projects on Coruh River. With this overall aim, the site and species specific information will be gathered for the development of most suitable management strategies. Expected outcomes are the improvement of the ecosystems particularly focusing on the wild goat ecosystem, which is the main species under preservation in this area, minimizing and compensating the adverse effects of the hydropower development on Coruh River, particularly Yusufeli Project, and assisting local ecotourism and rural development influenced by the existing protection area.

III. Definition of the Study Area

The study area mainly shall cover the present Coruh Wildlife Protection Area and the impact area of Yusufeli Project outside this Protection Area. A broader area can be included in the scope of the studies in the course of the surveys, in case it is determined that the life cycle and habitat use of wild goats cover an area larger than the predefined study area.

The impact area of Yusufeli Project includes the reservoir area (33 km² at 710 m elevation ASL) on main Coruh River, and on its tributaries, Barhal, Oltu, and Tortum. The Yusufeli Reservoir will cause inundation of 1,300 ha of the Protection Area and approximately 160 ha of land will be lost due to relocation roads (Figure N2).

Therefore the study area will cover wild goat habitats within the Coruh Wildlife Protection Area and the vicinity, giving special attention to the impact area of the Yusufeli Project, including the inundation zone, relocation roads, and project facilities such as switchyard, campsite, borrow sites, etc.

IV. General Approach and Activities

The tasks to be performed for the study shall include:

- Obtain maps and satellite images: The topographical maps of the study area (with 1/25,000 scale) and satellite images, where available, shall be provided to the study team by DSI. The study team will process these maps and images as necessary.
- Collect and file further background data and information: Background information and data of concern include:
 - present data with regard to the study area relevant to the scope of this study,
 - detailed information regarding the ecosystem of the area,
 - any previous study and records on the habitat use and behavior of the wild goats,
 - demographic and behavioral information on wild goats and information on relevant habitat, landuse, ecosystem conditions of the study area.

Some of the above mentioned information is already available and any other shall be collected from various sources by the study team. This task shall also cover literature survey, which shall not be limited to the field study area, but shall cover the area necessary to put the field study results into spatial context. Relevant local and national institutions and non-governmental organizations might contribute to this study.

- Preparation of maps for the field studies: Before conducting the field studies maps of the study area shall be produced to be used during these studies, and known movement of the herds should be indicated on these maps.
- Field surveys: Field surveys will be conducted for the determination of the wild goat population and behavior, and potential impacts at different spatio-temporal scales for the management of the wild goat ecosystem. The detailed methodology for different steps of surveys shall be case-specific. Relevant methodology (survey points, equipment, type of survey, personnel, etc.) shall be determined in agreement with the co-decision of the responsible parties (General Directorate and Artvin Directorate of Nature Conservation and National Parks) and experts participating the management plan study. Habitat fragmentation at present due to the rivers and in the future due to the reservoir will be given attention during the wild goats management plan study. Accordingly, during the surveys the study team will also focus on the sustainability of the wild goats in the fragmented habitats. Moreover, based on the preliminary results of the studies, the options and feasibility of the habitat defragmentation measures will be explored during these studies

- Preparation of maps as an outcome of field studies: Maps showing the habitats available for the use of the wild goats and their characteristics shall be prepared in order to determine the change in the habitat use of wild goats in time. Additionally, resources available for wild goats should be indicated on these maps in a way to allow keeping track of the change in the resources on which the wild goat population is sustained. Similarly, movement of the herds should be indicated on these maps, which will help to see any changes in the direction and area that they move for drinking water, feeding and for other purposes.
- Development of the Management Plan: A management plan shall be developed for effective protection of the wild goats and accomplishment of the objectives of the study. This plan shall include ecosystem management methodologies, as well as monitoring means, and the responsibilities of relevant stakeholders.
- Reporting: The following results shall be reported in the context of the study to develop a wild goat management plan:
 - Reporting of site conditions with relevant maps.
 - Reporting of the result of different steps of surveys supported with relevant maps and with expert conclusions and recommendations.
 - Reporting of management strategies considering an adaptive management approach and means of monitoring.
 - Reporting of actions with specified schedule and resource allocation.

V. Management Plan Frame

The management plan to be established shall be based on periodic and continuous monitoring for the determination of the:

- Site Conditions.
- Short-term Acute Impacts of Hydro Development of Coruh River.
- Medium-term Chronic Impacts of Hydro Development of Coruh River.
- Long-term Demographic Impacts of Hydro Development of Coruh River.

An adaptive management approach will be followed for establishing and implementing the management plan, which is an approach that is widely preferred for wildlife management. Adaptive management is a systematic process whereby management practices are periodically updated based on the outcomes of management prescriptions. In addition, adaptive management is a collaborative process involving all relevant stakeholders (Nyberg, 1998).

The elements of the management plan and the flow of relevant actions are shown in Figure N3 below.

The wild goat management plan studies will provide;

- the present conditions in the study area,
- main methodologies of monitoring, and
- management strategies.

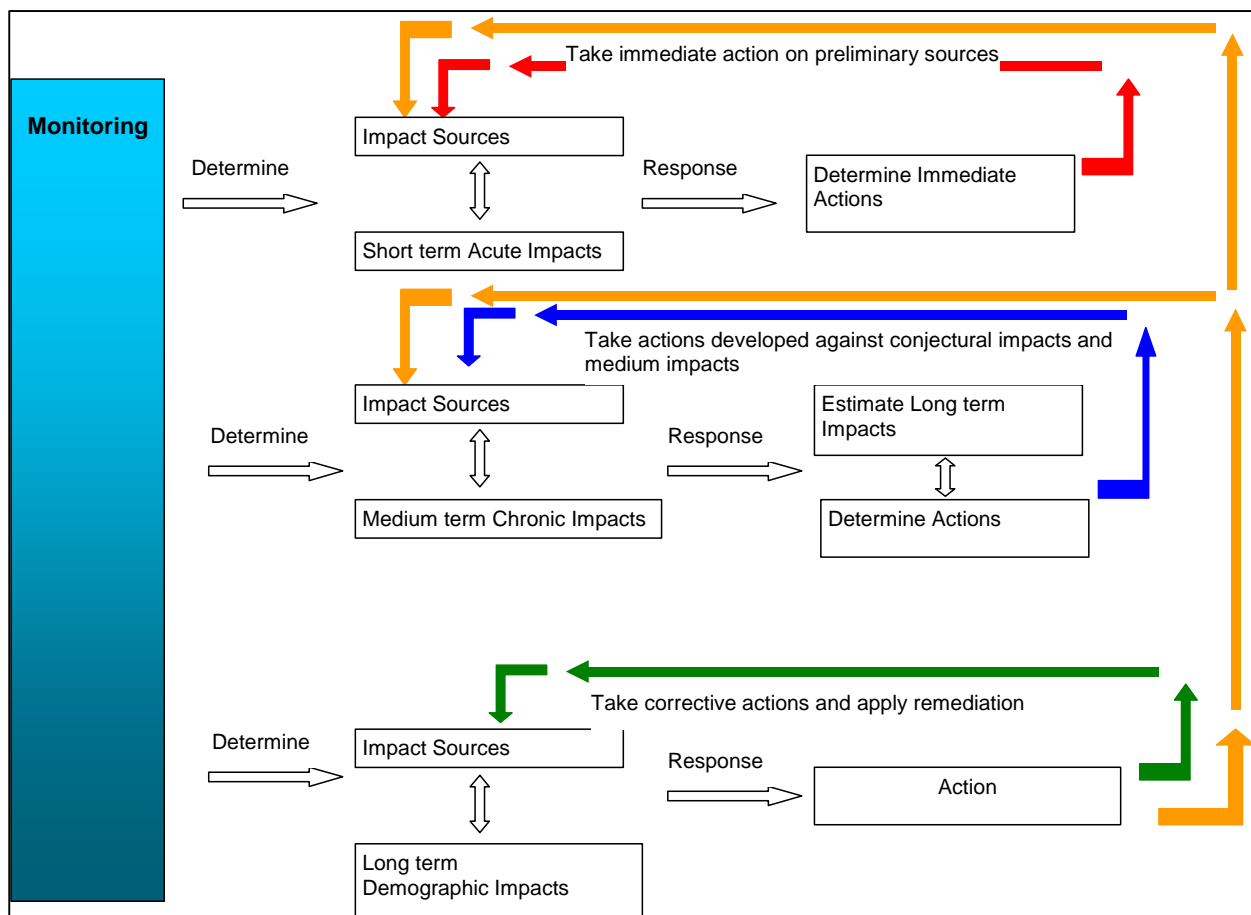


Figure N3. Elements of the Coruh Valley Wildlife Protection Area Management Plan

V.1. Wild Goats Management Plan Outline

The management plan to be developed for the wild goats will cover the background information, management planning and roles and responsibilities of relevant agencies. The proposed tentative outline of the Wild Goats Management Plan is provided in Box 1.

Box 1. Wild Goat Management Plan Outline**1. BACKGROUND**

- 1.1. Legal and administrative status of Coruh Valley Wildlife Protection Area.**
- 1.2. Present status of wildlife/wild goats in Coruh Valley Wildlife Protection Area**
 - 1.2.1. Habitat requirements**
 - 1.2.2. Movements and behaviour**
 - 1.2.3. Reproductive success and survival**
 - 1.2.4. Limiting factors**

2. MANAGEMENT PLANNING

- 2.1. Existing management strategies for the protection of wild goats**
- 2.2. Management goals and objectives**
- 2.3. Data collection and monitoring**
 - 2.3.1. Methodology**

Information to be collected and parameters to be monitored shall be determined together with the relevant methodologies to be used. Factors such as relative elevation, seasonal changes, reproduction seasons, etc. should be taken into consideration both during monitoring and evaluation of results as well as development of management actions.

2.3.2. Expected results

Population size, population composition (counts should be stratified into adults, yearlings, and young-of-year estimates and analyses of different ratios between similar areas), reproductive status, mortality, and habitat requirements are among the parameters to be determined through data collection and monitoring.

With regard to monitoring of the impacts; short term (behavioral disruption, injuries, diseases, animal mortality, change in survival and reproduction success, increased vigilance, fleeing, and group dissolution, habitat destruction and other impacts on habitat quality and use), medium term (change in behaviors and movement, survival and reproduction success, temporary or permanent range abandonment, impact on habitat quality and use, habitat availability, habitat shifts) and long term (demographic changes) impacts and consequences shall be considered. Also, impact sources (trend in these impact sources -increasing/decreasing, temporary/permanent- etc.) need to be followed.

2.4. Management strategies and elements

- 2.4.1. Managing wild goat populations**
- 2.4.2. Managing wild goat habitats**
- 2.4.3. Managing impacts of hydropower development on wild goats**

Short-term Impacts

These are impacts that are immediate and obvious, but of short duration. Immediate actions and related resources shall be determined to mitigate these impacts, and implementation plan/schedule shall be prepared.

Medium-term Impacts

These are impacts that are slow to develop and dissipate. Actions and related resources shall be determined for managing these impacts, and implementation plan/schedule shall be prepared.

Long-term Impacts

These are impacts that cause changes in the demography of wild goats in the long term. Corrective actions, any remediation requirements and related resources shall be determined and an implementation plan/schedule shall be prepared. Any gaps or inefficiencies in medium and short-term planning and management strategies shall be determined and these management strategies will be improved/modified accordingly.

3. ROLES AND RESPONSIBILITIES**3.1. Responsible institutions and consultation with related parties**

- Responsible institutions for management and monitoring.
- Responsible institutions for funding of actions.
- Responsible institution for taking action.
- Related institutions, NGOs and public, and consultation mechanisms with these parties.
- Inspecting institutions and inspection and control mechanisms.

3.2. Requirements for institutional strengthening and resource allocation

- Developing/improving human resources by providing relevant training.
- Improving necessary infrastructure and equipment.
- Developing/improving communication means in the responsible institution and with the related parties.
- Medium and long term funding opportunities.

3.3. Requirements for reporting and posting of determined actions

- Reporting of monitoring results and relevant recommendations.
- Determination of actions and allocation of resources (man power, funding, equipment, etc.) to implement those actions.
- Reporting of the results of the actions and recommendations for improvement.
- Publishing of periodic reports to provide information to public and all related parties.

V.2. Legal Framework

“By its Decree dated September 7, 2005 and numbered 9453, the Board of Ministers made a special regulation to determine the wildlife development areas, which concerns also the Coruh Valley. Yusufeli Project area is partly within the Coruh Valley Wildlife Protection Area. The Yusufeli Dam site is at a central location of the Protection area. The area was defined as 8,100 ha in 1971 by the Turkish General

Directorate of National Parks, Game and Wildlife Preservation (after the merger of the previously separate Ministry of Environment and Ministry of Forestry in 2003 this directorate is named as General Directorate of Nature Conservation and National Parks). This area was expanded to 21,800 ha in 2002 based on Article 18 of Inland Hunting Law. In 2005 the borders of this enlarged area was more specifically identified and digitally mapped, together with other wildlife protection areas in Turkey, and all these areas were included in the decision of Board of Ministers of September 2005 identifying these areas as wildlife protection and development areas. This digitally mapped area for Coruh Valley Wildlife Protection and Development Area, which was referred to in the decision of the Board of Ministers covers a total area of about 23,200 ha.

Decree of the Board of Ministers refers to the Article 4 of the Inland Hunting Law (dated July 1,2003 and numbered 4915), which states; "Wild life animal species that are determined by the Ministry to be protected will be protected by the Central Hunting Commission; while the wild animals, excluding the game animals and the other species shall be protected by the Ministry upon approvals of the relevant institutions. Wild animals under protection shall not be hunted. Wild animals shall not be disturbed during breeding, molting and emigration; their whelps and eggs shall not be collected, the receptacles shall not be dispatched and the mammals shall not be disturbed through their hibernation. The procedures of benefiting from these wild animals, their whelps and eggs within the protection period and struggling with the pests and the forbidden hunting procedures and interim hunting principles shall be determined by the Ministry as required." Moreover; natural habitats, which enable the game and wild animals to feed, shelter, breed and being protected can not be poisoned, polluted, dried and the natural structure of these habitats can not be changed. Cooperation may be established with the village legal entity and the resort municipalities that have territorial properties within the wild life protection and development areas. The essentials and procedures to have the protection service shall be determined by the Ministry.

As stated in article 17 of the Regulation on Wildlife Protection and Development Areas; based on the size and characteristics of the wildlife protection and development sites, adequate number of personnel will be employed to protect and control the sites, to work at visiting and publicity centers and to control hunting activities. The patrolling activities will be carried out by gendarmerie forces and watchmen from the villages. Budget of these personnel will be funded from the Ministry of Environment and Forestry.

Coruh Valley Wildlife Protection Area was defined in accordance with the Turkish Regulation on Wildlife Protection and Development Areas (No: 25637; dated November 8, 2004). This regulation establishes the procedures and the principles of the establishment, administration, supervision of the wildlife protection and development fields and the activities to be permitted or prohibited in these fields aiming at protecting the game and wild animals and their habitats which are in the scope of the Inland Hunting Law numbered 4915. It is cited in the article 11 of this regulation as "Development and management plans consisting of improving habitat conditions for the wildlife development and mandatory wildlife protection sites are

developed or made to be developed by the General Directorate of Nature Conservation and National Parks. These plans are also approved and put into force by the same institution”. Moreover in the article 12 of the regulation, it is cited that protection of these sites is realized by gendarmerie force and watchmen relative to the size and quality of the wildlife protection and development site.

Moreover, Article 22 of the Regulation on Wildlife Protection and Development Areas organizes the allowable activities at the wildlife development areas. This article states that; no activities except the ones stated in the management and approved plans are allowed at the protection sites. Also, in Article 4 of the Inland Hunting Law it is stated that facilities which have adverse effects on these sites, although not located within the boundaries of the protected site, are not allowed. If exists, no discharge without treatment is allowed. No solid waste disposal/storage facilities are allowed at the protection sites (Table 1). Implementation of projects with public benefit is also allowed at the site.”

Table 1. Turkish Nature Conservation Categories

Type of Area	Definition / Protection Target	Level of Protection	Regulatory Base
First Degree Natural Protected Site¹	A site specified for preservation for public benefit due to public interest, rarity, specific characteristics, aesthetic value and or scientific value.	No activity that will effect/damage vegetation, topography and landscape is allowed.	Conservation of Cultural and Natural Assets Law (2863); July 21, 1983 Principal Resolutions of the High Committee of Protection of Cultural and Natural Assets November 5, 1999 (Decision No: 659).
Second Degree Natural Protected Site¹	A site with some degree of protection status which may be used for development, subject to sufficient controls being in place to protect the site.	No construction activities except touristic facilities with touristic investment or operation licences and ancillary facilities. Also, public benefit projects only.	Conservation of Cultural and Natural Assets Law (2863); July 21, 1983 Principal Resolutions of the High Committee of Protection of Cultural and Natural Assets November 5, 1999 (Decision No: 659).
Third Degree Natural Protected Site¹	A site of lower protection status which may, under certain circumstances, be used for development.	Can be used for development considering the potential and use of the region.	Conservation of Cultural and Natural Assets Law (2863); July 21, 1983 Principal Resolutions of the High Committee of Protection of Cultural and Natural

Table 1. Turkish Nature Conservation Categories

Type of Area	Definition / Protection Target	Level of Protection	Regulatory Base
			Assets November 5, 1999 (Decision No: 659).
National Parks	Natural areas with protection, recreation and touristic sites having national and international rare natural and cultural resource values regarding scientific and aesthetic view	Plans, projects and investments of governmental agencies and organizations are allowed (with the permission of Ministry of Agriculture and Rural Affairs)	National Parks Law (2873); August 09, 1983
Natural Parks	Natural sites appropriate for public recreation with vegetation and wildlife characteristics	Construction of touristic facilities are allowed for public use at the national and natural parks outside the touristic region, area and centers (with the permission of Ministry of Agriculture and Rural Affairs)	National Parks Law (2873); August 09, 1983
Nature Protection Area	Rare, under threatened ecosystems and species and natural sites containing special assets that should be necessarily protected (used for scientific and educational purposes)	Used for only scientific and educational purposes (These studies may include the scientific investigations to obtain detailed information about the protected site or to define the mitigation measures for the protection of these sites.)	National Parks Law (2873); August 09, 1983
Natural Asset	Natural sites protected within the scope of national parks principles, with natural characteristics and scientific values	Plans, projects and investments of governmental agencies and organizations are allowed (with the permission of Ministry of Agriculture and Rural Affairs) Construction of touristic facilities are allowed for public use at the national and natural parks outside the touristic region, area and centers (with the permission of Ministry of Agriculture and Rural Affairs)	National Parks Law (2873); August 09, 1983

Table 1. Turkish Nature Conservation Categories

Type of Area	Definition / Protection Target	Level of Protection	Regulatory Base
Wildlife Protection and Development Sites²	A site specified for preservation and continuity together with flora and fauna due to wildlife characteristics	No activities except the ones stated in the management and approved plans. Projects with public benefit are allowed. Facilities which have adverse effects on these sites, although not located within the boundaries of the protected site, are not allowed. If exists, no discharge without treatment is allowed. No solid waste disposal/storage facilities are allowed at the protection sites.	Inland Hunting Law (4915); July 01, 2003 Regulation on Wildlife Protection and Development Areas (25637); November 8, 2004
Status of Coruh Valley Wildlife Protection Area			
The Authority for the Protection of Special Areas (APSA)	Ecologically important sites sensitive to environmental pollution and disturbance with historical and natural assets	All facilities to be constructed within the boundaries of this site are dependent on the permission and monitoring of the Authority for the Protection of Special Areas. Allowable facilities are determined according to the issues stated in the Decree with Force of Law on the Establishment of the Authority for the Protection of Special Areas.	Decree with Force of Law on the Establishment of the Authority for the Protection of Special Areas (383); October 19, 1989

¹ natural sites are defined as the 'over-ground, underground or submarine assets that belong to geological eras, prehistoric and historic eras and that should be protected because of their rareness or specifications and preciousness'.

² Status of Coruh Valley Wildlife Protection Area

The Regulation on the Principles and Procedures Concerning the Protection of the Game and Wild Animals Together with their Habitats and Struggle with the Pests (No: 25976; dated October 24, 2005) also regulates the wildlife protection principles in accordance with the Article 4 of the Inland Hunting Law and the Council Directive 92/43/EEC of May 21, 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora. This regulation aims to protect game, wildlife and their habitats; to regulate the transport, replacement, protection measures, collect and capture, management of wildlife and their illness, harm of species; and to sustain survival of

wild life species, their habitats, marking of the species, scientific studies, capturing, handling, rehabilitating the species and management of their habitats.

Article 25 of this regulation organizes the wild life management plans which states that; management plans are prepared for the habitats which are under protection at different statues and important for wildlife for the protection of wildlife, ensure the continuity of their population and protection of ecological characteristics. These management plans are prepared or arranged to be prepared by the Provincial Directorate of Environment and Forestry with the participation of authorized people from responsible parties. These plans are submitted to the General Directorate of Nature Conservation and National Parks for approval.

If the management plan is prepared by the Provincial Directorate of Environment and Forestry, a commission is formed. This commission consists of head of provincial directorate, head of the related department, an engineer and authorized people from responsible parties. Management plans are approved by the General Directorate of Nature Conservation and National Parks and prepared in ten years of period at maximum. Moreover; in article 8 of the Regulation on Wildlife Protection and Development Areas it is stated that; "For the areas to be proposed as wildlife protection and development areas a commission will be established by the Provincial Directorate of the Ministry of Environment and Forestry (MoEF), which will carry out field investigations and prepare a preliminary investigation report in accordance with the format provided in Appendix 1 of this regulation. In the preparation of this report all parties that have authority or responsibilities in the concerned area shall be consulted and their approval shall be obtained. Then this report will be sent to the General Directorate of Nature Conservation and National Parks together with the 1/25,000 scale map of the area."

V.3. Responsible/Related Parties and Institutional Capacity

The roles and responsibilities of relevant stakeholders shall be defined in the management plan together with their institutional capacity and needs for further capacity building.

The following institutions and organizations shall be involved in the development and implementation of the wild goats management plan, with an adaptive management approach, for the Coruh Valley Wildlife Protection:

- Ministry of Environment and Forestry (particularly General Directorate of Nature Conservation and National Parks and Department of Hunting and Wildlife).
- Artvin Directorate of Nature Conservation and National Parks.
- Universities (particularly experts from universities that have expertise and experience in this field, i.e. Coruh Wildlife Protection Area and wild goats).
- Relevant local and national NGOs.
- General Directorate of State Hydraulic Works (DSI).
- Relevant stakeholders of the Lesser Caucasus GAP Analysis Project (Baku – Tbilisi – Ceyhan Pipeline Company. Turkish Foundation for Combating Soil

Erosion, for Reforestation and the Protection of Natural Habitats, Middle East Technical University.

Below are the details of the responsible organizational structure and information on their present capacity.

Central Organization

General Directorate of Nature Conservation and National Parks is one of the 5 General Directorates of Ministry of Environment and Forestry (MoEF) in Ankara and has 4 departments namely:

- Recreation Areas
- Natural Parks
- Game and Wildlife
- Nature Conservation

Among these the Recreation Areas Department has the following sections:

- Survey and Inventory
- Planning
- Project and Implementation
- Management of recreation areas

Among these the Natural Parks Department has the following sections:

- Survey and Inventory
- Development Plans
- Project and Implementation
- Monitoring and Evaluation
- Legal Rights
- Area management

Among these the Game and Wildlife Department has the following sections:

- Survey and Inventory
- Planning
- Game Management
- Wildlife Management
- Animal Protection

Among these the Nature Conservation Department has the following sections:

- Biological diversity and genetic resources
- Sensitive ecosystems
- Wetlands

- Protected Species
- Landscape protection
- Foreign Affairs

Capacity Information

Under the Game and Wildlife Department of the General Directorate Nature Conservation and National Parks an Ankara two sections are mainly related with the Wildlife Protection Areas. These sections are the Survey and Inventory Section and the Wildlife Management Section.

The technical staff of the Survey and Inventory Section includes:

- One agricultural engineer
- Two forestry engineers

The technical staff of the Wildlife Management Section includes:

- Two agricultural engineers
- Two forestry engineers
- One veterinarian

Local Organization

Artvin Provincial Directorate of the Ministry of Environment and Forestry has 4 departments:

- Forestation, Erosion Control and Orkoy (Forest and village relations)
- Nature Conservation and Natural Parks
- Environmental Management and EIA
- Administration and Finance

Nature Conservation and Natural Parks Department has the following sections in the Artvin province:

- Artvin Section
- Savsat Section
- Yusufeli Section
- Arhavi Section

Artvin Directorate of Nature Conservation and National Parks, National Parks and Game and Wildlife Department is responsible for the monitoring and preservation of the wildlife in Artvin and surroundings. The Coruh Wildlife Protection Area is under their responsibility.

The Forestation, Erosion Control and Orkoy Department has the following sections in the province:

- Artvin Section
- Savsat Section
- Yusufeli Section
- Borcka Section

Capacity Information

The staff of Artvin Nature Conservation and Natural Parks Department includes:

- One water products engineer (department head)
- One forestry engineer (Yusufeli section head)
- Four forest conservation officers
- One technician
- 55 workers (forest guards, prevention of hunting, etc.)
- Temporary workers from villages, when necessary

Major vehicles/equipments of Artvin Nature Conservation and Natural Parks Department includes:

- Motorized vehicles (one automobile and three 4 x 4 jeeps)
- Two Projectors

The planned capacity for these local agencies will be determined based on the results of the Wild Goat Management Plan studies. As stated in article 17 of the Regulation on Wildlife Protection and Development Areas; based on the size and characteristics of the wildlife protection and development sites, adequate number of personnel will be employed to protect and control the sites, to work at visiting and publicity centers and to control hunting activities. The patrolling activities will be carried out by gendarmerie forces and watchmen from the villages. Budget of these personnel will be funded from the Ministry of Environment and Forestry.

V.4. Potential Case-Specific Management Measures

Case specific planning shall provide action based planning. These actions shall be determined based on the changing conditions, identified through monitoring, and evaluations of experts. Some potential actions that would be beneficial to implement will include:

- Formation of watering points for wild goats at appropriate locations minimizing their requirement to use main Coruh River, particularly during construction and for minimizing impact of relocation roads.

- Habitat defragmentation by forming passages with natural habitat characteristics at designated locations (i.e. road passage, etc.).
- Prevention of impacts created by domestic goats from surrounding settlements due to feeding on the same plants with the wild goats.
- Enhancement of ecotourism as an income source, which would require ecosystem sustainability. Proper planning for participation of locals in local ecotourism and management and protection of wildlife protection area.
- Providing information and training to local villagers and public, particularly locals that are occupied by silviculture activities, regarding the wild goats and Coruh Wildlife Protection Area.
- Protection of the flora and supporting habitats used by wild goats.
- Training of workers and prevention of illegal hunting by workers. Prevention of unnecessary project traffic outside of the designated routes. Prevention of disturbance to habitats outside the construction area.

VI. Expected Results

A detailed database on demographic characteristics of wild goats shall be formed at the end of this study. Habitat use maps showing movements and areas preferred by wild goats for different purposes, such as, feeding, breeding, sheltering, etc. will be developed and vegetation cover of importance for wild goat ecosystem will be indicated on these maps.

Based on an adaptive case specific management approach, a flexible plan for wild goats management will be prepared in consultation and with participation of the relevant parties and the public. Further studies and relevant methodologies (survey and evaluation) for monitoring short, medium and long-term impacts will be proposed together with a study program and means for consultation with related parties. The overall scope, program, and costs for these further studies will be determined during this management plan study. The further studies shall provide projections on future demographic conditions and wild goat ecosystem and habitat sustainability, and management measures shall be improved in accordance with the result of these studies.

The reports mentioned in Section IV will be produced such that they will not only provide study outcomes, but also present adequate and feasible recommendations and define roles and responsibilities to implement the recommended actions.

VII. Study Program

The study shall be initiated as early as possible that shall allow collection of records on wild goats and habitat use information. The study for the development of the wild goats management plan will cover a period of two years. The field studies to be conducted during the study period shall cover all the seasons giving special importance to the sensitive periods for the wild goats.

For the two years study period, detailed programming of the studies shall be in a way that it will enable determination of the population density, territorial distribution of populations/flocks, and average number of goats in the flocks. In addition, observation of seasonal changes in biological characteristics and obtaining information on habitat use, movement, mating and breeding behaviours shall be possible. During these two years construction activities for Yusufeli Project is expected to start. Therefore, short-term (acute) impact monitoring should also be conducted during these studies.

Field studies shall be on monthly basis for this period, which will cover about two weeks each month. Further survey and monitoring program will be established based on the results obtained during these studies. These further studies will account for monitoring and management of short-term (acute), medium-term (chronic) and long-term (demographic) impacts on wild goats management.

VIII. Costs

The costs for the wild goats management plan study, covering a period of 2 years (during which the construction of Yusufeli Project is expected to be commenced) will be approximately US\$ 350,000 including the direct costs (travel and accommodation, purchase of data/satellite images, etc.), costs for institutional strengthening (training, workshops, etc.), expert times, equipment and public consultation. This cost will be funded as direct and in-kind from DSI budget assigned to the Yusufeli Project for the specified actions.

Necessary further studies and resources for these will be determined in accordance with the results of this wild goats management plan study. Funding of these further studies would be from the budget of the General Directorate of Nature Conservation and National Parks of the Ministry of Environment and Forestry. In addition, there is an ongoing Global Environment Facility (GEF) Biological Diversity Project in Turkey conducted by this General Directorate, and it was learned that it would be possible to support these studies from this umbrella project. Furthermore, during the course of the studies other funding opportunities can be searched by the study and management team (especially by the university experts), such as from the Scientific and Technological Research Council of Turkey, since the main data gathering will consist of a scientific bio-ecological study.

IX. Study and Management Team

The studies shall be performed mainly by scientists and experts from the universities, from related NGOs, if available, and General and Local Directorates of Nature Conservation and National Parks. A core team of about ten persons is considered to carry out the studies to establish the wild goats management plan. In addition, DSI and the General Directorate of Nature Conservation and National Parks will assign staff for coordination of the studies.

General and Local Directorates of Nature Conservation and National Parks of the Ministry of Environment and Forestry shall be the main institution performing monitoring and management actions following the establishment of the wild goats management plan, obtaining assistance from the universities and NGOs, if necessary. The management of the Coruh Valley Wildlife Protection Area is under the responsibility of the Artvin Directorate of Nature Conservation and National Parks and mainly this institution will carry out the developed management strategies and actions in cooperation and coordination with the related stakeholders.