

582.26/27+581.93/42+581.526.323.3+574.586/587

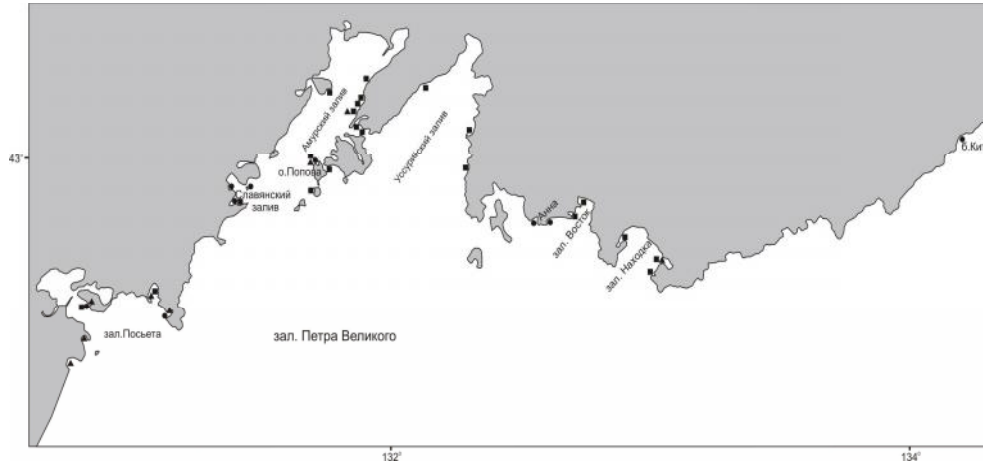
... , ...
- ... , 17, 690041 ,
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() 1979-
2007 .
145 -
(*Rhodophyta* – 73, *Heterokontophyta* – 36 *Chlorophyta* – 36). 9

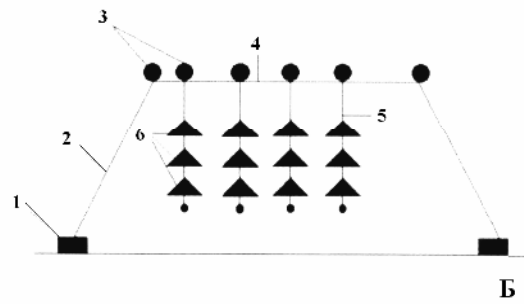
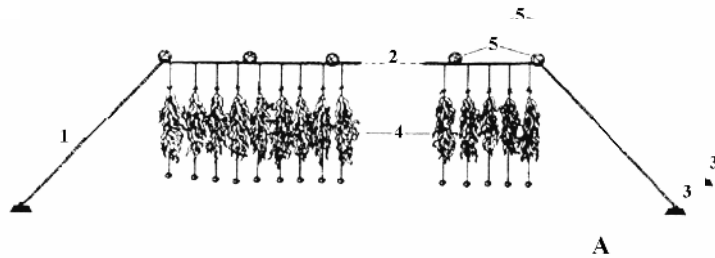
Rhodophyta

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,
Rhodophyta (, 1994;
 , 1996;). *Chlorophyta*
 ; *Heterokontophyta/Phaeophyceae*
 .
 48 60 % , – 11 30 %
 – 15 29 % (, 1980; , 1999, 2004;
 , 2006, 2008). –
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 (2000
), 1979-2007 . (. 1).
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 (, 2008; Guiry, Guiry, 2009; Skriptsova, Choi, 2009).
 (, 1996).
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) 1983 ., 2006 . 2007 .
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 1985 ., 1986-1990 . 1998-1999 . , . ,
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2. () : - I : 1 -
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 ; 5 - (, 1998); - II : 1 - ; 2 -
 ; 3 - ; 4 - ; 5 - ; 6 - ,
 (, 1997)

I (-I)
Saccharina japonica
 - (. 2,). -
 II (-II)
Mizuhopecten yessoensis
 (. 2,).

(866) .
 4-20 .
 2-9 (250 .)
 5-7 1982, 1987, 1990, 1994 . 1995 .
 (.)
 2-8 (60 .) -
 6-15 2001 .
 1,5-3 (181 .)
 - 7-15 . , 5-12
 17-19 . .
 (.) (55 .)
 3-6 - 4-7
 1998 . - , (173 .)
 , (147 .) 2-17
 7-16 - 1996-1999 . -
 , . ,
 (, 2004).
 : (-
), (, 1949). -
 , 45 %
 15
 30 % . 5-10 %

PRIMER v.5 (Clarke, Gorley, 2001).
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 (Clarke, Gorley, 2001).
 (,
 1999, 2004; , , 2006, 2008).

145

(*Rhodophyta* – 73, *Heterokontophyta/Phaeophyta* – 36 *Chlorophyta* – 36) ().

(, 2005)

(, 98 (54 %) *Rhodophyta*.

20 , 34 65 . *Rhodophyta*, 10 ,

18 38 . *Ceramiales* (11) *Rhodomelales* (10). *Chlorophyta* (24,5 %

) 4 , 7 13 . *Ulvaceae* (7) *Ulothrichaceae* (6

). *Phaeophyceae* *Heterokontophyta*, (21,5 %).

6 , 9 14 . *Chordariaceae* (4). *Gloiopeltis furcata*, *Callophyllis rhynchocarpa*, *Ptilota filicina*, *Polysiphonia morrowii* ; *Scytosiphon lomentaria*, *Costaria costata*, *Saccharina cichorioides*, *S. gurjanovae*, *S. japonica* ; *Monostroma grevillei*, *Ulva flexuosa*, *U. lactuca*, *U. linza* *Ulvaria splendens* .

I (*S. japonica*) 62 -

, . . 19 , 20 23 . -

(28)

(*Acrochaete flustrae*, *Pseudendoclonium submarinum* *Zygomitus reticulatus*) (*Ectocarpus fasciculatus*, *Compsomena* sp. *Chordaria gracilis*) (, 1990).

18 , 29 48 *Chlorophyta* (37 %).

5 , 9 17 . *Ulvaceae* *Ulothrichaceae* (5) *Ulvellaceae* (4). *Phaeophyceae* *Heterokontophyta* (33 %).

1						
	2	I	II	*	6	7
RHODOPHYTA						
<i>Acrochaetium humile</i> (Rosenv.) Børgesen	-	+	-	-	-	
<i>A. moniliforme</i> (Rosenv.) Børgesen	-	+	-	-	-	
<i>Acrochaetium</i> sp.	+	-	-	-	-	
<i>Ahnfeltiopsis flabelliformis</i> (Harv.) Masuda	-	-	+	-	-	
<i>Antithamnion densum</i> (Suhr) M.A. Howe	+	+	+	-	+	
<i>Antithamnion</i> sp.	+	-	-	-	-	
<i>Antithamnionella spirographidis</i> (Schiff.) E.M. Woll.	+	-	+	-	-	
<i>Bossiella cretacea</i> (Postels & Rupr.) Johans.	+	-	+	-	-	
<i>Branchioglossum nanum</i> Inagaki	+	-	-	-	+	
<i>Callophyllis rhynchocarpa</i> Rupr.	+	-	-	-	+	
<i>Campylaeophora crassa</i> (Okamura) Nakamura	-	-	-	+	-	
<i>Ceramium cimbricum</i> H.E. Petersen	+	+	+	-	+	
<i>C. deslongchampsii</i> Chauvin	+	-	-	-	+	
<i>C. japonicum</i> Okamura	+	-	-	-	-	
<i>C. kondoi</i> Yendo	+	+	+	-	-	
<i>Champia parvula</i> (C. Agardh) Harv.	+	-	-	-	-	
<i>Chondria dasyphylla</i> (Woodw.) C. Agardh	-	-	+	-	-	
<i>Chondrus armatus</i> (Harv.) Okamura	-	-	-	-	+	
<i>Ch. pinnulatus</i> (Harv.) Okamura	+	+	-	-	-	
<i>Chrysomenia wrightii</i> (Harv.) Yamada	+	-	-	-	-	
<i>Colaconema davesii</i> (Dillwyn) Steg.	+	+	+	-	-	
<i>Corallina pilulifera</i> Postels & Rupr.	+	-	+	-	-	
<i>Dasya sessilis</i> Yamada	+	-	+	-	-	
<i>Devaleraea microspora</i> (Rupr.) O.N. Selivan. & Klochk.	+	-	-	-	-	
<i>Dumontia contorta</i> (S.G. Gmel.) Rupr.	-	-	-	-	+	
<i>Erythrotrichia carnea</i> (Dillwyn) J. Agardh	-	-	-	-	+	
<i>Euthora cristata</i> (L.) J. Agardh	+	-	-	-	-	
<i>Fimbrifolium dichotomum</i> (Lepech.) G.I. Hansen	+	-	-	-	-	
<i>Gelidium elegans</i> Kütz.	+	-	-	-	-	
<i>G. pacificum</i> Okamura	+	-	-	-	-	
<i>G. vagum</i> Okamura	+	-	-	-	+	
<i>Gloiopeltis furcata</i> (Postels & Rupr.) J. Agardh	+	-	-	-	-	
<i>Gracilaria vermiculophylla</i> (Ohmi) Papenf.	+	-	-	-	+	
<i>Grateloupia turuturu</i> Yamada	+	-	-	-	-	
<i>Heterosiphonia japonica</i> Yendo	+	-	-	-	+	
<i>Hollenbergia subulata</i> (Harv.) E.M. Woll.	-	-	-	-	+	
<i>Laurencia nipponica</i> Yamada	+	-	-	-	+	

1	2	3	4	5	6	7
<i>Laurencia pinnata</i> Yamada	+	-	-	-	-	
<i>L. saitoi</i> Perest.	+	-	-	-	-	
<i>Lithophyllum</i> sp.	-	-		-	+	
<i>Lithothamnion phymatodeum</i> Foslie	-	-	-	-	+	
<i>Mastocarpus pacificus</i> (Kjellm.) Perest.	-	-	-	-	+	
<i>Masudaphycus irregulare</i> (Yamada) Lindstr.	-	-	-	-	+	
<i>Mazzaella japonica</i> (Mikami) Hommers.	+	-	-	-	+	
<i>M. parksii</i> (Setch. & N.L. Gardn.) J.R. Hughey, P.C. Silva & Hommers.	+	-	-	-	-	
<i>Neosiphonia japonica</i> (Harv.) M.S. Kim & I.K. Lee	+	+	+	+	+	
<i>N. yendoi</i> (Segi) M.S. Kim & I.K. Lee	+	+	+	-	-	
<i>Neoptilota asplenioides</i> (Esper) Kylin	-	-	-	+	-	
<i>Neorhodomela munita</i> (Perest.) Masuda	-	-	-	-	+	
<i>N. sachalinensis</i> (Masuda) Perest.	-	-	-	-	+	
<i>Nienburgiella angusta</i> (A. Zinova) Perest.	+	-		-	-	
<i>Palmaria stenogona</i> Perest.	+	+	+	-	+	
<i>Palmaria</i> sp.	+	-	-	-	-	
<i>Pneophyllum fragile</i> Kütz.	+	-	-	-	-	
<i>Polysiphonia morrowii</i> Harv.	+	+	+	+	+	
<i>Polysiphonia</i> sp.	+	-	-	-	-	
<i>Porphyra seriata</i> Kjellm.	-	+	-	-	-	
<i>Porphyra</i> sp.	-	+	-	-	-	
<i>Pterothamnion yezoense</i> (Inagaki) Ath nas. & Kraft	-	-	+	-	+	
<i>Ptilota filicina</i> J. Agardh	+	+	+	-	-	
<i>Rhodomela</i> sp.	+	-	-	-	-	
<i>Rhodophysema georgei</i> Batt.	-	-	-	-	+	
<i>Rh. odonthaliae</i> Masuda & M. Ohta	-	-	-	-	+	
<i>Scagelia pylaisaei</i> (Mont.) Wynne	-	+	-	-	-	
<i>S. pylaisaei</i> f. <i>subnuda</i> (Rupr.) Perest.	-	+	-	-	-	
<i>Sparlingia pertusa</i> (Postels & Rupr.) G.W. Saund., I.M. Strachan & Kraft	+	+	+	-	+	
<i>Stylonema alsidii</i> (Zanard.) K.M. Drew	+	+	+	-	+	
<i>Stylonema</i> sp.	+	-	-	-	-	
<i>Symphyocladia latiuscula</i> (Harv.) Yamada	+	-	-	-	-	
<i>S. marchantioides</i> (Harv.) Falkenb.	+	-	-	-	-	
<i>Tichocarpus crinitus</i> (S.G. Gmel.) Rupr.	+	+	-	-	+	
<i>Tokidaea corticata</i> (Tokida) Yoshida	-	-	+	-	+	
<i>T. hirta</i> Perest.	-	-	-	-	+	
HETEROKONTOPHYTA						
PHAEOPHYCEAE						
<i>Agarum clathratum</i> Dumort.	+	-	-	-	-	
<i>Analipus filiformis</i> (Rupr.) Papenf.	-	+	-	-	-	
<i>Botrytella reinboldii</i> (Reinke) Kornmann & Sahling	+	+	-	-	-	
<i>Chorda asiatica</i> Sasaki & Kawai	-	+	-	+	-	
<i>Chordaria flagelliformis</i> (O. Müll.) C. Agardh	-	+	-	+	-	

1	2	3	4	5	6	7
<i>Chordaria gracilis</i> Setch. & N.I. Gardn.	-	+	-	-	-	
<i>Coilodesme japonica</i> Yamada	-	-	+	-	-	
<i>Colpomenia peregrina</i> Sauv.	-	-	+	-	-	
<i>Compsomena</i> sp.	-	+	-	-	-	
<i>Costaria costata</i> (C. Agardh) D.A. Saund.	+	+	-	+	-	
<i>Desmarestia ligulata</i> (Stackh.) J.V. Lamour.	+	-	-	-	-	
<i>D. viridis</i> (O. Müll.) J.V. Lamour.	+	+	+	-	+	
<i>Ectocarpus fasciculatus</i> Harv.	-	+	-	-	-	
<i>E. siliculosus</i> (Dillwyn) Lyngb.	+	+	+	+	+	
<i>Ectocarpus</i> sp.	+	-	-	-	-	
<i>Halothrix lumbricalis</i> (Kütz.) Reinke	-	+	-	-	-	
<i>Hincksia ovata</i> (Kjellm.) P.C. Silva	-	-	+	-	-	
<i>Laminariocolax</i> sp.	+	-	-	-	-	
<i>Petalonia fascia</i> (O. Müll.) Kuntze	+	+	-	+	-	
<i>P. zosterifolia</i> (Reinke) Kuntze	-	-	+	-	-	
<i>Petalonia</i> sp.	+	-	-	-	-	
<i>Punctaria plantaginea</i> (Roth) Grev.	+	+	+	+	+	
<i>Pylaiella littoralis</i> (L.) Kjellm.	+	+	+	+	-	
<i>Ralfsia fungiformis</i> (Gunnerus) Setch. & N.L. Gardn.	-	+	-	-	-	
<i>Ralfsia</i> sp.	-	-	-	-	+	
<i>Saccharina cichorioides</i> (Miyabe) C.E. Lane, C. Mayes, Druehl & G.W. Saund.	+	+	+	+	-	
<i>S. gurjanovae</i> (A.D. Zinova) Selivan., Zhigadl. & G.I. Hansen	+	-	-	-	-	
<i>S. japonica</i> (Aresch.) C.E. Lane, C. Mayes, Druehl & G.W. Saund.	+	+	+	+	+	
<i>Saccharina</i> sp.	+	-	-	-	-	
<i>Sargassum miyabei</i> Yendo	+	-	+	-	-	
<i>S. pallidum</i> (Turner) C. Agardh	-	-	-	-	+	
<i>Scytosiphon lomentaria</i> (Lyngb.) Link	+	+	+	+	-	
<i>S. plumosa</i> Lyngb.	-	-	-	-	+	
<i>Sphacelaria rigidula</i> Kütz.	+	+	-	-	+	
<i>Sphacelaria</i> sp.	+	-	-	-	-	
<i>Sphaerotrichia divaricata</i> (C. Agardh) Kylin	+	+	-	-	-	
CHLOROPHYTA						
<i>Acrochaete flustrae</i> (Reinke) O'Kelly	-	+	-	-	-	
<i>A. ramosa</i> (N.L. Gardn.) O'Kelly	-	+	-	-	+	
<i>. viridis</i> (Reinke) R. Nielsen	-	+	-	-	-	
<i>Acrosiphonia saxatilis</i> (Rupr.) Vinogr.	+	+	-	-	-	
<i>Bryopsis hypnoides</i> J.V. Lamour.	+	+	-	-	+	
<i>B. plumosa</i> (Huds.) C. Agardh	-	-	+	-	-	
<i>Bryopsis</i> sp.	+	-	-	-	-	
<i>Chaetomorpha linum</i> (O.Müll.) Kütz.	-	+	-	+	+	
<i>Cladophora flexuosa</i> (O.Müll.) Kütz.	-	-	+	-	-	
<i>C. speciosa</i> Sakai	+	-	-	-	-	
<i>C. stimpsonii</i> Harv.	+	+	+	+	+	
<i>Codium fragile</i> (Suringar) Hariot	+	+	+	-	+	
<i>C. yezoense</i> (Tokida) Vinogr.	-	-	-	-	+	

1	2	3	4	5	6	7
<i>Entocladia polysiphoniae</i> Setch. & N.L. Gardn.	+	+	-	-	-	
<i>Kornmannia leptoderma</i> (Kjellm.) Bliding	-	+	-	-	-	
<i>Monostroma grevillei</i> (Thuret) Wittrock	+	+	-	-	+	
<i>Pseudoclonium submarinum</i> Wille	-	+	-	-	-	
<i>Pringsheimiella scutata</i> (Reinke) Marschew.	+	-	-	-	-	
<i>Rhizoclonium riparium</i> (Roth) Harv.	+	-	+	-	-	
<i>Rhizoclonium</i> sp.	+	-	-	-	-	
<i>Spongomorpha duriuscula</i> (Rupr.) F.S. Collins	+	+	-	-	+	
<i>Ulothrix flacca</i> (Dillwyn) Thuret	+	+	-	+	-	
<i>U. implexa</i> (Kütz.) Kütz.	+	+	+	-	-	
<i>Ulothrix</i> sp.	+	-	-	-	-	
<i>Ulva clathrata</i> (Roth) C. Agardh	+	+	+	-	+	
<i>U. flexuosa</i> Wulfen	+	+	-	-	-	
<i>U. intestinalis</i> L.	+	-	-	-	-	
<i>U. lactuca</i> L.	+	+	+	+	+	
<i>U. linza</i> L.	+	+	+	+	-	
<i>U. perestenkoae</i> Vinogr.	+	-	-	-	-	
<i>U. prolifera</i> O. Müll.	-	-	-	-	+	
<i>Ulvaria splendens</i> (Rupr.) Vinogr.	+	+	+	+	+	
<i>Urospora elongata</i> (Rosenv.) Hagem	+	-	-	-	-	
<i>U. enicilliformis</i> (Roth) Aresch.	+	+	-	-	-	
<i>Zygomitus reticulatus</i> Bornet & Flahault	-	+	-	-	-	

— , — , — * — (2005).

6 , 11 17 .
 . *Chordariaceae* 7 .
Rhodophyta (30 %).

2 , 7 , 9 14 .
Ceramiales (6) .

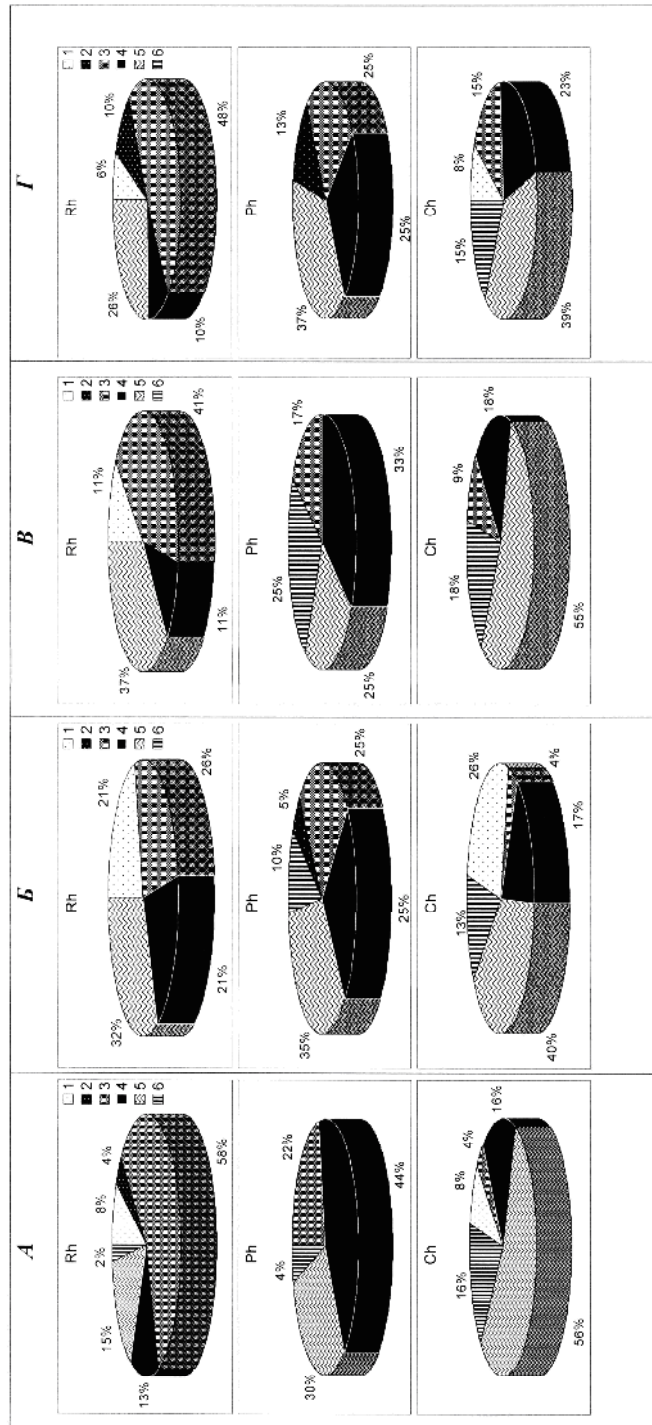
. *Porphyra seriata*, *Neosiphonia japonica*, *Polysiphonia morrowii* (); *Ectocarpus siliculosus*, *Halothrix lumbricalis*, *Chordaria* spp., *Petalonia fascia*, *Scytosiphon lomentaria*, *Sphaerotrichia divaricata*, *Costaria costata*, *Saccharina* spp. (); *Kornmannia leptoderma*, *Ulva lactuca* *U. splendens* () .

II (*M. yessoensis*) 45
 : 19 — , 13 — 13 — .
 16 , 21 37 .
 (40 %) *Rhodophyta*, 7

, 9 17 .
Ceramiales (7) *Rhodomelales* (4) .
 (30 %) *Phaeophyceae* *Heterokontophyta*.
 5 , 7 11 .

Scytosiphonaceae *Laminariaceae* (3).
Chlorophyta
 (30 %) 4 , 5 8 .
 . *Ulvaceae* (4). - -
 - *Neosiphonia japonica* , *Scytosiphon lomentaria*,
Saccharina cichorioides, *S. japonica* , *Ulva flexuosa* *U. lactuca*
 .
 52
 : 31 - , 8 - 11 - . *Rhodophyta*
 (*Rhodophysema odonthaliae* *Neorhodomela sachalinensis*)
Chlorophyta (*Acrochaete ramosa*)
 (, 2006). 20 , 31
 43 . *Rhodophyta* (60 %),
 10 , 17 27 .
Ceramiaceae (7) *Rhodomelaceae* (5).
Chlorophyta (25 %). 4
 , 7 c 10 . *Phaeophyceae* *Hetero-*
kontophyta (15 %)
 6 , 7 7 . *Sphacelariaceae* 2
 , - 1 . *Polysiphonia morrowii*
Palmaria stenogona ; *Saccharina japonica*, *Ralfsia* sp. ;
Codium fragile, *C. yezoense* *Ulvaria splendens* .
 ,
 .
 (*Ulva linza*, *U. flexuosa*, *U. lactuca*), -
 (*Saccharina cichorioides*, *S. japonica*).
 (*P. morrowii*
P. stenogona), (*Codium*
fragile, *C. yezoense* *Ulvaria splendens*).
 (54 %
).
 (60 %).
 (22 %) (15 %)
 .
 -I (37 %)
 ,
 (30 %). -II

(40 %);
(30 %).
(2005),
(50 %),
(20 %).
,
(, 1980; , 1999, 2004;).
Rhodophyta,
(, , 2006).
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-II
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(. 3,).
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, *Fucus distichus*,
,

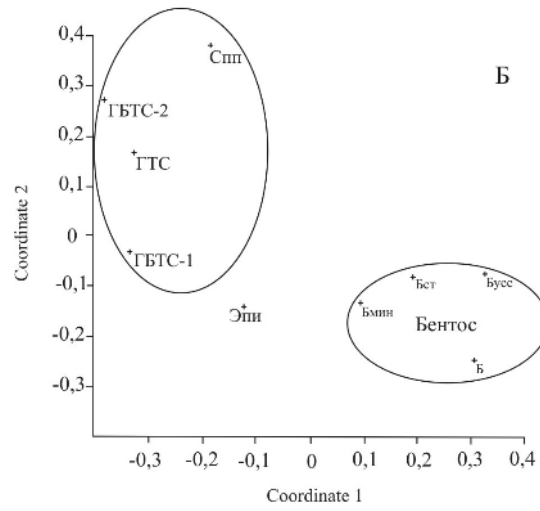
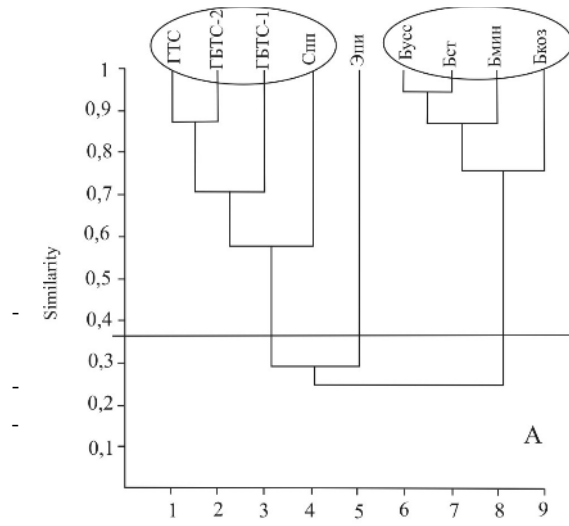


3. -I; - -II; - . Rh - , Ph - , Ch - .
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1986). (Kinne, 1971).
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145

(*Rhodophyta* – 73, *Heterokontophyta* – 36 *Chlorophyta* – 36).

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(98)

(45) –

II

2.

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3. ,

4. ,

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" 06-04-96034; -1 09-1-23-01 09-1-15-03; : "Climate variability and human activities in relation to Northeast Asia land-ocean interactions and their implications for coastal zone management" APN 2004-18-NMJ APN 2005-05-CMY; "Marine biodiversity of the coastal zones in the NW Pacific: status, regional threats, expected changes and conservation" ARCP 2007-12-NMY.

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MACROALGAE OF FOULING AND EPIZOOON IN SHALLOW WATERS OF SOUTHERN PRIMORYE (SEA OF JAPAN, RUSSIA)

As a result of long-term researches (from 1979 up to 2007) on the seashore near southern Primorye (Sea of Japan) the composition and ecological peculiarities of fouling and epizooon floras have been studied. There were 145 macroalgal species (73 – red algae, 36 – brown and 36 – green), of which nine species were new for benthic flora of study area, occurred in the fouling and on the valves of Japanese scallop. The percentage of algal megataxa among studied floras considerably differed from the typical benthic floras. Brown and green algae are predominant in

fouling flora's composition on the constructions non-having direct contact with a bottom. The predominance of the red algae is a characteristic feature of floras having direct contact with a bottom – that of epizoon and piers fouling. The considerable differences of studied floras on thallus forms' proportions deal with hydrodynamic peculiarities of biotopes.

Keywords: macrophytes, megataxa, fouling, epizoon, phytobenthos, thallus form, southern Primorye.

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- 1999. - 5. - .360-364.

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- : , 2008. - .1. - .105-126.

... // . . - 2006. - **91**, 7. - .1107-1109.

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