

## CHARACTERISTICS OF THE FOREST FUND IN IASI COUNTY, WITH SPECIAL REFERENCE TO THE FOREST WARDS OF IASI AND CIUREA

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**Key words:** ultraviolet solar radiation, erithermal solar radiation, UV index.

**Abstract.** In the forest wards in Iasi County, several management units are differentiated: regular forest, gardening forest, poplar and willow crops selected for furniture, poplar and willow crops selected for pulp and timber, forests for cutting, poplar and willow pastures, forest with cynegetic interest, forests with special protection, reserves for nature protection, seed reserves. Within the management process a series of technical works with planning role have been realized:

- forest technical works (concrete landmarks, planning signs, delimitation of forest from the agricultural lands, hedges;
- hydro-technical works (drainage canals in the areas with exceeding humidity).

Due to the great diversity of the forest fund, the goals of forest planning require the application of the forest regime, consisting in the regeneration from seed and reaching advanced age, involving certain treatments as well.

### **Territorial distribution of the forests**

According to article 1 of the Forest Code, national forest fund includes the forests, the lands destined to forestation, the lands with crops, production or administrative forest use, the ponds, stream riverbeds, as well as non-productive lands included in the forest planning, under the conditions of the law, irrespective of the property nature.

According to the property nature, the national forest fund is made up of public property forests (belonging to the state and the territorial administrative units) and private property forests (physical or juridical persons) and they represent a national asset.

Besides these, there is forest vegetation outside the forest fund, and they are administrated by other institutions. The fields covered with forest vegetation

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with an area exceeding 0.25 hectares, included in the national forest fund, are called forests.

Tab. 1 - The state of the forest fund in Iasi County

	MU	1989	1990	1995	1996	1997	1998
Area of the total forest fund	Thousands hectares	97,6	97,2	96,8	96,8	96,9	96,6
Area of the forests, of which:	Thousands hectares	94,3	94,1	95,0	95,0	94,7	94,1
-coniferous	Thousands hectares	3,8	3,7	3,4	3,4	3,4	3,4
-deciduous	Thousands hectares	90,5	90,4	91,6	91,6	91,3	90,7
Reforestation and forestation	hectares	885	650	189	160	157	165

(Statistic Yearbook of Iasi County, 1999).

By analyzing the situation of the forest fund presented in the “Statistic Yearbook of Iasi County”, elaborated in 1999, for a period of 10 years, we can notice that the area covered by the forest fund diminished.

In 2006 the forest fund occupied a area of 75683 hectares, of which:

- 73504 hectares over the territory of Iasi County;
- 2179 hectares on the territory of Vaslui County.

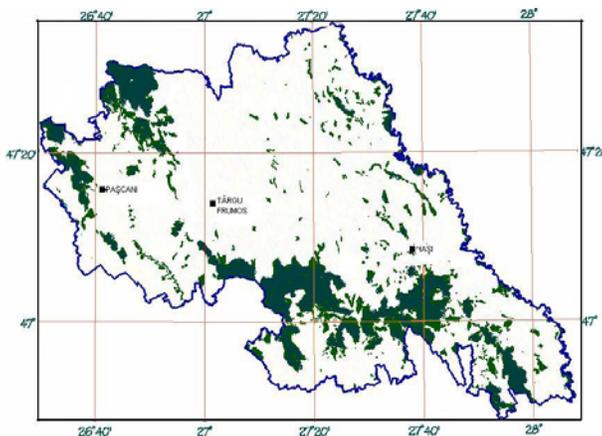


Fig.1 - Distribution of forests on the territory of Iasi County

### 1. Management of the forests in Iași County

The practical way of managing the forest fund is regulated by the forest planning. This represents the basis of the forest survey and of the state property title, and it establishes the goals of the management and the necessary measures to be taken, in accordance with the ecological and social-economic objectives.

The forest planning is elaborated by the Institute of Research and Forest Planning and by other certified units, on forest wards and production units, over periods of 10 years, and they are approved by the central public authority which is in charge with forestry.

For the Iași County, a number of 8 forest planning is elaborated, corresponding to the 8 forest wards (Fig.2). Each ward is subordinated to Iași Forest Office, with its headquarters in Iași. The main objective of this institution is represented by the sustainable and unitary management, in accordance with the norms and stipulations of the forest regime. The Iași Forest Office is a unit of the National Forest Office – Romsilva.

**The Forest Ward of Iași** is situated in the north-eastern part of the county, administrating the forests in the south-eastern part of the Moldavian Plain, more specifically, the inferior plain of the Jijia River and the Prut River floodplain. The area of the administrated forest fund is 8777.2 hectares. This area includes the retroceded forests according to the 18/1991 Law, covering 218 hectares. The forestation degree is under 10%, and this gives a clear agricultural character to the area.

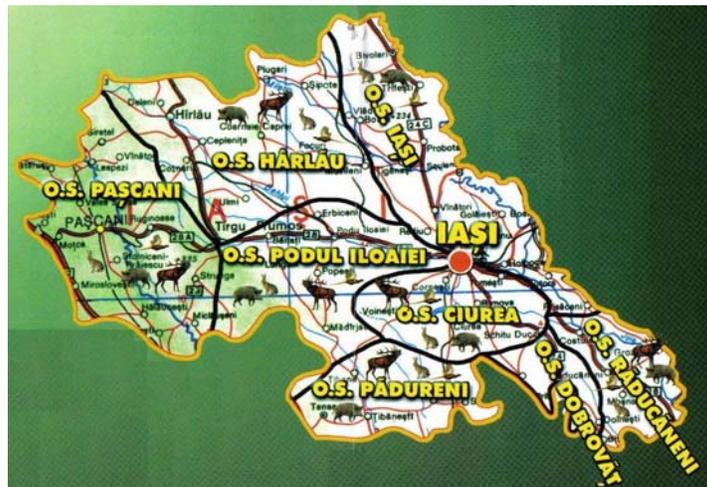


Fig. 2 - The territorial distribution of the forest wards in Iași County

The ward is divided into six production units presented in the table no. 2.

Tab.2 - The distribution of the forest fund of Forest Ward of Iasi on production units

No	Production unit	The communes in which the forests are situated	Distance to the ward (km)	Distance to the Railway Station of Iași
I	Copou	Aroneanu, Iași, Lețcani, Miroslava, Popricani, Rediu	5	7
II	Jijia	Aroneanu, Bosia, Golăiești, Holboca, Movileni, Popricani, Victoria	15	17
III	Roșcani	Andrieșeni, Bivolari, Probota, Trifești, Țigănași, Vlădeni	30	32
IV	Bivolari	Bivolari, Popricani, Probota, Trifești, Victoria	40	42
V	Medeleni	Bosia, Golăiești, Victoria	15	17
VI	Prisecani	Comarna, Prisecani, Tomești, Tutora	25	23

The distribution of the surface of the forest fund over the territories of the communes is presented below:

- less than 100 hectares: Lețcani, Comarna, Aroneanu;
- 100 -500 hectares: Movileni, Țigănași, Holboca, Tomești, Tutora, Bosia, Rediu, Bivolari, Vlădeni;
- 500 -1000 hectares: Popricani, city of Iași, Probota, Prisecani, Golăiești, Andrieșeni;
- 1000 -1100 hectares: Victoria, Trifești.

The communes with the largest areas covered with forests are Trifești (1094 hectares) and Victoria (100 hectares), representing 24% of the total forest fund.

Iasi municipality has a surface of 644.3 ha, representing 7% of the total forest fund of the ward.

The smallest areas covered with forests are registered in: Lețcani (22.9 hectares) and Comarna (27.3 hectares), Aroneanu (60 hectares).

On the territory of the Forest Ward of Iasi 7 forest formations have been identified, determined by the past management and by the specific stational conditions, presented on production units in the following table.

The territorial distribution of these formations is not strictly limited. A certain grouping can be noticed:

- hill forests are located mainly in the western hilly units;
- willow and poplar pastures are found in the three units in the Prut river flood plain.

Tab. 3 - The distribution of the forest formation on production units

Forest formation Name	Surface on production units						Total	
	I	II	III	IV	V	VI	hectares	%
Hill forests with durmast	131		179.1				310.1	4
Hill and plain forests with oak tree	935.2	1023.4	1117.1				3075.7	37
Floodplain forests				72.3	170.8	277.5	520.6	6
Forest-steppe forests in the hilly region	570.6	458.1	916.1	26.1		230.2	2201.1	26
Pure poplar plots containing white poplar					3.7		3.7	
Poplar plots containing white and black poplar				935.7	292.7	325.2	1553.6	19
Pure willow pots	19.1	11.5		237.4	243.7	192.2	703.9	8
Ward Total	1655.9	1493	2212.3	1271.5	710.9	1025.1	8368.7	100

**The oak tree hill forests are predominant**, followed by the forest-steppe forests and the mixed poplar plots, the durmast having a smaller distribution on the territory of the ward. As main **characteristics** of this territory we can mention the **lack of cerris and Hungarian oak**, as well as the very reduced percentage of beech (almost inexistent), as well as the predominance of the young tree plots (83% of the tree plots are under 40 years).

Many of the forests have been deforested during time due to the extending of the wine and tree crops, and that is why the forest trunks have variable areas. The largest are Perieni-Roșcani and Jijia Slope from Coadă Stâncii to Popricani. These forests do not have a character of forest massifs, as they are interrupted by crop lands and human settlements. In the floodplain areas, the forests make a stripe along the Prut River.

## 2. Forest Ward of Ciurea

It has its headquarters in the commune with the same name. The forests of the ward are situated in the Bahlui river basin and in the upper part of the Barlad river basin.

The area administrated by this ward is divided into 5 production units.

Tab. 4 - The distribution of the forest fund of Forest Ward of Ciurea on production units

No.	Production unit	Surface (hectares)	The communes in which the forests are situated	Distance to the ward (km)	Distance to the Railway Station of Iași
I	Tomești	4019.4	Tomești, Schitul Duca, Iași, Comarna, Costuleni, Bârnova	22	23
II	Poieni	2684.5	Dobrovăț, Schitul Duca, Iași, Bârnova	26	27
III	Ciurea	2589.6	Ciurea, Mogoșești, Bârnova, Iași, Mironeasa	8	9
IV	Voinești	4974.8	Voinești, Horlești, Dumești, Lețcani, Mogoșești, Țibana	45	46
V	Cornești	767.5	Miroslava, Iași	25	26

According to the last forest planning of the ward realized in 1998, the forests and the fields belonging to the management of this ward cover an area of 15035.8 ha.

From the point of view of the functional zoning the following surfaces are noticed:

- forests situated on rocks, on gravels - 0.5 hectares;
- forest plantations executed on degraded lands - 440.9 hectares;

- forests situated on lands with lithological composition vulnerable to erosion and landslides - 377.8 hectares;
- forests around the municipality of Iasi, with recreational function - 2523.2 hectares;
- forests with aesthetic interest, around the cultural, archaeological and historical monuments- 302.6 hectares;
- forest stripes along the roads with tourist role - 1819.3 hectares;
- forests designated to the preservation and intensive development of the game - 868.7 ha;
- secular forests with special value, the forest reserves of Poieni, Pietrosu, Uricani -324.6 hectares;
- dendrological parks and tree plots -10.5 hectares.

Tab. 5 - The state of the ward surface on different land use categories

Production unit	1.Forests and fields to be forested and re-forested (hectares)	2.Fields used for the management of the forests (hectares)	3.Nonproductive fields (hectares)	4.Fields temporarily drawn out of the forest fund (hectares)	Total (hectares)
I.Tomești	3893.5	43.5	22.1	60.3	4019.4
II.Poieni	2595.3	76.1	4.3	8.8	2684.5
III.Ciurea	2528.7	46.9	10.5	3.5	2589.6
IV.Voinești	4734.6	36.3	0.8	203.1	4974.8
V.Cornești	688.3	68.4	-	10.8	767.5
Total	14440.4	271.2	37.7	286.5	15035.8

Within the forest ward of Ciurea the following forest formation are found:

- pure hill beech plots -975.2 hectares -6%;
- mixed beech plots -227,5 hectares -2%;
- pure durmast plots -1191.4 hectares -8%;
- durmast – beech plots -56.4 hectares -0,3%;
- hill forests with durmast -7466 hectares -50%;
- hill forests with durmast and oak -3172.5 hectares -21%;
- pure oak plots -355.9 hectares -2%;
- hill oak plots - forests - 836 hectares -6%;

- flood plain forests -174.7 hectares -1%.

As compared to the forest ward of Iași, here the durmast covers half of the forest surface in hill forests and 21% in hill forests in which it is mixed with oak tree. Due to the low density of the hydrographical network, but also to the agricultural use of the flood plains, the flood plain forests have the lowest frequency.

#### **Forest management measures**

The forest planning has the role to establish the forest management way, by realizing a dynamic ecological balance which ensures, to the same extent, the forest protection and a raw material production in maximum quantities and qualities, under the present stational conditions. Under this context, the thorough knowledge of the functional role of the forest is necessary.

For each ward, mapping of the tree-plots has been done, and the functional groups of each forest have been established.

**Forests have multiple functions:** ecological, economic and social. According to the main functions, the forest Code stipulates that the forests are divided into two groups: group I – forests with special protection functions and group II – forests with production and protection functions.

Forests in group I, include several functional sub-groups:

- forests with water protection functions;
- forests with soil protection functions;
- forests with protection function against the climatic and industrial dangerous factors;
- forests with recreational functions;
- forests with scientific interest, for the protection of the forest geno-fund and eco-fund.

**This functional zoning has been reviewed** and correlated with the new forest policies and strategies, and this fact caused the continuous increase of the surfaces of the forests with main protection role.

In the forest wards in Iasi County, several **management units** are differentiated: regular forest, gardening forest, poplar and willow crops selected for furniture, poplar and willow crops selected for pulp and timber, forests for cutting, poplar and willow pastures, forest with cynegetic interest, forests with special protection, reserves for nature protection, seed reserves.

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