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Pyrgula caspia

Nereis diversicolor *Balanus* sp. *Creastoderma* sp. *Abra ovata*

Dreissena sp. *Mytilaster lineatus*

Bivalve larvae *Nematoda* *Ostracoda*

|| : || :

۳ - Ekman grab

۴ - Rose Bengal

◦ -Contagious distribution

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$$\frac{100 \times 100}{225 \times 1/5} = 29/63$$

$$\frac{100 \times 100}{10/75 \times 3} = 310/2$$

Word Minitab, Origin, Excel

Log (x+1)

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-
- ۱ -Regular distribution
 - ۲ Contagious distribution (clumped distribution)
 - ۳ - Random
 - ۴ - Shannon

$$D_{sh} = -\sum_{i=1}^s \left[\left(\frac{n_i}{N} \right) \text{Ln} \left(\frac{n_i}{N} \right) \right]$$

$$D_{si} = \sum_{i=1}^s \left[\frac{n_i(n_i - 1)}{N(N - 1)} \right]$$

Pyrgula caspia

$$D_{Ma} = \frac{S - 1}{\text{Ln}N}$$

:S

i

:n_i

:N

:Ln

%

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Ammonia

Elphidium

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-
- ۱ - Simpson
 - ۲ - Margalef
 - ۳ - Protozoa
 - ۴ - Nematelminthes
 - ۵ - Annelida
 - ۶ - Mollusca
 - ۷ - Arthropoda
 - ۸ - Rhizopoda
 - ۹ - Foraminifera
 - ۱۰ - Rotaliidae
 - ۱۱ - Elpidiidae

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()
 ()
(Nereis diversicolor)

$\frac{1}{3}$

() (X²) (I)

Nereis

diversicolor

(.)

Abra ovata Mytiliaster lineatus
Pyrgula caspia Nereis diversicolor
Balanus Cerastoderma

()

) () (%)
(

	χ^2	(I)	()				
						<i>Foraminifera</i>	
						<i>Nematoda</i>	
						<i>Bivalve larvae</i>	
						<i>Ostracoda</i>	

Nereis diversicolor

Abra ovata ()

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Mytilaster lineatus

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Dreissena

Abra ovata

()

Dreissena

M. lineatus

()

Cerastoderma

(.) ()
) ()
()
()
(Foraminifera)
Ammonia *Elphidium* *Pyrgula caspia*
(.)
Ostracoda *Nematoda* , *Bivalve larvae*
Nematoda *Foraminifera* *Balanus*
() *Ostracoda* / *Balanus*
(.) *Balanus*

Abra ovata *Cerastoderma* sp. *caspia*

($p < /$)

Nereis diversicolor

) *Balanus* sp.

($P < /$ $p < /$

Wallis Kruskal

Mann- Whitney

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Pyrgula

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Mann-Whitney

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٥	٤	٣	٢		
بدون معني	٠/٠٢٦	٠/٠١٤	بدون معني	١	<i>Nereis diversicolor</i>
بدون معني	بدون معني	بدون معني		٢	
٠/٠٠١	بدون معني			٣	
٠/٠٠٧				٤	
٠/٠٠٣	٠/٠٠٠٤	بدون معني	٠/٠٠٠٤	١	<i>Pyrgula caspia</i>
بدون معني	بدون معني	٠/٠٠٠٨		٢	
٠/٠٠٠١	٠/٠٠٠٤			٣	
٠/٠٢٩				٤	
٠/٠٠٣	٠/٠٠٠٤	بدون معني	٠/٠٠٢	١	<i>Cerastoderma</i> sp.
بدون معني	بدون معني	٠/٠٠٦		٢	
٠/٠٠٢	٠/٠٠٠٦			٣	
بدون معني				٤	
٠/٠٠٠٢	٠/٠٠٠١	بدون معني	٠/٠٠٠١	١	<i>Abra ovata</i>
بدون معني	بدون معني	٠/٠٠٠١		٢	
٠/٠٠٠١	٠/٠٠٠١			٣	
بدون معني				٤	

٠/٠٣٢	٠/٠٠٣	بدون معني	بدون معني	١	<i>Balanus sp.</i>
بدون معني	٠/٠٣٧	بدون معني		٢	
بدون معني	٠/٠١٢			٣	
بدون معني				٤	

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(Abra ovata)

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10- Fowler. J. & L. Cohen, 1990. Practical studies for field biology, Open University press, M. K. Philadelphia.

11- Greenberg, A.E., 1996. Standard methods for the examination of water and wastewater, American public Health Association.

12- Ramsar Convention Bureau, 1997. The Ramsar Convention manual, A guide to the convention on wetlands, 2nd edition, Gland, Switzerland, 161 pp.

13- Zhadin, V.I., 1965. Mollusks of fresh and brackish water of the U.S.S.R., Trans: A.Mercado, Israel. 1-20.

Investigation on Benthos Invertebrates of the Gomishan Wetland

B. Riazi¹

Abstract

With regard to the important role of benthos invertebrates in aquatic ecosystems, the purpose of this research was to study about them in Gomishan wetland. The sampling was done by Ekman Grab from the sediments of the wetland bottom within 5 chosen stations for 12 continuous months (from Esfand 1377 until Bahman 1378). The specimens were stained by Rose Bengal solvent and then were identified and counted in separate groups of macro-and meio-benthos. Among the macro-benthos, the highest density was observed in *Pyrgula caspia species*. After that, more density was seen respectively in *Abra ovata*, *Cerastoderma sp.*, *Balanus sp.*, *Nereis diversicolor*, *Mytilaster lineatus* and *Dreissena sp.* Among the meio-benthos, the highest density was seen in *Foraminifera* and then respectively in *Ostracoda*, *Nematoda* and *Bivalve larvae*. The indices of diversity and distribution were calculated and are given in this article.

Keywords : Invertebrates, Macro-benthos, Meio-benthos, Gomishan wetland

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