

- Auxiliary personnel and workers
- 2 auxiliary personnel units
- 4 workers.

The proposed educational qualifications for the above personnel are:

- Director

Environmental disciplines degree. Particular experience concerning management of parks and equivalent protected areas.

- Person in charge of administrative services

Law or economic disciplines degree. Particular experience concerning administration and public accounting.

- Person in charge of technical services and surveillance

Technical and scientific disciplines degree or diploma. Experience concerning planning.

- Person in charge of scientific/cultural services and interpretation

Environmental, scientific or classical disciplines degree. Particular experience concerning the problems of scientific popularization of environmental education.

- Park Rangers

High-school certificate and specific professional training (*).

- Park Interpreters

High-school certificate and specific professional training.

- Administrative clerks

High-school certificate and specific professional training.

The establishment of the Park will certainly lead to the creation of additional job opportunities in the sectors of tourism, services, handicraft and agriculture.

Suitable training courses for the management of activities (and above all tourism) are to be discussed. Training proposals are described in Paragraph 7.2.4.

7.2.3 Budget Requirements

The park is a special project of environmental protection and social-economic development, managed by governmental authorities. As such, it must be supported by the national and international community, and financed with public resources.

Due to the specificity of development projects activated by a park, it may be said that the management of a park does not tend to multiply and expand public expenses, but rather it tends to qualify and orient them following principles of evaluation of costs and benefits of interventions to be financed.

(*) To be acquired by suitable Training Courses organized by the Park.

Therefore, the establishment of the Park must be accompanied by funds sufficient to ensure:

- installation in office and operation of management bodies (Park Council, Auditors, Committees, etc.);
- payment of the permanent staff (number of units to be defined);
- acquisition of equipment, installations, etc. needed to activate the park's initial management;
- implementation of management, organization, development priority projects;
- payment of studies, research, etc. needed for development of the Park;
- payment of possible compensation, incentives, etc. which could finally be necessary.

The grant of funds needed for managing and promoting the Park must be provided for and ensured by the Central Government. The amount of these funds will be indicated by the Park Council in the budget, based on specific plans and projects.

Besides ensuring protection and conservation of a good of public interest, these funds are indispensable for the activation of job opportunities which will result from the establishment of the Park.

It has been proved that in absolute terms the amounts necessary to create a job in a Park or equivalent area are the lowest, compared to other sectors of the economy. This element, associated with the value of environmental protection in itself, motivates investments in this sector.

In addition, it has been proven that each job created in a Park brings about job opportunities for additional people: 4 to 7 depending on the type of Park and possible economic activities. In other words, this means that an investment for the activation of a 10-person staff may provide work for an additional 40-70 persons autonomously operating in the Park.

Besides this, it is worth considering that in the medium and long term, part of the services offered by the Park may contribute to the financing of its management, although this will have to be supported by the Government to a large extent, as happens for all Parks in the world.

The expenses for the establishment of the Mount Kandili Nature Park have been estimated at 80 Mil. Drachmas for the first year.

Part of these resources may derive from the national and international funds for suitable development programmes (agriculture, tourism, etc.).

The Park budget for two years after the establishment of the Park should not be lower than 50 Mil. Drachmas.

For the subsequent years, financial requirements will be indicated by the Park Council based on respective management programmes.

7.2.4 Training Course Programme for the Technical and Administrative Management of the Mount Kandili Natural Park

Specific training courses have been provided for in the section on technical and administrative management of the Mount Kandili Park, in order adequately to prepare a nucleus of local youths for new professions required by the Park institution.

Since these persons will be directly employed by the Park itself, particular attention will be paid in selecting personnel to be admitted to courses.

The recommended selection criteria are indicated in programme guidelines prepared for the proposed training courses, particularly concerning:

- a training course for park rangers
- a training course for park administration operators
- a training course for operators skilled in museology and environmental museography.

As with courses for development of compatible activities, these courses may be developed with the support of the European Social Fund.

7.2.4.1 Programme Guidelines for the "Professional Training Course for Park Rangers"

Duration of the course:

5 months (20 weeks/800 hours)

Admission requirements:

certificate of compulsory secondary school, (administration-accounting)

age between 18 and 29 years

selection interview, to ascertain the applicant's motivation and attainments

knowledge of at least one foreign language.

Type of course:

Semi-residence, 8 hours per day, 5 days per week.

Scheme of teaching programme:

- analysis of the Park territory natural features
- rational utilization of resources: World Conservation Strategy
- the Park as a means of management and conservation
- elements of general biology
- elements of general botany
- elements of phytogeography and plant ecology
- elements of general zoology
- elements of general ecology
- elements of geology, hydrogeology, geomorphology
- elements of silviculture, forest botany, hydrogeologic settlement
- fire prevention and fighting
- cartography
- radiotechnics and communications

- photography and technics for audiovisual making
- first aid
- Park organization criteria
- land interpretation
- national legislation on environmental protection
- park institution law
- police rules and administration procedures
- management of wild fauna: census, capture, marking
- phyto-sociologic surveys
- training in utilizing weapons.

7.2.4.2 Programme Guidelines for the Professional Training Course for Park Administration Operators

Duration of the course:

4 months (16 weeks/640 hours)

Admission requirements:

certificate of compulsory secondary school, (administration-accounting)

age between 18 and 29 years

selection interview, to ascertain the applicant's motivation and attainments

knowledge of at least one foreign language.

Type of course:

Semi-residence, 8 hours per day, 5 days per week.

Scheme of teaching programme:

- World Conservation Strategy
- the Park as a means of management and conservation of natural resources
- national legislation on environmental protection
- national legislation on territory organization
- Park institution law, Master Plan and land utilization regulations
- Park organization and management
- Park promotion and development
- personnel management
- elements of statistics and informatics
- administrative procedure employed by the Public Administration
- balance sheets, resolutions, management of offices and services
- assistance to Park economic operators for development project management.

7.2.4.3 Programme guidelines for the "Professional Training Course for Operators Skilled in Museology and Environmental Museography"

Duration of the course:

6 months (25 weeks/900 hours)

Admission requirements:

- certificate of junior high school! (classical studies)
- age between 18 and 29 years

- selection interview, to ascertain the applicant motivation and attainments
- at least one foreign language written and spoken.

Type of course:

Semi-residential, 8 hours per day, 5 days per week.

Scheme of teaching programme:

- analysis of the Park territory
- the Park as a means of management and conservation of natural resources
- the role of museums in Park territory and management
- national legislation and regulations on museums
- museology
- elements of museography and museum organization
- the historical-cultural museum
- the naturalistic-scientific museum
- conservation techniques
- finds cataloging techniques
- restoration techniques
- education, communication, popularization techniques
- educational material design techniques
- audiovisual preparation techniques
- promotion and management of activities connected to and induced by the existence of a museum
- informatics
- elements of statistics.

EPILOGUE

With the completion of this study the endeavour to create a nature park in Kandili has every chance of continuing and finally succeeding. The comprehensive research programme which has been carried out in the area confirms its value from an aesthetic, geological, botanic and zoological viewpoint, not to mention the great ecological variety which characterises it, making it an exceptional (for southern Greece) location for recreation, for ecological tourism and for environmental education. An added advantage of the estate in question is that it comprises a unified, very well preserved natural totality. The detailed proposal for management of the Nature Park shows that its creation would be both feasible and beneficial, given the economic decline and unemployment which are making their inroads into the area, and given the proximity to the capital of four million inhabitants in search of satisfying and high-quality access to nature.

Experience from contacts with local inhabitants has shown that the suspicion due to isolation and social backwardness as well as the reservations concerning likely restrictive measures can be overcome through honest dialogue and through an emphasis of the advantages to be gained from the creation of the Nature Park. The greatest obstacle is the traditional dispute with the Noel-Baker family and the contemporary litigation concerning ownership rights which has ensued. If action for the creation of the Park is delayed pending resolution in the courts of the ownership question then the chance may be lost forever, since various destructive interventions, appropriations, fires etc. are very likely to cause irreparable damage to the forest in the coming years. If by contrast the reasonable policy of consensus solutions is chosen, then the ownership question may be resolved through the waiver of all rights and claims on the estate, private and public, and their transfer to the organisation which will undertake to create the Nature Park. In such an eventuality there are grounds for hope that European Community funds as well as other international organisations and generous citizens will support financially this --for Greece-- pioneering venture.

MAP WITH FEATURES OF ENVIRONMENTAL, HISTORICAL AND AESTHETIC INTEREST (Map 2)

This map summarizes environment and landscape elements, as well as interesting single elements, which have been dealt with in detail in the section related to the surveys carried out in the field.

In particular, colors and symbols have been utilized in accordance with their meanings, as explained hereunder.

VIOLET (areas of particular aesthetic value)

Three areas have been selected: all the gorges formed by the Kereus river (1) the massif of Mount Kandili (2) environments included between the village of Drazi and the western border of the Park (3).

The latter are particularly due to the alternation of woods and meadow-pastures and explain the unique "Alpine" aspect which the rural landscape has been taking on in the course of the centuries.

GREEN (areas of particular vegetational interest)

Include area identified through the field research carried out up to now, in particular:

- 1 - the gorges of the Kereus river, in the part located near the southern border of the Park, due to the presence of endemic species;
- 2, 3 - two zones limited in area, near the mines, due to the presence of rare and endemic species;
- 4 - the area adjacent to the road to Prokopi, to the left of the river, due to the presence of a rather extensive remainder of the mixed wood (oaks and other broadleaves) which testifies to the former vegetational character of the Park area;
- 5 - fields and meadows adjacent to the village of Prokopi, due to the wide variety of interesting flower species;
- 6, 7 - two strips of wood in the sub-mountain area, characterized by the presence of different tree species (*Abies cephalonica*, *Pinus nigra*, *Pinus halepensis*) with noteworthy examples of remarkable age and dimensions;
- 8 - The area of Mount Kandili above 900 meters, due to the presence of endemic or rare species.

BROWN (areas with interesting animal and bird species)

At the present stage, four areas have been identified. They include rare species or a variety of species, mainly ornithic.

- 1 - Presence of the Golden eagle (*Aquila chrysaetos*)
- 2 - Wide variety of species of birds of prey
- 3 - Presence of Otter (*Lutra lutra*)
- 4 - Considerable variety of different species (vertebrates and invertebrates).

FULL GREEN CIRCLES

Identify two areas particularly interesting from a botanic or ecological viewpoints.

- 1 - A small swamp area constituting the only example of "damp zone" in the whole Park territory, which plant and animal species typical of swamp ecosystems
- 2 - A small "lake", the origin of which is a deposit of mine detritus, processing waste, and waste water from the mine. An interesting "naturalization" process is in course, with colonization by pioneer plant species.

GREEN AND ORANGE CIRCLES

Identify areas which are particularly interesting from an environmental and aesthetic viewpoint, mainly related to the traditional agricultural activities which took place in the past. They have returned or are gradually returning to the state of natural meadows.

FULL YELLOW CIRCLES

Identify the known elements which are interesting from an historical and archaeological viewpoint.

- 1 - Ruins of the ancient Venetian Fort
- 2 - Area with the ruins of the ancient roman "Castrum".

FULL ORANGE CIRCLES WITH THE SYMBOL OF A HAMMER

Identify areas characterized by geological and geomorphological key-points which permit the interpretation of the origin and geological evolution of the Park area.

- 1 - Gorges of the Kereus river
- 2, 3 - Mines
- 4 - Morphologies due to torrential erosion
- 5, 6 - Slopes of Mount Kandili and their different morphologies.

GREEN CIRCLES WITH TREE(S)

Provide a cartographic indication of trees or groups of trees identified during on-field surveys and described in the text: these are particularly interesting from a naturalistic viewpoint (ancient trees, isolated trees having particular forms or dimensions, groups of trees noteworthy for their ages or aspects, etc.).

SMALL FULL BLUE CIRCLE, WITH THE SYMBOL OF A FOUNTAIN

Indicate the springs identified in the Park.

TWO SMALL, FULL, BLUE CIRCLES

Indicate the main spots which permit an all-round view of the Park.

BIBLIOGRAPHY

- Alexandre Buchon, Voyage dans l' Eubée. Les Iles Ioniennes et les Cyclades en 1841
- G.A. Perdicaris, 1845, The Greece of the Greeks, New York
- Lindermayer, 1855, Euboea, Eine naturhistorische Skizze, Bul. Soc. Imper. Nat. Moscow 28: 401-451
- Herny M. Baird, 1856, Modern Greece: a narrative of a residence and travels in that country, New York
- Bayard Taylor, 1859, Travels in Greece and Russia, London
- Thomas Wyse, 1871, Impressions of Greece, etc. London
- Henri Belle, 1881, Trois années en Grèce, Paris
- Population Censuses 1961-71-81 (in Greek)
- Kanellis A. Hadzisarantos H., 1963, The mammals of Greece, Mountain areas 230: 6-21 (in Greek)
- Ondrias J.C., 1964, Die Saugetiere Griechenlands - Saugetiere. Mitt. 13(3): 109-127
- Van Etten R.C., Switzenberg D.F., Eberhardt L. (1965) Controlled deer hunting in a square-mile enclosure. Journal of Wildlife Management 29 (1) 59-73
- Ondrias J.C., 1966, The taxonomy and geographical distribution of the rodents of Greece. Saugetiere. Mitt. 14 1-136
- Ondrias J.C., 1968, Liste des Amphibiens et des Reptiles de la Grèce. Biol. Gallo-Hellen. 1(2): 111-135
- Paslawski T. (1970), Protection of pine plantations against browsing by cervids. Transactions of the IX International Congress of Game Biologists, Moscow
- Mavrommati G., 1970 Report on the choice of a suitable site for an arboretum in the Prokopi Forest, Northern Evvia, Athens (in Greek)
- Dasmann W. (1971) If deer are to survive. Wildlife Management Institute. Stackpole Books
- Archmandrite Ieronymos Liapis, 1971, Medieval Monuments of Evvia, Athens (in Greek)
- Dimitriou, H. Seta, 1972, The old plane-tree of Evvia, Athens (in Greek)
- J.W. Zaaijer, 1973, National forests and recreational woodlands in Greece, IDEA editions (in Greek)
- Skagia S., 1978, Report on Hydrogeological Reconnaissance in the region of the village of Mantoudi, Evvia, , Athens (in Greek)
- Staikos G.P., 1978, The Greek War of Independence in Evvia and the history of the Noel-Baker family in Greece, Athens (in Greek)
- Adamus P.R. and Glough G.C. 1976, Evaluating species for protection in natural areas, Biol. Conserv. (13): 165-178
- Ralls K., Brugger K., Ballou J. (1979), Inbreeding and juvenile mortality in small population of ungulates, Science 206:1101-3
- Giagia E.B., Ondrias J.C. 1980 Karyological analysis of eastern European hedgehog, Erinaceus concolor, in Greece. Mammalia 44: 59-71
- Fuller R.J., A method for assessing the ornithological interest of sites for conservation, Biol. conserv. (17): 229-239
- Blondel J., Ferry C. and Frochot B., 1981, Point counts with unlimited distance. Studies in Avian Biology No. 6: 414-420
- Lewis G., Williams G. Rivers and Wildlife Handbook, RSNC publ.
- Clutton-Brock T.H., Guinness F.E., Albon S.D. (1982) Red deer: Behaviour and ecology of the two sexes. Edinburgh University Press

- Cop J. (1983): Migration of lynx (*Lynx lynx* L.) after reintroduction in Slovenia (Yugoslavia), p. 389 in: XV Congr. Int. Fauna Cinegetica y Silvestre, Trugillo, 1981
- Bailey J.A. (1984), Principles of wildlife management. John Wiley & Sons, Inc.
- Douma-Petridou E., 1984, Contribution to the knowledge of *Martes foina* Erxl. from Achaia, Northern Peloponnese, Greece, and rest of Southern Balkan Peninsula, *Mammalia* 48 (4): 565-572
- Lovari S. (ed) (1985) The biology and management of mountain ungulates, Groom Helm
- Mason C.F., Macdonald S.M. (1986): Otters, Biology and Conservation, Cambridge
- Prefecture of Evvia, 1987, Regional Planning Organisational Proposals for the Department of Evvia, Halkida (in Greek)

TECHNICAL APPENDICES

APPENDIX I: PHYSICAL FEATURES OF THE REGION

Relief (MAP 1)

The study area extends from the south-western slopes and peaks of Mount Kandili to the foothills of Mount Pyxarias. Altitudes range from 0 metres (the waterfront at Achladi-Kokkalaki) to 1,225 metres (Mount Kourvelo).

The terrain presents gentle to medium gradients, apart from the western slopes of Mount Kandili which descend abruptly to the Gulf of Evvia. Gradients are similarly steep in the mountain's peak zone.

The high percentage of forest cover, the gentle gradients and permeable limestone base rock are all contributory factors to the lack of any significant rivers or streams in the area. Those there are do not flow all year round; they supply water to the River Kereus mainly during the winter and spring months, following the melting of the area's snows.

The morphology of the ground is intense presenting steep gradients, especially on the slopes along the summit ridge Kourvelo-Drakotourla- Stroungitsa characterised by guling, talus fan formation and appearance of the bedrock. Similar degradation of the ground and intense erosion are also observed in the mining zone.

Climate

Accurate climatic data for the study area and the broader region do not exist.

There is merely a pluviometer installed by the Ministry of Public Works at an altitude of 75 m near the village of Prokopi. According to records covering the period 1960-1984, rainfall is high, averaging 1098.3 mm per annum. The maximum rainfall is in January, while the dry period lasts from May to October (Table 1).

These data are insufficient for a complete description of the climatic conditions in the region. The lack of temperature measurements which would permit the plotting of ombrothermic diagrams from which the climate type could be deduced is a major problem.

Additional information concerning the climate can be found in the management plans for the forest. According to these data the temperature extremes occur in January with -5° and in July with 38° C. The prevailing winds are north-easterly following the direction of the mountain chains of Kandili and Pyxarias. These winds bring rain since they pass over the Aegean Sea. In general the weather on the eastern slopes of Kandili is influenced by the Aegean, and it might be expected to be similar to but rather warmer than the climate of the eastern slopes of Mount Pelion further north. On the western slopes the climate is drier, rather comparable with the climate of the nearby mainland with probably half the rainfall encountered on the eastern slopes (average rainfall at Chalkis: 432 mm).

The nearest weather station on the eastern coast is situated at Kymi, and is operated by the Ministry of Public Works, and on the western coast at Chalkis, operated by the National Meteorological Service (EMY). The weather stations are placed at low altitude and their operation was interrupted for several years (1941-1948).

Of considerable significance to the microclimate and the hydrological balance of the study area is the evapotranspiration and the precipitation in the form of dew and fog -especially during the hot, dry summer months.

TABLE (1)
HYDROLOGICAL STATION AT PROKOPI, EVVIA(Height A.S.L. 75 m)

Hydro Year	M o n t h l y R a i n f a l l											
S	O	N	D	J	F	M	A	M	J	J	A	TOTAL
1960-61												
139,7	23,0	142,1	151,5	145,5	166,3	135,4	20,9	6,6	25,7	52,8	3,8	1019,3
1961-62												
4,5	168,0	54,5	377,2	48,1	134,5	33,5	9,9	35,2	1,5	10,0	0,0	876,9
1962-63												
180,3	233,5	125,6	406,1	312,8	97,5	42,5	22,8	89,3	1,0	3,2	0,0	1614,6
1963-64												
1,0	556,2	210,2	72,8	207,1	75,5	85,8	33,0	37,5	33,0	1,0	17,5	1330,6
1964-65												
126,6	11,6	97,4	109,6	118,4	181,6	144,9	68,5	26,2	13,9	20,0	0,0	918,7
1965-66												
0,0	49,7	46,5	53,5	203,2	11,0	243,2	28,0	49,0	53,5	0,0	92,0	829,6
1966-67												
31,8	100,2	117,0	100,2	170,4	156,2	165,5	46,7	46,8	28,6	10,9	9,0	983,3
1967-68												
63,6	150,6	187,4	146,8	95,9	97,9	100,6	16,5	28,9	20,5	4,9	20,7	934,3
1968-69												
42,2	81,8	119,7	254,8	107,9	13,0	173,1	31,5	0,1	42,0	10,8	0,0	876,9
1969-70												
20,7	12,9	51,9	362,7	119,9	95,2	162,8	11,2	94,1	50,3	0,0	5,3	987,0
1970-71												
44,6	127,2	33,0	138,0	295,1	240,8	157,9	42,8	8,2	4,9	63,7	106,5	1262,7
1971-72												
126,6	217,9	122,6	70,3	329,1	95,6	34,5	99,4	40,1	32,2	34,8	100,0	1303,1
1972-73												
29,7	228,6	113,6	110,9	230,4	73,7	46,9	3,5	3,0	3,3	103,0	4,5	951,1
1973-74												
73,9	96,8	114,4	110,5	213,1	228,4	225,7	72,5	92,2	22,8	1,0	11,9	1263,2

TABLE (1) -CONTINUING-

Hydro Year	M o n t h l y R a i n f a l l											
S	O	N	D	J	F	M	A	M	J	J	A	TOTAL
1974-75												
46,4	45,9	259,3	47,3	326,9	511,0	45,9	16,0	17,3	69,7	0,0	56,3	1442,0
1975-76												
48,5	134,4	100,4	308,1	149,1	230,7	75,7	56,3	16,8	2,6	29,0	64,3	1215,9
1976-77												
8,1	113,8	90,8	108,9	27,5	2,7	61,6	52,8	1,5	38,2	0,0	0,4	506,3
1977-78												
24,8	0,0	5,6	455,1	449,9	137,4	94,1	142,4	11,7	2,4	0,0	0,0	1323,4
1978-79												
106,5	148,4	52,2	223,8	55,5	49,7	11,6	10,1	52,3	2,2	51,8	59,0	823,1
1979-80												
26,8	544,2	152,0	40,5	105,6	182,7	209,7	105,7	77,7	26,5	0,3	59,9	1531,6
1980-81												
3,7	318,0	15,2	257,1	496,5	111,5	18,5	19,2	2,6	0,0	1,1	19,7	1263,1
1981-82												
0,6	26,1	110,9	58,0	141,8	226,3	218,3	150,5	257,2	19,5	14,1	2,1	1225,4
1982-83												
3,0	23,9	176,0	67,9	39,5	169,8	71,3	7,0	11,0	77,4	61,6	8,0	716,4
1983-84												
0,1	62,1	125,8	278,0	148,3	128,5	192,5	150,5	14,2	26,6	7,5	26,2	1160,3
TOTAL												
1153,7		2624,1		4537,5		2851,5		1019,5		481,5		26358,8
	3474,8		4309,6		3417,5		1223,7		598,3		667,1	
AVERAGE												
48,1	114,8	109,3	179,6	189,1	142,4	118,8	51,0	42,5	24,9	20,1	27,8	1098,3
MAX.												
180,3	544,2	259,3	455,1	496,5	511,0	225,7	150,5	257,2	77,4	103,0	106,5	—
MIN.												
0,0	0,0	5,6	40,5	27,5	11,0	11,6	3,5	0,1	0,0	0,0	0,0	