

## **2013 ANNUAL REPORT OF THE DEPARTMENT OF FORESTS**

Progress in forestry development continued at a high rate during the year under review. All the targets set for the year, of which the main are the following, were achieved:

- Protection of the forests against fires and other biotic agents and abiotic factors
- Adaptation of forests to climate change
- Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems
- Expansion of forests through afforestation of new areas, especially in lowlands
- Establishment and tending of forest stands
- Provision of public recreation opportunities through the creation of National Forest Parks and the establishment, expansion and maintenance of picnic sites, camping sites and nature trails
- Sustainable management of forests through management plans
- Silvicultural treatment and improvement of forests
- Maintenance and appropriate enhancement of protective functions of forests, notably soil and water
- Production of timber, other forest products and forest reproductive material
- Provision of employment and income to the inhabitants of forest villages
- Promotion of forest education and research
- Raising of public awareness and promotion of public enlightenment
- Development and improvement of forest infrastructure (forest buildings, forest roads, vehicles, machinery, telecommunications etc.)
- Expansion of computerised methods of data recording and processing
- Strengthening of administrative and institutional framework
- Harmonisation with Acquis Communautaire, implementation of forest related international obligations and implementation of various plans and projects, which are co-financed by the European Union and the European Economic Area (EEA)
- Promotion of health and safety in the workplace

With a view to achieving the above targets, the amount of €36.190.687 was approved as the Budget for the year 2013. The total amount of the Budget utilised was €31.590.777 (i.e. 87.29%). Reforestation, thinning and felling operations, maintenance and improvement of forest roads and forest telecommunication, forest management, nature conservation, forest recreation and forest protection, were the main projects on which most of the expenditure was incurred. Protection of the forests received the lion's share of the budget.

Apart from the many non-wood benefits derived from the forests that their monetary valuation is difficult, a revenue of €5.540.322 was realised. An additional amount of €4.168.715, which represents lease of forest land for which tenants refused to pay, was outstanding at the end of the year. Efforts are made for their collection.

It is noted that the value of indirect benefits from the forests are multiple to the above direct income and cannot be attributed with economic terms.

The above targets, are dealt with in greater detail below:

### **Protection against fires**

Based on the New Forest Law (Law 25(I) of 2012) the jurisdiction of the Department of Forests for fighting forest fires has been expanded from one to two kilometers from the state forest delimitation line.

The total number of fires, in which the Department of Forests participated in their firefighting during the year under review, amounts to 321 and are analysed as follows:

- 14 fires with starting point within State Forest Land
- 170 fires with starting point in the zone of two kilometers from state forest delimitation line
- 137 fires with starting point outside the zone of two kilometers from state forest delimitation line

From the above, only 126 fires burnt forest or other wooded land.

The total state forest land burnt in 2013 was 7,53 ha. Only 3,93 ha of this burnt area had starting point within State Forest Land. From all the fires in which the Department of Forests participated in their firefighting, an area of 3.401,54 ha of haliland and private land was also burned.

The largest fire which burnt state forest land occurred at Strofigas area near Athienou and Louroukina villages on the 1<sup>st</sup> of June and burnt an area of 15,7 ha, out of which 1 ha was state forest land.

The causes of fires that the Department of Forests participated in their firefighting were as follows:

• Agricultural operations	22,74%
• Country or permanent stay houses	8,10%
• Short circuit of high voltage electric wires	4,05%
• Visitors/ travelers	4,05%
• Military operations	2,18%
• Other causes	0,31%
• Burning of rubbish	1,25%
• Works in the forest	0,31%
• Malicious	36,14%
• Natural Causes (lightning)	1,25%
• Hunting	1,25%
• Rally	0,31%
• Unknown causes	18,07%

The protection of existing forests against fires, especially during the prolonged dry and hot summers, is the principal concern of the Department of Forests. For prevention, the following measures were taken:

- The stand-by duty of the Forest Officers continued during the summer period, at the three Forest Districts and at the Cyprus Forestry College's Forest.

- Recruitment of a Fire Fighting Task Force as well as the operation of fire lookout stations/ observation points. Particular reference should be made to the development of 3 Rapid Intervention Fire Fighting Units, one in each Forest District. The 12-hour shift system continued successfully in all forest stations and lookout stations. The total number of staff was 466.
- Mobile patrols in the forest, especially along the delimitation line, were carried out throughout the summer months for prevention, detection and early intervention.
- During 2013, the Flight Unit of the Department of Forests continued functioning successfully. During the summer period the Flight Unit was strengthened by recruiting 4 firefighters. Additional services for the operation of the aircraft "Air Tractor AT-802" were purchased during the summer period, from one pilot for four months. Also for the maintenance of "Thrush 550" and "Air Tractor AT-802", services were purchased from two aircraft engineers and from one electrical engineer. Services were purchased for the annual inspection and maintenance of "Air Tractor AT-802". During the year under review, the two aircrafts of the Department were used for the fighting of 20 forest fires and 30 rural fires.
- About 0,3 km of vehicle tracks were constructed and existing forest roads were improved and maintained.
- About 1,221 km of fire breaks were built and 1.030 km were maintained.
- Six new hydrants were installed, two at Nicosia District and four at Pafos District.
- Six new water tanks were constructed, three at Pafos District, one at Nicosia District, one at Troodos District and one at Cyprus Forestry College's Forest.
- The mechanisation of the extinguishing of fires continued successfully. At present, the Department has at its disposal 46 fire engines, 40 fire-patrol vehicles and 76 water pumps. In addition, the Department purchased other secondary firefighting equipment such as water tanks, portable water pumps, fire hoses, nozzles, appliances for foam preparation, water launcher systems etc.
- The network of automatic meteorological stations which has been installed in various regions of Cyprus, provided data for the estimation and the extrapolation of fire risk indices around Cyprus.
- The automatic Fire Detection System which was installed at Akamas forest during 2009 continued its operation on a pilot basis.
- A new fire protection system consisting of 8 fire hose cabinets was installed at Livadi picnic site. Also 9 fire hose cabinets were replaced on the existing fire protection system at Cape Greko.
- The "Save our Forests Week" was celebrated from April 26<sup>th</sup> to May 2<sup>nd</sup>. During the week, a press conference was given by the Minister of Agriculture, Natural Resources and Environment. In addition, a campaign for voluntary blood donation by the personnel of the Department took place.
- Lectures on prevention and suppression of fires were given to the National Guard and public schools.

- Training of Forest Officers, the Fire Fighting Task Force, the Rapid Intervention Fire Fighting Units, the Department of Forests labour force and voluntary groups took place.
- Extensive publicity was made through the mass media.

The Department takes all precautionary measures against forest fires and uses all possible efforts to minimize the number of fires. However, this is not feasible without the cooperation of the public. Therefore, the Department of Forests invests in the enlightenment of the public, forest visitors and especially farmers. However, offenders are usually prosecuted.

Furthermore, the Department continued the implementation of the Fire Protection Plan for rural areas which started in 2001. During 2013, 20,9 km of fire breaks were constructed and 3 hydrants were installed. In addition, roads and fire breaks were improved or maintained.

The works in total carried out since the inception of the Plan were as follows: 82,08 km of new vehicle tracks, 472.69 km of fire breaks, 12 water tanks, 4 observation points, 4 helispots and 59 hydrants.

### **Afforestation and Reforestation**

An area of 11,5 ha was afforested and an area of 93,4 ha was reforested during the year under review including burnt or stressed state land and Haliland. According to the new practice, artificial reforestation using mechanical means is carried out only in special cases.

The works concerning the reforestation/ restoration of the environment at Amiantos (Asbestos) mine, initiated in 1995 continued.

Enrichment planting at an area of 22,7 ha, which was stressed or had insufficient regeneration and beating up to an area of 5,9 ha was also carried out.

In 2013, the Department of Forests in its efforts for greening areas outside forests and adopting of a uniform policy for the management of these areas continued with the landscaping of several public places.

### **Nature Conservation**

During 2013, the Department contributed significantly towards the efforts undertaken by the Ministry of Agriculture, Natural Resources and Environment for nature conservation.

The Department of Forests intensified its efforts through the organisation of lectures, voluntary work, ceremonies, speeches through radio and TV and issued new enlightening and informative material for expansion of tree planting and protection of nature.

Both Troodos and Athalassa Environmental Information Centers continued their operation successfully. A total of 5.900 and 6.625 visitors, mainly from Pedagogical Institute, schools and other organized groups, visited Troodos and Athalassa Environmental Information Centers respectively. As from September 2008, in close collaboration with the Ministry of Education, Athalassa Environmental Information Center is operating as an Environmental Education Center.

After a new tender in November 2012 for the construction of the Environmental Information Center at Cape Greko, the Department of Forests has signed a contract with a private

company for the completion of the project. The contract was signed on 31/7/2013 and the work began in September 2013. The whole project is expected to be completed within 14 months.

Regarding DIA.PER.EK. project: "Trans-boundary Environmental Education", of the Trans-boundary Cooperation Program Greece – Cyprus, 2007 - 2013, in which the Department of Forests participates as the major beneficiary, the second phase of the project which involved the design and landscaping of the external area of the Environmental Information Center at Athalassa was completed in November 2013. Through this project a small zoo with domestic animals, an innovative element in environmental education, was developed. The inauguration of the project took place on December 9, 2013. Also, the preparation of a film for Athalassa National Forest Park as well as an educational CD were completed.

During 2013, the Department participated in the following projects of the Program LIFE+:

- PLANT-NET CY project: "Establishment of a Plant Micro-reserve Network in Cyprus for the Conservation of Priority Species and Habitats". This project, in which the Department of Forests participated as a cooperating institution, completed in June 2013
- ICOSTACY project: "Improving the conservation status of fauna species in Cyprus". This project started in October 2010 and will be completed in March 2014
- JUNIPERCY project: "Improving the conservation status of the priority habitat type 9560\* (Endemic forests with Juniperus species) in Cyprus". This project started in January 2012 and will be completed in June 2015
- Oroklini project: "Restoration and Management of Oroklini Lake a Special Protection Area in Larnaca, Cyprus". This project started in January 2012 and is expected to be completed in January 2015
- Rizoelia project: "Improving the conservation status of the priority habitat types \*1520 and \*5220 at Rizoelia National Forest Park". This project started in September 2013 and is expected to be completed in February 2017

Also, the Department of Forests participates in the EEA – Grants 2009 – 2014 Programme: "Biodiversity Conservation in Restoration and Management of the Amiantos (Asbestos) Mine in Troodos National Forest Park".

As in previous years, particular emphasis was given to the protection and reproduction of the Griffon Vulture, (*Gyps fulvus*), the wild population of which numbers 12 individuals. Through the GYPAS project; "Empowering the Cypriot population of Griffon Vulture (*Gyps fulvus*) with others from Crete (Greece)" in the current year, the Department received another 6 vultures from Crete. On 15 vultures out of the 17 that were acquired so far from Crete, transmitters were placed and the individuals released in nature.

In addition, the study of Cyprus bats, which was started in 2006, continued.

The maintenance and expansion works at Troodos and Akamas Botanic Gardens continued with collection of propagating material for installation at the Botanic Gardens. The Department also maintains a small Botanic Garden at the exterior area of the Environmental Information Center at Athalassa which is an integral part of the Centre.

The efforts to identify, protect and maintain tree monuments continued.

Also, the effort for the study, protection and systematic recording of the Cyprus indigenous and endemic plant species continued and furthermore specimens were collected for the enrichment of the Departments botanical collection.

## **Forest Recreation**

Cyprus forests provide recreational opportunities because of the variety of flora and fauna, the geomorphology, the climate and water conditions in combination with the accessibility, the short distances from towns as well as the existence of historical, archeological and other places of interest inside or near the forests.

Within the framework of the policy for the development of National Forest Parks, the Department continued the implementation of the development plans, as well as the maintenance works in all Forest Parks.

The works for the development, expansion and maintenance of picnic and camping sites continued. Different works including the development of infrastructure, the configuration of the ground, the construction of wooden tables, sheds, fire places, playgrounds, latrines, rubbish disposal places, signposts etc. were carried out.

During the year, 45 picnic sites with a capacity of 22.044 persons and 3 camping sites with a capacity of 290 tents were available to the public. Another 2 camping sites which are located in state forests and managed by other private agencies were also available to public. These sites were fully occupied during the summer high season.

The implementation of the i4WALKer project: "Enhancement of Tourist Infrastructure and Services and Reorganization of the Management System and Promotion of the Hiking Trails in Island Regions" of the trans-boundary cooperation Program Greece – Cyprus, 2007 – 2013, was completed in November 2013.

Within the framework of the above pilot project four nature trails (Aphrodite in Akamas, Caledonia and Persephone at Troodos and Agioi Anargyroi at Cape Greko) were upgraded. The upgrade included improvement works like the placement of special devices for counting visitors, information signs as well as equipment for evaluating the use of nature trails and visitor satisfaction. A guidebook (in Greek and English) which includes five nature trails of Akamas, 16 of Troodos and 5 of Cape Greko was prepared and printed. Furthermore, three thematic maps with the routes of nature trails, one for the Troodos area, one for the Cape Greko and one for Akamas, were printed.

Also, through GEO.TOPIA project: "Geotourism and Local Development", of the trans boundary cooperation Program Greece - Cyprus 2007 - 2013, three existing hiking trails at Troodos ("Artemis" and "Atalanti" at Troodos forest and "Teishia tis Madaris" at Adelfoi Forest), were transformed to Geotrails. The works carried out included the improvement of the route, improvement of the infrastructures and upgrading of the existing information signs by giving a greater emphasis on geology. Furthermore, in October 2013, the Department of Forests completed one of the major activities of this project which was the restoration/ configuration of the old elementary school buildings at Amiantos (Asbestos) mine, which will be operated as a "Geo-park Visitor Centre".

Additionally, the expansion of the existing nature trail "Selladi Karamanli - Kannavia" which is located at Kapoura valley of Adelfoi forest, was completed.

During the reporting year, various works for the maintenance and improvement of nature and hiking trails in the state forests were carried out. Great interest was shown from local and foreign visitors for the trails.

### **Timber Production and Disposal**

During the year under review, timber extraction and supply to local sawmills continued in a satisfactory way. A volume of 3.492 m<sup>3</sup> timber was extracted from state forests out of which 176 m<sup>3</sup> were extracted from burnt areas. Also a volume of 808 m<sup>3</sup> timber was extracted from private forests and another 358 m<sup>3</sup> was extracted from haliland and other areas.

In addition to the above, timber from state forests, equivalent to 6.207 m<sup>3</sup>, was extracted as firewood. From the above volume, 939 m<sup>3</sup> were extracted from burnt areas. Also a volume of 644 m<sup>3</sup> of firewood was extracted from private forests and another 177 m<sup>3</sup> of firewood was extracted from haliland and other areas.

During 2013, the Department issued 17 sawmill permits.

### **Sustainable Forest Management**

The management of forest resources is carried out on a sustainable basis with main aim the maximisation of social and economic benefits from the forests through their multiple use, maintaining at the same time the naturalness and improving their composition and structure.

In October 2013, the mapping of forest formations and Habitats of the Directive 92/43 occurring within the spread limits of the black pine (*Pinus nigra subsp. Pallasiana*) began. Aim of this mapping is the development of a geo-database and a database that will help in the better utilization and promotion of the black pine forests.

Also the inventory for *Pinus brutia* forests in productive, non productive forests and reforestations which started in September 2011, continued and completed in August 2013.

### **Silviculture – Forest nurseries**

During the year under review, emphasis was given in tending of forest stands. Tending operations were carried out in 2.260,1 ha of young plantations. During 2013, 50 kg seeds were extracted from cones gathered by the Department of Forest. Another 1.074 kg of seeds were extracted from cones purchased from private individuals. The quantity collected together with the stock of 2012, amounted to 6.100,6 kg. Out of this quantity, 4 kg were sold to public and 434,5 kg were used departmentally.

During 2013, there were no exports of seed. 250 kg hydroseeding mixture was imported and it was used at Amiantos (Asbestos) mine.

The production of seedlings at the departmental nurseries was adequate. A total of 44.324 seedlings were raised compared to 159.999 in 2012. The seedlings produced in 2013 and the stock of 2012, amounted to 453.376. Out of this quantity, 45.836 were used departmentally, 55.311 were sold to the public, 390 were sold to other Government Departments, and 8.381 were donated to schools, village authorities and other organisations and institutions for planting on public or communal lands. Also, 314 seedlings dried out and were written off.

The Department of Forests during 2013 started the preparation of a manual with guidelines as regards the collection, production and marketing of forest reproductive material. The objective is to record the plant species that each forest nursery will produce, the collection area of the reproductive material for different species, the qualitative and quantitative characteristics that the plant species must have prior to their disposal, as well as the forest species for which identity records must be kept.

## **Forest Engineering**

### **a) Forest Roads**

The construction of new forest roads and the improvement of existing ones, constitutes an important aspect of the work of the Department as roads serve on the one hand the systematic management, forest protection, reforestation, tending and exploitation of forests and on the other hand tourism and communication between forest villages.

The maintenance, widening and improvement of existing roads continued and 0,3 km of vehicle tracks were built.

The total mileage of the forest road network by the end of 2013 was 1.398,175 km of main forest roads (out of which 208,86 km are asphalted), 1.016,853 km of vehicle tracks and 1.218,506 km of extraction roads.

### **b) Forest Telecommunications**

The Department maintains a telecommunication system for proper forest protection and management. This telecommunication system at the end of 2013 included the following:

- 454 telephone handsets
- 13 cellular telephones
- 1 telephone switch-board
- 1 VHF. control station
- 563 mobile radiotelephones
- 645 portable radiotelephones
- 8 radiotelephone repeaters
- 11 telephone systems
- 1 alarm system with phone line connection

### **c) Forest Buildings**

During the year under review, the following works were carried out:

- Construction of a fire lookout station at "Zacharou" area at Stavros tis Psokas
- Construction of a fire lookout station at "Kakos Anemos" area at Agios Theodoros valley
- Construction of a kiosk at Agios Georgios Park located at Athalassa National Forest Park

Also the construction of a store at Athalassas forest nursery area, was started. In addition, usual repairs and maintenance works were carried out to various forest buildings.



## Forestry Education

In 2013, the Cyprus Forestry College completed its 62<sup>nd</sup> academic year (2012 - 2013). Eleven students, all from Cyprus graduated during 2013.

The 63<sup>rd</sup> academic year (2013 - 2014) began on October 2<sup>nd</sup> with a complement of 14 students out of whom 12 were Cypriots and 2 from other countries.

During 2013, the Cyprus University of Technology completed the final revision of its proposal for the establishment of a new Department covering Forestry science.

This final proposal was approved by the University's Senate and Council on the 15/5/2013 and 25/9/2013, respectively. This proposal includes the establishment of a new Department of Natural and Energy Resources, with three directions, one of which is Forestry. The proposal was submitted to the Ministry of Education and Culture on the 11/11/2013 for further assessment and adoption.

At the same time the Department of Forests appointed an ad hoc Committee to report on the current status of the Cyprus Forestry College and to formulate suggestions for the future role of the Forestry College. During 2013, the Committee held 3 meetings and it is expected to finalize its work by the end of the first half of 2014.

During the year under review, the Learning Unit of the Department of Forests functioned successfully. The learning activities materialized in 2012 were evaluated. A report for the learning activities of 2013, and a plan for the learning needs of 2014 were prepared.

Through the Learning Unit activities of 2013, a number of officers participated in various training courses.

The training programs offered by the Cyprus Forestry College concerning the correct and safe use of chainsaws, continued. During 2013, two training courses were materialized and certification was provided to individuals who attended the relevant training program and succeed the relevant written and practical exams.

Also a number of officers of the Department participated in various international conferences and seminars.