

FOREST STANDS IN THE NATURAL PROTECTED AREA “FOREST HINCESTI”

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Summary. *This article presents the stands diversity of protected area “Forest Hincesti”. In this protected area exists three categories of forest stands: natural fundamental, derived and artificial.*

Introduction

The natural protected area „Forest Hincesti” is located in the proximity of Lapusna and Mereseni village (district Hincesti, Hincesti forest agency) and has next geographical coordinates:

1. East longitude: 28°34'09”, latitude: 46°49'24”, altitude: 245m; 2. East longitude: 28°33'12”, latitude: 46°48'33”, altitude: 178m; 3. East longitude: 28°30'33”, latitude: 46°49'24”, altitude: 171m;

4. East longitude: 28°27'59”, latitude: 46°49'23” altitude: 290m; 5. East longitude: 28°26'51”, latitude: 46°51'08”; 6. East longitude: 28°28'39”, latitude: 46°52'13”. Mereseni forestry department includes plots 10-14, 17-22, 25; subplots A,B,C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, Y; 26-32; 35-40; 42-47; 48, subplots A,B,C, D, E, F, G, H, I, J, K, L, F2, R1; 50-54. Loganesti forestry department plots 47, subplots A,B,C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, X, Y1; 55; 56. The studied natural protected area covers an area of 4499 ha. According to the law of the State Natural Protected Areas Fund (1998), natural protected area „Hincesti forest” is assigned to the landscape reserves category [2]. The research was conducted with the aim to make an assessment of the „Forest Hincesti” natural protected area.

Materials and methods

Forest stands analysis was performed based on the management data from Mereseni and Loganesti forestry department [3, 4]. The assessment of forest protected area has been carried out according to the methodology described by Gh. Postolache [1]. Three categories of forest stands have been assessed: fundamental, natural and artificial derived.

Results and discussions

The undertaken analysis has revealed the predominance of fundamental

natural stands (60%) with small proportion (16%) of derived stands and artificial stands (24%), compound mostly of acacia (Image 1).

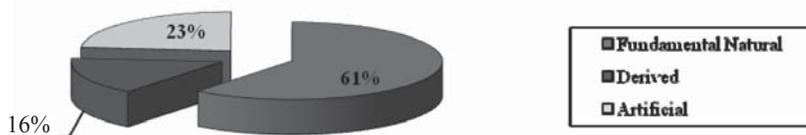


Image 1. Tree stands in natural protected area “Forest Hincesti”

Fundamental natural stands are found in 145 subplots, with a total area of 2510.3 ha. According to productivity level: 57 of subplots are fundamental natural stands of medium productivity; 79 subplots are fundamental and natural stands of lower productivity and 8 subplots are underproductive fundamental natural stands.

Forest fundamental natural stands of pubescent oak (*Quercus pubescens*) are present in 25 subplots with total area of 279 ha (10F; 21G; 51A; 53E; 42B; 11H; 45B; 50F; 31C; 37G; 44A; 21T; 31G; 31L; 31Q; 31B; 22M; 32A; 35D; 31A; 29C; 52D; 38B; 38M; 55G), of which 147,1 ha (53%) are fundamental natural stands of medium productivity; 100 ha (36%) are fundamental and natural stands of lower productivity and 31,5 ha (11%) are underproductive fundamental natural stands. In subplots 46B, 21B, 43J, 32P, 36D, 47D, 56D the pubescent oak is more than 50%. Besides pubescent oak other species like pedunculate oak (*Quercus robur*), sessile oak (*Quercus petraea*), linden (*Tilia cordata*, *T. tomentosa*), ash (*Fraxinus excelsior*) could be found. Forest stands are 35-75 years old.

Forest fundamental natural stands of pedunculate oak (*Quercus robur*) are of medium and lower productivity. The pure fundamental natural stands (10ST) are of lower productivity and have been recorded in 26 subplots (26E; 22W; 44F; 43S; 47N; 47P; 21R; 26O; 51L; 53O; 53V; 52B; 52M; 10C; 38E; 27A; 17E; 19C; 19D; 25I; 27E; 27O; 28H; 13F; 11B; 36B) with an area of 264,3 ha. and in 916 ha of trees have in composition species as oak, maple, linden, walnut, maple, cherry, ash but the participation of these species is very small. Stand age is between 35-90 years.

Forest fundamental natural stands of sessile oak (*Quercus petraea*) are of medium, lower and underproductive productivity and are present in subplots 48A, 14F, 38H, 14A, 14S, 50C, 12B, 35A, 22A, 26J, 40N, 43M, 28P, 47C, 47S. Pure fundamental natural stands of sessile oak (10GO) occupies an area of 175.5 ha and 750.1 ha include sessile oak trees that

have in composition species as oaks, ash, cherry, maple and other diversity, but the participation of these species is insignificant (13B; 54S; 54V; 28L; 42A; 40C; 40G; 39E; 40A; 46E; 13C; 45T; 37O; 28C; 46J; 47C; 39A; 13D; 32F; 32B; 43F; 13H; 13A; 56C; 55K; 55B; 56E; 56F). Stand age is between 30-80 years.

Forest derived stands were registered next species like oak, ash, maple, oak and elm. Derived stands have a total area of 652.4 ha which is 16% of the forest trees.

Forest total derived stands are present next forest tree species like ash, maple, oak, elm and cover a total area of 269.9 ha in next 41 subplots ((27Q; 29B; 51G; 22U; 22V; 51D; 51E; 45E; 21J; 29H; 37J; 37F; 10K; 40B; 17L; 32Q; 18K; 27S; 31I; 18C; 18M; 19A; 21D; 28J; 28K; 35C; 43A; 28M; 21S; 17A; 28S; 21J; 31D; 21C; 32C; 39J; 22T; 29O; 45V; 22S; 47M).

Forests partially derived have been registered in 27 subplots with a total area of 383.2 ha. Partial derivatives forest stands are consist of evergreen oak, oak, ash, lime.

Forest artificial stands in protected area "Forest Hincesti" were planted on an area of 975,8 ha, (24%). Productivity of these forests is middle and lower. Artificial forest stands have been established both from autochthonous forest tree species (oak, sessile oak, ash, willow, cherry) and allochthonous forest species (pine, walnut, locust, maple, spruce, chestnut, elm). Pure artificial forest stands were planted in 216 subplots on an area of 519.4 ha (Table 1).

Forest artificial stands of Pedunculate oak (*Quercus robur*). Pedunculate oak stands were planted on an area of 201,9 ha. Pure Pedunculate oak forest stands have a small area of 25,5 ha, but mixed stands with maple, walnut, ash, elm, maple, acacia, glade, pine cover an area of 176,4 ha. Pure Pedunculate oak forest stands were created with different participation, of sycamore maple in composition (8ST2PA; 5ST5PA; 3ST7PA; 6ST4PA; 6ST3PA1DT; 4ST6PA; 5ST3PA2ULC; 3ST6PA1NU, 7ST3PA; 3ST4PA3SC, 5ST1PA2ULC2FR; 4ST2FR4PA; 7ST2PA1AR; 6ST2PA2FR), with ash participation (7ST3FR; 7ST2FR1PA, 6ST4FR, 9ST1FR; 8ST2FR; 4ST2FR3NU1PA), with walnut participation (5ST2NU3FR; 8ST2NU; 9ST1NU; 5ST4NU1FR; 5ST3NU1FR1TE). Have been also created forest stands with participation of maple (8ST2AR; 9ST1AR), pine (6ST3PI1SC) and elm (6ST4ULC).

Table 1

Total area of planted stands in natural area “ Hincesti forest”

Species	Type of stands					
	Pure		Mixed		Total	
	Nr.of subplots	Area, ha	Nr.of subplots	Area, ha	Nr.of subplots	Area, ha
Pedunculate oak	17	25,5	83	176,4	100	201,9
Sessile oak	5	4,7	10	69,8	15	74,5
Ash	81	116,7	35	76	116	192,7
Willow	1	0,9	-	-	1	-
Cherry	-	-	1	3,1	1	3,1
Pine	7	25,2	2	1,9	9	27,1
Walnut	9	28,8	4	9,3	13	38,1
Acacia	82	304,8	35	92,8	117	397,6
Maple	3	1,1	6	16,4	9	17,5
Chestnut	1	3,1	-	-	1	3,1
Glade	6	4,8	6	5,4	12	10,2
Elm	1	1,2	2	3	3	4,2
Spruce	3	2,6	1	2,3	4	4,9
Total	216	519,4	185	456,4	401	975,8

Artificial stands of ash (*Fraxinus excelsior*) from the protected area „Hincesti forest” have been created on an area of 192,7 ha in 116 subplots. Hence 116,7 ha of pure ash stands (10FR) and 75 mixed stands have been created. We recorded stands with oak participation (9FR1ST; 8FR2ST), acacia (9FR1SC; 6FR4SC; 7FR3SC). In some subplots were created ash stands with Honey locust and sycamore maple.

Artificial stands of acacia (*Robinia pseudoacacia*) were created on an area of 397,6 ha. It is worth to mention that the planted forest stands with acacia are of less productivity. One of the explanations of this situation could be that acacia forest stands have not been planted in suitable forest station being planted in areas suitable for pedunculate oaks and sessile oak. Pure acacia stands were planted on an area of 304,4 ha in 82 subplots and have in composition oak (9SC1ST; 7SC2ST1FR), ash (8SC2FR; 9SC1FR; 7SC3FR; 5SC5FR), elm (7SC3ULC), walnut (7SC3NU) and Honey locust (6SC4GL; 9SC1GL; 3SC2GL3PA2AR; 8SC1GL1ST) .

Artificial stands of sessile oak (*Quercus petraea*) have been planted on an area of 74,5 ha. The area of pure sessile oak plantation is just 4,7 ha, in 5 subplots and mix sessile oak was planted with sycamore maple on an area

of 20,9 ha (6GO4PA; 8GO2PA; 4GO6PA; 3GO7PA), with pedunculate oak on an area of 44,3 ha (4GO5ST1DT).

Artificial plantation of walnut (*Junglans regia*) have been planted on an area of 38,1 ha. The pure stands (10NU) constitute 28,8 ha, in mix with ash 0,6 ha (6NU4FR), with hornbeam and sycamore maple 8,7 ha (4NU3CA3PA; 7NU2PA1AR; 4NU4PA2AR).

Artificial plantation of pine (*Pinus nigra*) was planted on area of 27,1 ha, of which pure pine plantation represents 25,2 ha and the mix with sycamore maple 1,9 ha (8PI2PA; 5PI5PA).

Artificial plantation of sycamore maple (*Acer platanoides*) were planted on area of 17,5 ha, from which pure stands is 1,1 ha and mix stands with walnut (7PA3NU; 6PA3NU1DT; 5PA4NU1FR), oak and acacia (8PA1ST1SC; 7PA3SC) are 16,4 ha.

Artificial plantation of spruce (*Picea abies*) have been planted on an area of 4,9 ha. In one subplot is spruce mixed with sycamore maple (5MO5PA) covering 2,3 ha and in 3 subplots is pure spruce plantation (10MO), 2,6 ha.

Artificial plantation of Honey locust (*Gledicia triacantus*) covers an area of 10,2 ha. Pure stands (10GL) covers 4,8 ha. Mix stands of honey locust with acacia (9GL1SC; 7GL2SC1FR; 8GL2SC; 7GL3SC) and sycamore maple (8GL2PA) are covering an area of 5,4 ha.

Also plantations of pure acacia (10SA) (0,9 ha) and chestnut (10CA) (3,1 ha) have been created. Mixed plantation of cherry (3,1 ha) (3CI3SC2FR1NU1AR) and elm (4,2 ha) (7ULC2ST1FR; 10ULC; 7ULC3SC) have been created.

From total area around 155.8 hectares serve as for the administrative needs.

Conclusions

In the protected area “Hincesti Forest” exists three categories of forest stands: natural fundamental, derived and artificial. The fundamental natural stands were highlighted in 145 subplots with a total area of 2510,3 ha which is 60% of protected area stands. Derived stands are present in 68 subplots with a total area of 652,4 ha which is 16% of area. Artificial stands were planted on an area of 519,4 ha in 216 subplots.

Condition of many stands from protected area “Forest Hincesti” is unsatisfactory, especially those trees that were created in improper area.

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GENUL *RANUNCULUS* L. (*RANUNCULACEAE* ADANS.) ÎN FLORA BASARABIEI

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Grădina Botanică (I) a AŞ M

Summary. *The paper presents the critical processing's results concerning the *Ranunculus* L. (*Ranunculaceae* Adans.) genus for Bessarabia's flora which includes 20 species. The key date for determining the species, a brief taxonomical, bioecological and chorological characteristics of the species were given.*

Introducere

Genul *Ranunculus* L. – *Boglar* include circa 600 specii, răspândite vast în flora Globului, începând cu tundra arctică până în pustiu, cu excepția regiunilor tropicale. Cuprinde plante erbacee anuale sau perene, decorative, unele medicinale, iar o mare parte – toxice. Se întâlnesc în cele mai diverse condiții ecotopologice palustre, acvatică, silvice, praticole stepice și a. Totodată majoritatea reprezentanților genului își păstrează caracterul mezofil, chiar dacă se întâlnesc în regiunile de pustiu.

Materiale și metode

Material pentru cercetare, privitor la genul *Ranunculus*, au servit atât exsiccatele de plante existente în Herbarele Grădinii Botanice (I) și a Universității de Stat din Moldova, cât și literatura de specialitate. Prelucrarea critică a taxonilor specifici a fost efectuată conform metodei comparativ-morfologice [9]. Nomenclatura științifică latină și în limba maternă a taxonilor a fost revizuită și selectată conform lucrărilor recent publicate [11, 5, 2]. Particularitățile bioecologice ale speciilor evidențiate au fost întocmite pe baza literaturii [4]. Districtele geobotanice ale Basarabiei și teritoriilor adiacente sunt indicate conform monografiei „Flora Basarabiei”[3].