



()
()
1202, -

Содржина

1.	.....	3
2.	,	4
3.	.....	7
a.	.....	7
b.	.....	9
4.	.....	12
a.	,	12
b.	.....	13
	.....	13
	.....	13
	.....	13
	.....	14
	.....	14
	-	17
5.	.....	34
a.	.....	34
b.	.....	34
c.	.....	35
d.	.....	36
e.	.....	36
f.	(.....).....	37
6.	.....	39
7.	.....	59
8.	.....	60

1.

P1202 (-).

2,

Ranunculus flammula,

” “

()

2. ,

,
.

76-

94 (XI) (. 53/05, 81/05 24/07, 159/08, 83/09, 48/10, 124/10, 51/11, 123/12, 93/13, 187/13 and 42/14).

77

”

“ (

8174/2005).

(

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. 36/12).

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() 4.01:

” “ ”

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4.01,1999,

, 2013);

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(4.11, 2006);

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(4.04, 2001);

-

(2013 .).

2013 . (

2002 .).

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/) 10% 1.0 ha,
() 2 m in situ (
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,
,
() 4.50
:
()

()

/ 4.01,

()

Infoshop.

3.

P1202 (—).

P1202

, P1202

a.

. 93%

1949

” “



1.200 m.

(1.318), 92 km².

Слика 1: Географска положба на о. Маврово - Ростуша

6 km.

1202

2 - ,
(2).



2:



Слика 3: Букова шума



Слика 4: Почеток на делницата

b.



5:

- -
 -
 - +
 -
- 50(60) km/h
- $2 \cdot 3,25 + b \text{ m} = 6,50 + b$
- $2 \cdot 1,0 \text{ m}$
- $2 \cdot (0,50 + 0,50 - 1,0) \text{ m}$
- $q_{\min} = 2,5\%, q_{\max} = 5(7)\%$

1,0m, 0,5m. () , .

- , RB 200. 3mm ;

- 22 4-11cm 10cm¹.

- 22s

6 cm; -11/16s

- 4cm;

- RB 200.

- ;

- ;

- ;

- >60 mm 80 MPa.

- / -22s

- 4 cm; -11/16s

- 4cm;

- RB 200.

- , /

(,).

(, . 53/05,
81/05, 24/07, 159/08, 83/09, 48/10, 124/10, 51/11,123/12, 93/13, 187/13, 42/14),
A - IPPC²

A – IPPC

A – IPPC

A – IPPC.

” “

()

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(, ,)

/

² IPPC – Integrated Pollution Prevention and Control (ГИМ Македонија АД Скопје

4.

a.

(CaD1,2). : (FD1,3)

,

:

(d), (pr), (s) : (al),

25l/s.

-

0,1 0,4l/s.

f<10-3m/s.

- ;

: Rendzic Leptosols, Haplic; Cambisol, Leptic; Cambisol, Dystric; Umbric Regosol (Umbrisol), Haplic; and Regosol.

b.

5.7⁰ MCS.

2,2⁰C;

7,1⁰C;

(16,3⁰C);

1103mm.

100mm,

50mm.

166

30 110

: - 91‰, - 147‰, - 219‰, - 104‰, - 47‰,
-55‰, - 122‰ - 145‰.

(),

(2).

850 m.

на територијата на некогашното Мавровско поле.

1,202 . . . ,

1370

акумулира до 357 милиони m³ вода. Езерото достигнува

максимална длабочина до 50 m, додека просечната длабочина му изнесува 26 m, долго е 10 km, а широко 3 до 5 km.

)

< 10µm (PM₁₀).

12µg/m³,

10 µg/m³.

24

(50 µg/m³).

10

, SO₂, CO NO_x,

10

1.

II

55dB ().

” “
50dB ().

60dB (A).

68,1dB (A),

66,1dB (A).

2.

(),

sp,

Fagus sp., Populus sp., Acer

Fagus sylvatica).

Ranunculus flammula,

” “ (6).

(, 2003).

” “ 3 .

,

—

” “ ,



6: () ()⁴

1000 , 38 , 35 .
12 (Dryopteris carthusiana,
Ranunculus flammula. Viola shariensis, Salix appendiculata, Salix silesiaca, Lotus uliginosus,
Epilobium nutans, Epilobium palustre, Cirsium tymphaeum, Cirsium grecescui, Gentiana

³ Melovski Lj, Matevski V. (2008): Development of criteria for the selection of wetland habitats for strict protection – case study of Bunec site in the National Park “Mavrovo”

⁴ Modified from Melovski Lj, Matevski V. (2008): Development of criteria for the selection of wetland habitats for strict protection – case study of Bunec site in the National Park “Mavrovo”

57 : *Abies borisii*

regis, *Acer obtusatum*, *Acer pseudoplatanus*, *Actaea spicata*, *Ajuga reptans*, *Anemone nemorosa*, *Aremonia agrimonoides*, *Asperula odorata*, *Asphodelus albus*, *Brachipodium sylvaticum*, *Campanula* sp., *Carex* sp., *Cerasus avium*, *Chamaecytisus austriacus*, *Chrysosplenium alternifolium*, *Cruciata glabra*, *Dactylis glomerata*, *Daphne mezereum*, *Dentaria bulbifera*, *Digitalis viridiflora*, *Euphobia amygdaloides*, *Fagus sylvatica*, *Fragaria vesca*, *Galeobdolon luteum*, *Galium* sp. , *Hordeum* sp. , *Juniperus communis*, *Lembotropis nigricans*, *Mycelia muralis*, *Neottia nidus – avis*, *Orthilia secunda*, *Poa nemorosa*, *Polygonatum* sp. , *Populus alba*, *Populus tremula*, *Potentilla micrantha*, *Primula vulgaris*, *Prunus cerasus*, *Pteridium aquilinum*, *Pulmonaria officinalis*, *Rosa* sp. , *Rubus canescens*, *Rubus idaeus*, *Rubus* sp., *Salix silesiaca*, *Sanicula europaea*, *Scilla bifolia*, *Simphytum tuberosum*, *Stelaria media*, *Trifolium* sp. , *Veronica officinalis*, *Vicia* sp. , *Viola odorata*, *Viola reichenbachiana*.

18 , 140 , 38 , 64 , 11 , 12 , 82 ,

Coleoptera

steindachneri, *Tapinopterus dochii*, *Cychrus semigranosus montenegrinus*, *Pterostichus brucki*, *Carabus croaticus ljubetensis*, *Aptinus meriditanus* *Omphreus gracilis*.

: *Salamandra salamandra* *Podarcis muralis*.

: *Buteo buteo*, *Columba palumbus*, *Strix aluco*, *Caprimulgus europaeus*, *Erithacus rubecula*, *Turdus merula*, *Turdus viscivorus*, *Certhia familiaris*, *Garrulus glandarius*, *Fringilla coelebs*, *Pyrrhula pyrrhula*

: *Aegithalos caudatus* (European status: ETS-S), *Anas querquedula* (European status: SPEC-3; ETS-V; WBD-II/1; Bern-III; Bonn- II), *Anthus trivialis* (European status: ETS- S), *Ardea cinerea* (European Status: ETS-S), *Crex crex* (European Status: SPEC-1, ETS-V, WBD-I, Bern-II, COR- t), *Hirundo rustica* (European Status: SPEC-3; ETS-D; Bern-II), *Jynx torquilla* (European Status: SPEC-3; ETS- D; Bern-II), *Lullula arborea* (European Status: SPEC -2, ETS -V ;WBD- I; Bern -III; COR- t), *Nucifraga caryocatactes* (European Status: SPEC-S), *Passer montanus* (European Status: ETS-S), *Regulus ignicapillus* (European Status: SPEC-4; ETS-S; Bern-II; Bonn-II).

(Meles meles),
(Canis lupus),
(Apodemus sylvaticus

(Ursus arctos),
(Lynx lynx martinoi),
Apodemus flavicollis).

(Capreolus capreolus),
(Martes foina),

(Dama dama).

430 ha

15,11ha,

186

6

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5.

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!

: *Viola shariensis, Salix appendiculata, Salix silesiaca, Lotus uliginosus, Epilobium nutans, Epilobium palustre, Cirsium tymphaeum, Cirsium grecescui, Gentiana pneumonanthe. Cirsium grecescui*

Crex crex

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⁵ Ibid 2

R1202

P1202

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a)

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-

b)

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c)

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” “
, / ,
, ,

()

413) – 1202 (A2 (M4) –
 - 1202 (409) , 2235 (414)
 P415), – , 2238 (185,6 km

” “ 158.3 km 24.96 m /ha.
 ” -1“. 17.9 km
 4.1 m/ha.

42.8 km 5.8 m/ha, „ “ 43.4 km 8.8 m/ha „ “ 102.5 km 17.7
 m/ha. : ” “
 km 425.3
 12.23 m/ha.



:

15

1

15

4

11

○ ” ”
” ” ”
○ ” ”
” ” ”
○ ” ”
” ” ”
○ ” ”
” ” ”
○ ” ”
” ” ”
○ ” ”
” ” ”

2002

30

1990

1990

2

3

”

“

”

“

2

052 722

km²,

57.8%

(20.5%).

2009

34

(34.7%)

(44.7%).

79.8

2009

37

1999-2009

(

0-14 .)

(

65 .

)

22.8%

17.7%,,

9.8% 11.6%.

ГИМ Македонија АД Скопје

22

1999-2009 .

12.4% 1999 .

11.5% 2009 .

2009 .

0.4%

19 060 .

, 10 040 52.7%

68.6 73.5 ,

4.9 .

, , , .

(-

- 3)

4 478,

0.23%.

, , .

8.880 (

2004). 11,9 km²,

80 km². 42 36

(„ “), 14 .

4,776, 1,969 41,2%

, , .

2002 8.698

, 4.297 49,4% , 4.323 50,6% .

, , , .

, 2,288 26,3% 15 , 2,257

25,9%

(51.7%)

33.4%

. 7.4%

49%,

27%.

1:

								15 .	15-60 .	60 .	
1		45	33	149	81	68	40	92	17	31	
2		22	2	4	2	2	-	-	4	-	
3		9	5	31	13	18	13	18	-	5	
4		141	37	96	49	47	9	52	35	38	
5		13	1	5	3	2	3	2	-	-	
6		1	-	-	-	-	-	-	-	-	
7		270	183	750	357	393	176	468	106	164	
8		35	23	89	45	44	23	52	14	26	
9		56	41	185	92	93	61	110	14	56	
10		66	38	142	82	60	20	102	20	70	
11		139	120	625	308	317	196	373	56	11	
12		217	2	3	1	2	-	2	1	-	
13		16	10	20	10	10	-	7	13	-	
14		37	9	39	24	15	9	26	3	14	
15		540	352	1608	793	815	428	999	181	287	
16		13	1	8	4	4	6	2	-	1	
17		78	35	146	71	75	31	93	22	45	
18		-	-	-	-	-	-	-	-	-	
19		16	3	15	7	8	6	6	3	4	
20		209	3	6	4	2	2	3	1	2	
21		282	-	-	-	-	-	-	-	-	
22		336	54	167	78	89	31	102	34	75	
23		650	55	166	86	80	25	99	42	77	
24		13	2	7	3	4	1	2	4	1	
25		81	5	10	6	4	-	5	5	1	
26		35	20	121	59	62	31	78	12	29	
27		9	5	13	9	6	4	6	3	1	
28		23	14	33	17	16	-	16	17	3	
29		22	3	15	10	5	2	10	3	10	
30		96	77	315	167	148	99	184	32	621	
31		-	-	-	-	-	-	-	-	-	
32		256	200	872	429	443	225	546	101	240	
33		30	3	5	2	3	-	1	4	1	
34		-	-	-	-	-	-	-	-	-	
35		19	7	21	13	8	2	14	5	6	
36		497	414	2199	1104	1015	644	1306	169	299	
37		43	8	25	14	11	3	8	14	6	
38		-	-	-	-	-	-	-	-	-	
39		39	5	16	10	6	2	12	2	4	
40		299	185	765	331	434	196	451	118	128	
41		61	3	8	4	4	-	4	4	-	
42		-	-	-	-	-	-	-	-	-	
	42	4776	1969	8698	4297	4323	2288	5252	1077	2257	

1970 1990 .,

31% 17% 7,506 87% 50% 2.200 m² 5 km 100 100 163 44

2:

163	130	31	1	1

3:

163	8	/	26	/	1	12	44	16	26

4:

	199	14,6%	32.2%	51.2%	2%
	550	3,8%	23.1%	72.4%	0.7%

: (UNDP, 2004 .)

” “

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: 18 , 7 , 5 , 400 2,000 .

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- ” “ , -
- ” “ —
(430 ha
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8: ” “ — 0

- ” “ — ,
1568 . . .
- ” “ — ”
“
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- „ „ „ „ -
 „ - „ -
 , 30 . ,
 , 100
 - - ,
 - „ - 1857
 . 1957



9: .

- „ -
 , , ,
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 1350 . .
 , .
 16). (

5 km

(. 20/04).

31 42

12

“ 45

(38).

65

a.

b.

c.

d.

e.

), 20.04, 115/07, 18/11, 148/11 23/13)



10: " " "

XI , 1021 .

1020

, è



Picture 11: Galichka Wedding (Wedding in Galichnik)

1935

Olive Lodge

(Olive Lodge, 1935).

50-

XX

(1960: 95-195).
(12)

(28).

1932 Olive Lodge 50
16

()

1500 m

2

km

(1996:113;)

4 km

(1996:113,)

500 m

(1996:113;)

1953

„Mavros“ “

()

“ ” “

„ „ 1973

(1996:113;).

5- 7- ,

9-10-

, 14-15- ,

è

(2008: 9).

() (2008:23).

5.

a.

: SO₂, NO_x, CO, PM₁₀,

CO, PM₁₀,

: SO₂, NO_x,

b.

C.

(, ,)

è

d.

e.

60dB (A)

50dB (),

- :
- 103 dB (10m 75 dB);
 - 110 dB (10m 82 dB);
 - 96 dB (10m 68 dB);
 - 102 dB (10m 74 dB).

f. ()

- *Ranunculus flammula*.

, (Crex crex),
|

6.

(5)
5.

5:

		<ul style="list-style-type: none">• () , IPPC					IPPC
		<ul style="list-style-type: none">• ;•					

		<ul style="list-style-type: none"> • ; • ; • ; • ; 					
/		<ul style="list-style-type: none"> • (•); • ; 					

		<ul style="list-style-type: none"> • ; • (8-17) 					
		<ul style="list-style-type: none"> • • ; • ; 					

		• • • • ()				/	
		• • • • ()				/	

		<ul style="list-style-type: none"> • • • 					

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		’ ’ ” ” . .			.		

		• , , , . .					

		<ul style="list-style-type: none"> • <p>(:). , , .</p> <ul style="list-style-type: none"> • <ul style="list-style-type: none"> • <p> ,</p>					

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	(IPPC) A-							
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	-					N.A.		Supervision contractor

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7.

7:

<p>/</p> <p>() -</p>	<p>,</p> <p>,</p> <p>.</p> <p>:</p> <p>; ii)</p> <p>,</p> <p>; iii)</p> <p>.</p>
<p>()</p>	<p>,</p> <p>:</p> <p>:</p> <p>,</p> <p>,</p> <p>; ii) й</p> <p>,</p> <p>; iv)</p> <p>,</p> <p>; v)</p> <p>,</p> <p>; vi)</p> <p>; vii)</p> <p>; viii)</p> <p>.</p>
	<p>,</p> <p>,</p> <p>.</p> <p>(</p> <p>,</p> <p>)</p> <p>.</p> <p>()</p> <p>,</p>
	<p>()</p>

	()
()	

8.

1: PM₁₀

2: