**ПРИЛОЖЕНИЕ**

**APPENDIX**

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Рис. 1. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 1. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 2. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 2. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 3. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 3. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 4. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 4. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 5. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 5. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 6. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 6. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 7. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 7. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 8. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 8. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 9. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 9. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 10. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 10. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 11. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 11. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 12. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 12. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 13. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 13. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 14. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – плотность поселения (экз./м2)

Fig. 14. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – population density (inds./m2)

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Рис. 15. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость (*Yoldia* sp. – плотность поселения, экз./м2)

Fig. 15. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence (*Yoldia* sp. – population density, inds./m2)

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Рис. 16. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 16. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 17. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 17. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 18. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 18. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 19. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 19. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 20. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 20. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 21. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 21. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 22. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 22. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 23. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 23. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 24. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 24. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 25. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 25. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 26. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 26. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 27. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 27. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 28. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 28. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence

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Рис. 29. Распределение таксонов макрозообентоса вдоль градиента загрязнения: ось абсцисс – *TPF* (усл. ед.), ось ординат – встречаемость

Fig. 29. Distribution of macrozoobenthic taxa along pollution gradient: abscissa axis – *TPF* (conv. units), ordinate axis – occurrence



Рис. 30. Факторы среды, состав и состояние сообществ макрозообентоса на прибрежных акваториях Владивостока: чем теплее цвет, тем хуже состояние, а параметры среды принимают «закритические» значения (пояснения в тексте)

Fig. 30. Environmental factors, composition and status of macrozoobenthic communities at the coastal areas of Vladivostok: the warmer the color, the worse the status, and parameters take «supercritical» values (see text for explanations)

Таблица 1

Некоторые параметры кривых отклика, полученных на основе плотности поселения таксонов макрозообентоса

Table 1

Some parameters of response curves obtained using population density of macrozoobenthic taxa

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| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Ampharete acutifrons* | I | 3,91 | – | – | – | – | 15 | NA | – | 0,00 | – | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,06 |
| *Brada* sp. | I | 4,75 | – | – | – | – | 25 | NA | – | 0,00 | – | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,25 |
| *Cistenides granulata* | I | 4,16 | – | – | – | – | 5 | NA | – | 0,00 | – | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,41 |
| *Mizuhopecten yessoensis* | I | 4,38 | – | – | – | – | 12 | NA | – | 0,00 | – | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,44 |
| *Monoculodes breviops* | I | 4,08 | – | – | – | – | 5 | NA | – | 0,00 | – | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,44 |
| *Derjuginella rufofasciata* | II | 2,73 | 1,57 | – | – | – | 10 | 1,00 | – | – | – | – | – | -0,40 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 2,02 |
| *Eteone* sp*.* | II | 3,17 | 0,73 | – | – | – | 50 | 1,00 | – | – | – | – | – | 1,04 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 2,44 |
| *Felaniella usta* | II | 1,17 | 63,45 | – | – | – | 110 | 1,00 | – | – | – | – | – | -1,04 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,54 |
| *Grandifoxus robustus* | II | 2,45 | 14,06 | – | – | – | 24 | 1,00 | – | – | – | – | – | -1,31 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,60 |
| *Monoculodes zernovi* | II | 2,59 | 7,68 | – | – | – | 6 | 1,00 | – | – | – | – | – | -1,51 | – | 1,00 | 1,00 | – | – | 1,00 | 1,12 | – | – | 1,56 |
| *Nephtys longosetosa* | II | 2,62 | 6,04 | – | – | – | 15 | 1,00 | – | – | – | – | – | -1,57 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,53 |
| *Onuphis* sp*.* | II | 0,98 | 31,47 | – | – | – | 65 | 1,00 | – | – | – | – | – | -1,06 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,48 |
| *Polydora* sp*.* | II | 4,45 | 0,63 | – | – | – | 3100 | 1,00 | – | – | – | – | – | 1,24 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 2,48 |
| *Prionospio malmgreni* | II | 46,94 | -45,55 | – | – | – | 90 | 5,00 | – | – | – | – | – | 7,06 | – | 5,00 | 5,00 | – | – | 5,00 | 5,00 | – | – | 2,90 |
| *Pseudopotamilla* sp*.* | II | 4,63 | -0,35 | – | – | – | 90 | 5,00 | – | – | – | – | – | 4,01 | – | 5,00 | 5,00 | – | – | 5,00 | 5,00 | – | – | 2,54 |
| *Schistomeringos japonica* | II | 48,17 | -47,50 | – | – | – | 2100 | 5,00 | – | – | – | – | – | 7,03 | – | 5,00 | 5,00 | – | – | 5,00 | 5,00 | – | – | 3,02 |
| *Solen krusensterni* | II | 3,15 | 5,92 | – | – | – | 14 | 1,00 | – | – | – | – | – | -1,71 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,56 |
| *Spiophanes bombyx* | II | 2,75 | 2,71 | – | – | – | 820 | 1,00 | – | – | – | – | – | -1,26 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 2,05 |
| *Amphiodia fissa* | III | -4,97 | 22,89 | 3,52 | – | – | 2000 | 1,00 | 1,50 | 1,87 | – | – | – | -0,56 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,72 |
| *Byblis* sp*.* | III | -28,69 | 100 | 3,96 | – | – | 550 | 1,00 | 2,06 | 2,15 | – | – | – | -0,43 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,58 |
| *Capitella capitata* | III | 4,08 | -24,79 | 3,10 | – | – | 900 | 2,01 | 5,00 | 1,66 | – | – | – | 5,32 | – | 5,00 | 5,00 | – | – | 5,00 | 5,00 | – | – | 2,81 |
| *Cheilonereis cyclurus* | III | 5,95 | -6,45 | 0,29 | – | – | 110 | 4,84 | 5,00 | 4,69 | – | – | – | 6,70 | – | 5,00 | 5,00 | – | – | 5,00 | 5,00 | – | – | 3,58 |
| *Chone cincta* | III | 77,68 | -81,15 | 0,09 | – | – | 190 | 4,92 | 5,00 | 4,83 | – | – | – | 6,91 | – | 5,00 | 5,00 | – | – | 5,00 | 5,00 | – | – | 4,18 |
| *Chone* sp*.* | III | 26,49 | -100 | 3,50 | – | – | 40 | 2,15 | 5,00 | 2,06 | – | – | – | 5,53 | – | 3,76 | 5,00 | – | – | 3,47 | 5,00 | – | – | 2,50 |
| *Echinarachnius parma* | III | -3,47 | 43,57 | 1,98 | – | – | 30 | 1,00 | 1,14 | 1,32 | – | – | – | -0,84 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,28 |
| Holothuroidea fam. gen. sp. | III | -33,25 | 100 | 3,66 | – | – | 36 | 1,00 | 2,24 | 2,33 | – | – | – | -0,33 | – | 1,00 | 1,00 | – | – | 1,00 | 1,03 | – | – | 1,70 |
| *Macoma nipponica* | III | 51,08 | -100 | 3,50 | – | – | 63 | 3,13 | 5,00 | 3,04 | – | – | – | 6,02 | – | 4,42 | 5,00 | – | – | 4,42 | 5,00 | – | – | 2,90 |
| Продолжение табл. 1  Table 1 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Mactra chinensis* | III | -12,47 | 100 | 2,71 | – | – | 58 | 1,00 | 1,41 | 1,50 | – | – | – | -0,75 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,40 |
| *Maldane sarsi* | III | -60,75 | 100 | 2,94 | – | – | 3900 | 1,00 | 3,34 | 3,43 | – | – | – | 0,22 | – | 1,00 | 1,94 | – | – | 1,00 | 1,94 | – | – | 2,36 |
| *Onuphis iridescens* | III | -22,16 | 50,6 | 3,77 | – | – | 275 | 1,00 | 2,58 | 2,75 | – | – | – | -0,12 | – | 1,00 | 2,90 | – | – | 1,00 | 2,72 | – | – | 2,04 |
| *Philine argentata* | III | 26,75 | -100 | 2,98 | – | – | 45 | 2,16 | 5,00 | 2,07 | – | – | – | 5,53 | – | 3,76 | 5,00 | – | – | 3,47 | 5,00 | – | – | 3,13 |
| *Praxillella gracilis* | III | -33,28 | 100 | 3,20 | – | – | 600 | 1,00 | 2,24 | 2,33 | – | – | – | -0,33 | – | 1,00 | 1,03 | – | – | 1,00 | 1,07 | – | – | 1,98 |
| *Prionospio nova* | III | -23,01 | 100 | 4,27 | – | – | 190 | 1,00 | 1,83 | 1,92 | – | – | – | -0,54 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,88 |
| *Protomedeia microdactyla* | III | -28,75 | 100 | 3,73 | – | – | 25 | 1,00 | 2,06 | 2,15 | – | – | – | -0,42 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,71 |
| *Scoloplos armiger* | III | -66,36 | 92,57 | 2,08 | – | – | 500 | 1,00 | 3,77 | 3,87 | – | – | – | 0,43 | – | 1,00 | 1,94 | – | – | 1,00 | 1,94 | – | – | 2,23 |
| Solenogastres fam. gen. sp. | III | -28,10 | 100 | 3,50 | – | – | 65 | 1,00 | 2,04 | 2,12 | – | – | – | -0,44 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 1,81 |
| *Sternaspis scutata* | III | -36,90 | 100 | 3,57 | – | – | 90 | 1,00 | 2,39 | 2,48 | – | – | – | -0,26 | – | 1,00 | 1,14 | – | – | 1,00 | 1,14 | – | – | 1,77 |
| Actiniaria fam. gen. sp. | IV | -5,90 | 21,00 | 8,32 | – | – | 50 | 2,35 | – | 2,05 | 2,66 | – | – | 2,35 | – | 2,35 | 2,35 | – | – | 2,35 | 2,35 | – | – | 2,15 |
| *Alveinus ojianus* | IV | -16,68 | 100 | 18,44 | – | – | 700 | 1,70 | – | 1,64 | 1,76 | – | – | 1,70 | – | 1,70 | 1,70 | – | – | 1,70 | 1,70 | – | – | 1,68 |
| *Ampelisca macrocephala* | IV | -5,44 | 100 | 8,27 | – | – | 4500 | 1,27 | – | 1,21 | 1,34 | – | – | 1,27 | – | 1,27 | 1,27 | – | – | 1,00 | 5,00 | – | – | 2,27 |
| *Ampharete sibirica* | IV | -9,95 | 100 | 9,71 | – | – | 750 | 1,39 | – | 1,34 | 1,45 | – | – | 1,39 | – | 1,39 | 1,39 | – | – | 1,39 | 1,39 | – | – | 1,62 |
| *Amphiodia periercta* | IV | -21,45 | 100 | 21,22 | – | – | 12 | 1,85 | – | 1,80 | 1,91 | – | – | 1,85 | – | 1,85 | 1,85 | – | – | 1,85 | 1,85 | – | – | 1,75 |
| *Anisocorbula venusta* | IV | -53,95 | 100 | 56,05 | – | – | 300 | 3,20 | – | 3,14 | 3,26 | – | – | 3,20 | – | 3,20 | 3,20 | – | – | 3,20 | 3,20 | – | – | 2,82 |
| *Anonyx* sp*.* | IV | -9,93 | 100 | 10,76 | – | – | 150 | 1,41 | – | 1,36 | 1,47 | – | – | 1,41 | – | 1,41 | 1,41 | – | – | 1,41 | 1,41 | – | – | 1,81 |
| Aphroditidae gen. sp. | IV | -3,31 | 20,88 | 5,16 | – | – | 37 | 1,81 | – | 1,53 | 2,10 | – | – | 1,81 | – | 1,81 | 1,81 | – | – | 1,81 | 1,81 | – | – | 1,65 |
| *Arca boucardi* | IV | -40,02 | 100 | 42,25 | – | – | 1100 | 2,65 | – | 2,58 | 2,71 | – | – | 2,65 | – | 2,65 | 2,65 | – | – | 2,65 | 2,65 | – | – | 2,47 |
| *Aricidea catherinae* | IV | -28,10 | 100 | 29,32 | – | – | 300 | 2,15 | – | 2,09 | 2,20 | – | – | 2,15 | – | 2,15 | 2,15 | – | – | 2,15 | 2,15 | – | – | 2,61 |
| *Asabellides sibirica* | IV | -64,07 | 100 | 65,32 | – | – | 5000 | 3,59 | – | 3,53 | 3,64 | – | – | 3,59 | – | 3,59 | 3,59 | – | – | 3,59 | 3,59 | – | – | 2,72 |
| *Asychis* sp*.* | IV | -2,16 | 23,41 | 4,32 | – | – | 13 | 1,55 | – | 1,29 | 1,82 | – | – | 1,55 | – | 1,55 | 1,55 | – | – | 1,55 | 1,55 | – | – | 1,64 |
| *Balanus rostratus* | IV | -39,24 | 100 | 41,59 | – | – | 340 | 2,62 | – | 2,55 | 2,68 | – | – | 2,62 | – | 2,62 | 2,62 | – | – | 2,62 | 2,62 | – | – | 2,57 |
| *Bela erosa* | IV | -1,19 | 8,05 | 3,80 | – | – | 27 | 2,24 | – | 1,42 | 3,06 | – | – | 2,24 | – | 2,24 | 2,24 | – | – | 2,24 | 2,24 | – | – | 2,24 |
| *Cadella lubrica* | IV | -9,57 | 100 | 8,80 | – | – | 7 | 1,37 | – | 1,31 | 1,42 | – | – | 1,37 | – | 1,35 | 1,39 | – | – | 1,37 | 1,37 | – | – | 1,65 |
| Caprellidae gen. sp. | IV | -9,26 | 100 | 9,07 | – | – | 850 | 1,37 | – | 1,31 | 1,42 | – | – | 1,37 | – | 1,37 | 1,37 | – | – | 1,37 | 1,37 | – | – | 1,76 |
| *Carinomella* sp*.* | IV | -7,26 | 40,76 | 9,86 | – | – | 18 | 1,84 | – | 1,68 | 2,00 | – | – | 1,84 | – | 1,84 | 1,84 | – | – | 1,84 | 1,84 | – | – | 1,64 |
| *Cerebratulus signatus* | IV | -2,44 | 25,27 | 5,71 | – | – | 22 | 1,64 | – | 1,35 | 1,94 | – | – | 1,64 | – | 1,64 | 1,64 | – | – | 1,64 | 1,64 | – | – | 2,45 |
| *Cerebratulus* sp*.* | IV | -9,71 | 100 | 9,55 | – | – | 55 | 1,39 | – | 1,33 | 1,44 | – | – | 1,39 | – | 1,39 | 1,39 | – | – | 1,39 | 1,39 | – | – | 2,25 |
| Cirratulidae gen. sp. | IV | -8,16 | 20,57 | 10,84 | – | – | 15 | 2,85 | – | 2,52 | 3,17 | – | – | 2,85 | – | 2,85 | 2,85 | – | – | 2,85 | 2,85 | – | – | 2,59 |
| *Cirratulus cirratus* | IV | -7,74 | 18,57 | 10,15 | – | – | 160 | 2,93 | – | 2,58 | 3,27 | – | – | 2,93 | – | 2,93 | 2,93 | – | – | 2,93 | 2,93 | – | – | 2,85 |
| Продолжение табл. 1  Table 1 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Cistenides hyperborea* | IV | -28,08 | 100 | 29,10 | – | – | 80 | 2,14 | – | 2,09 | 2,20 | – | – | 2,14 | – | 2,01 | 2,28 | – | – | 2,08 | 2,20 | – | – | 2,49 |
| *Crangon amurensis* | IV | -3,45 | 10,03 | 6,24 | – | – | 10 | 2,93 | – | 2,25 | 3,61 | – | – | 2,93 | – | 2,93 | 2,93 | – | – | 2,93 | 2,93 | – | – | 2,56 |
| *Crangon* sp*.* | IV | -21,34 | 100 | 21,90 | – | – | 14 | 1,86 | – | 1,81 | 1,92 | – | – | 1,86 | – | 1,86 | 1,86 | – | – | 1,86 | 1,86 | – | – | 2,18 |
| *Crassicorophium crassicorne* | IV | -34,08 | 100 | 36,46 | – | – | 3550 | 2,41 | – | 2,35 | 2,47 | – | – | 2,41 | – | 2,41 | 2,41 | – | – | 2,41 | 2,41 | – | – | 2,31 |
| Cumacea fam. gen. sp. | IV | -21,15 | 100 | 21,50 | – | – | 60 | 1,85 | – | 1,80 | 1,91 | – | – | 1,85 | – | 1,85 | 1,85 | – | – | 1,85 | 1,85 | – | – | 2,20 |
| *Diastylis goodsiri* | IV | -27,20 | 100 | 28,22 | – | – | 35 | 2,11 | – | 2,05 | 2,16 | – | – | 2,11 | – | 2,11 | 2,11 | – | – | 2,11 | 2,11 | – | – | 2,20 |
| *Diplodonta semiosperoides* | IV | 7,07 | -100 | -5,07 | – | – | 17 | 1,24 | – | 1,18 | 1,30 | – | – | 1,24 | – | 1,24 | 1,24 | – | – | 1,24 | 1,24 | – | – | 1,53 |
| *Eumida sanguinea* | IV | -7,48 | 19,83 | 10,11 | – | – | 60 | 2,77 | – | 2,44 | 3,11 | – | – | 2,77 | – | 2,77 | 2,77 | – | – | 2,77 | 2,77 | – | – | 2,75 |
| *Gaetice depressus* | IV | -21,62 | 100 | 21,52 | – | – | 16 | 1,86 | – | 1,81 | 1,92 | – | – | 1,86 | – | 1,86 | 1,86 | – | – | 1,86 | 1,86 | – | – | 2,40 |
| *Glycera chirori* | IV | -54,14 | 100 | 55,76 | – | – | 40 | 3,20 | – | 3,14 | 3,26 | – | – | 3,20 | – | 3,20 | 3,20 | – | – | 3,20 | 3,20 | – | – | 2,84 |
| *Glycera tesselata* | IV | -20,72 | 86,68 | 23,39 | – | – | 150 | 2,02 | – | 1,94 | 2,09 | – | – | 2,02 | – | 2,02 | 2,02 | – | – | 2,02 | 2,02 | – | – | 2,08 |
| *Glycera unicornis* | IV | -19,83 | 53,27 | 21,00 | – | – | 32 | 2,53 | – | 2,43 | 2,64 | – | – | 2,53 | – | 2,53 | 2,53 | – | – | 2,53 | 2,53 | – | – | 2,44 |
| *Grandifoxus longirostris* | IV | 1,36 | 8,25 | 2,67 | – | – | 130 | 1,32 | – | NA | NA | – | – | 1,32 | – | 1,32 | 1,32 | – | – | 1,32 | 1,32 | – | – | 1,45 |
| *Halosydna* sp*.* | IV | -39,47 | 100 | 41,47 | – | – | 180 | 2,62 | – | 2,56 | 2,68 | – | – | 2,62 | – | 2,62 | 2,62 | – | – | 2,62 | 2,62 | – | – | 2,78 |
| *Harmothoe imbricata* | IV | -3,64 | 9,75 | 5,85 | – | – | 20 | 2,95 | – | 2,31 | 3,59 | – | – | 2,95 | – | 2,95 | 2,95 | – | – | 2,95 | 2,95 | – | – | 2,95 |
| *Heteromastus giganteus* | IV | -30,55 | 60,35 | 31,41 | – | – | 100 | 3,05 | – | 2,96 | 3,14 | – | – | 3,05 | – | 3,05 | 3,05 | – | – | 3,05 | 3,05 | – | – | 2,86 |
| Isopoda fam. gen. sp. | IV | -33,23 | 100 | 36,14 | – | – | 170 | 2,39 | – | 2,32 | 2,46 | – | – | 2,39 | – | 2,39 | 2,39 | – | – | 2,39 | 2,39 | – | – | 1,74 |
| *Lanassa* sp*.* | IV | -9,22 | 100 | 9,60 | – | – | 15 | 1,38 | – | 1,32 | 1,43 | – | – | 1,38 | – | 1,38 | 1,38 | – | – | 1,38 | 1,38 | – | – | 2,30 |
| *Laonice cirrata* | IV | -8,37 | 87,88 | 9,89 | – | – | 750 | 1,42 | – | 1,35 | 1,48 | – | – | 1,42 | – | 1,42 | 1,42 | – | – | 1,42 | 1,42 | – | – | 2,00 |
| *Laonice* sp*.* | IV | -7,12 | 42,08 | 9,02 | – | – | 9 | 1,77 | – | 1,62 | 1,91 | – | – | 1,77 | – | 1,77 | 1,77 | – | – | 1,77 | 1,77 | – | – | 2,17 |
| Lineidae gen. sp. | IV | -2,11 | 17,92 | 4,52 | – | – | 36 | 1,74 | – | 1,38 | 2,10 | – | – | 1,74 | – | 1,74 | 1,74 | – | – | 1,74 | 1,74 | – | – | 2,15 |
| *Liocyma fluctuosa* | IV | -10,15 | 100 | 8,93 | – | – | 60 | 1,38 | – | 1,33 | 1,44 | – | – | 1,38 | – | 1,38 | 1,38 | – | – | 1,38 | 1,38 | – | – | 1,66 |
| *Macoma calcarea* | IV | -7,21 | 27,70 | 9,50 | – | – | 32 | 2,21 | – | 1,98 | 2,43 | – | – | 2,21 | – | 2,21 | 2,21 | – | – | 2,21 | 2,21 | – | – | 2,24 |
| *Macoma incongrua* | IV | -5,99 | 25,54 | 8,68 | – | – | 40 | 2,15 | – | 1,89 | 2,41 | – | – | 2,15 | – | 2,15 | 2,15 | – | – | 2,15 | 2,15 | – | – | 2,19 |
| *Macoma scarlatoi* | IV | -8,02 | 12,82 | 9,40 | – | – | 65 | 3,72 | – | 3,28 | 4,16 | – | – | 3,72 | – | 3,72 | 3,72 | – | – | 3,72 | 3,72 | – | – | 3,57 |
| *Macoma tokyoensis* | IV | -3,50 | 13,03 | 6,00 | – | – | 20 | 2,46 | – | 1,96 | 2,96 | – | – | 2,46 | – | 2,46 | 2,46 | – | – | 2,46 | 2,46 | – | – | 2,30 |
| Maldanidae gen. sp. | IV | -14,34 | 100 | 15,14 | – | – | 570 | 1,59 | – | 1,54 | 1,64 | – | – | 1,59 | – | 1,59 | 1,59 | – | – | 1,59 | 1,59 | – | – | 2,06 |
| *Melanochlamys diomedea* | IV | -11,67 | 35,35 | 14,10 | – | – | 27 | 2,46 | – | 2,28 | 2,64 | – | – | 2,46 | – | 2,46 | 2,46 | – | – | 2,46 | 2,46 | – | – | 2,37 |
| *Monoculodes diamesus* | IV | -5,60 | 16,90 | 8,42 | – | – | 18 | 2,66 | – | 2,25 | 3,06 | – | – | 2,66 | – | 2,66 | 2,66 | – | – | 2,66 | 2,66 | – | – | 2,45 |
| *Monoculodes* sp*.* | IV | -54,67 | 100 | 55,31 | – | – | 54 | 3,20 | – | 3,15 | 3,25 | – | – | 3,20 | – | 3,20 | 3,20 | – | – | 3,20 | 3,20 | – | – | 2,64 |
| *Mya japonica* | IV | -14,90 | 52,29 | 17,18 | – | – | 15 | 2,23 | – | 2,11 | 2,35 | – | – | 2,23 | – | 2,23 | 2,23 | – | – | 2,23 | 2,23 | – | – | 2,47 |
| Продолжение табл. 1  Table 1 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Mya truncata* | IV | -60,90 | 100 | 61,55 | – | – | 36 | 3,45 | – | 3,40 | 3,50 | – | – | 3,45 | – | 3,45 | 3,45 | – | – | 3,45 | 3,45 | – | – | 2,77 |
| *Mya uzenensis* | IV | -13,38 | 25,32 | 14,26 | – | – | 45 | 3,18 | – | 2,97 | 3,40 | – | – | 3,18 | – | 3,18 | 3,18 | – | – | 3,18 | 3,18 | – | – | 3,17 |
| *Myxicola* sp. | IV | -27.23 | 100 | 28.02 | – | – | 80 | 2.11 | – | 2.05 | 2.16 | – | – | 2.11 | – | 1.97 | 2.24 | – | – | 2.05 | 2.17 | – | – | 2.54 |
| *Nassarius multigranosus* | IV | -9,87 | 33,49 | 12,65 | – | – | 80 | 2,34 | – | 2,14 | 2,55 | – | – | 2,34 | – | 2,34 | 2,34 | – | – | 2,34 | 2,34 | – | – | 2,29 |
| *Neohaustator fortilirata* | IV | 8,51 | -99,99 | -5,74 | – | – | 190 | 1,28 | – | 1,22 | 1,35 | – | – | 1,28 | – | 1,28 | 1,28 | – | – | 1,28 | 1,28 | – | – | 1,85 |
| *Neomysis* sp*.* | IV | -1,21 | 45,52 | 1,64 | – | – | 28 | 1,13 | – | NA | NA | – | – | 1,13 | – | 1,13 | 1,13 | – | – | 1,13 | 1,13 | – | – | 1,39 |
| Nereididae gen. sp. | IV | -5,51 | 23,15 | 8,60 | – | – | 55 | 2,22 | – | 1,91 | 2,53 | – | – | 2,22 | – | 2,22 | 2,22 | – | – | 2,22 | 2,22 | – | – | 2,74 |
| *Nereis vexillosa* | IV | -69,54 | 81,64 | 68,93 | – | – | 41 | 4,39 | – | 4,33 | 4,46 | – | – | 4,39 | – | 4,39 | 4,39 | – | – | 4,39 | 4,39 | – | – | 3,40 |
| *Nothria* sp*.* | IV | -21,79 | 100 | 21,06 | – | – | 9 | 1,86 | – | 1,80 | 1,91 | – | – | 1,86 | – | 1,86 | 1,86 | – | – | 1,86 | 1,86 | – | – | 2,10 |
| *Odius kelleri* | IV | -56,33 | 100 | 57,32 | – | – | 27 | 3,27 | – | 3,22 | 3,33 | – | – | 3,27 | – | 3,27 | 3,27 | – | – | 3,27 | 3,27 | – | – | 2,51 |
| *Oenopota* sp. | IV | -54,47 | 100 | 55,48 | – | – | 27 | 3,20 | – | 3,14 | 3,25 | – | – | 3,20 | – | 3,20 | 3,20 | – | – | 3,20 | 3,20 | – | – | 2,79 |
| *Ophelina acuminata* | IV | 0,08 | 15,65 | 2,66 | – | – | 33 | 1,33 | – | NA | NA | – | – | 1,33 | – | 1,33 | 1,33 | – | – | 1,33 | 1,33 | – | – | 1,83 |
| *Orchomenella* sp*.* | IV | -9,24 | 100 | 8,77 | – | – | 55 | 1,36 | – | 1,31 | 1,41 | – | – | 1,36 | – | 1,36 | 1,36 | – | – | 1,36 | 1,36 | – | – | 1,63 |
| *Pagurus* sp*.* | IV | -4,73 | 75,20 | 6,47 | – | – | 13 | 1,30 | – | 1,22 | 1,38 | – | – | 1,30 | – | 1,30 | 1,30 | – | – | 1,30 | 1,30 | – | – | 2,15 |
| *Paradorippe granulata* | IV | -21,32 | 100 | 21,58 | – | – | 95 | 1,86 | – | 1,81 | 1,91 | – | – | 1,86 | – | 1,86 | 1,86 | – | – | 1,86 | 1,86 | – | – | 2,42 |
| *Paranaitis polynoides* | IV | -14,54 | 92,61 | 14,24 | – | – | 45 | 1,62 | – | 1,56 | 1,68 | – | – | 1,62 | – | 1,62 | 1,62 | – | – | 1,62 | 1,62 | – | – | 1,82 |
| *Pholoe minuta* | IV | -1,33 | 6,78 | 3,96 | – | – | 50 | 2,56 | – | 1,58 | 3,54 | – | – | 2,56 | – | 2,56 | 2,56 | – | – | 2,56 | 2,56 | – | – | 2,34 |
| *Phyllodoce* sp*.* | IV | -2,61 | 11,27 | 5,62 | – | – | 20 | 2,46 | – | 1,83 | 3,09 | – | – | 2,46 | – | 2,46 | 2,46 | – | – | 2,46 | 2,46 | – | – | 2,31 |
| *Pinnixa rathbuni* | IV | -2,71 | 14,29 | 5,74 | – | – | 125 | 2,18 | – | 1,68 | 2,68 | – | – | 2,18 | – | 2,18 | 2,18 | – | – | 2,18 | 2,18 | – | – | 2,53 |
| *Pleusymtes* sp*.* | IV | -1,57 | 6,79 | 4,50 | – | – | 27 | 2,79 | – | 1,76 | 3,82 | – | – | 2,79 | – | 2,79 | 2,79 | – | – | 2,79 | 2,79 | – | – | 2,13 |
| Polynoidae gen. sp. | IV | -27,94 | 100 | 28,66 | – | – | 20 | 2,13 | – | 2,08 | 2,19 | – | – | 2,13 | – | 2,13 | 2,13 | – | – | 2,13 | 2,13 | – | – | 2,30 |
| Polynoidae gen. sp. 4 | IV | -52,76 | 100 | 51,92 | – | – | 14 | 3,09 | – | 3,04 | 3,15 | – | – | 3,09 | – | 3,09 | 3,09 | – | – | 3,09 | 3,09 | – | – | 3,58 |
| *Pontogeneia rostrata* | IV | -4,73 | 100 | 7,35 | – | – | 50 | 1,24 | – | 1,18 | 1,31 | – | – | 1,24 | – | 1,24 | 1,24 | – | – | 1,24 | 1,24 | – | – | 1,50 |
| *Pontogeneia* sp*.* | IV | -9,08 | 97,91 | 9,98 | – | – | 290 | 1,39 | – | 1,33 | 1,44 | – | – | 1,39 | – | 1,39 | 1,39 | – | – | 1,39 | 1,39 | – | – | 1,62 |
| *Potamilla reniformis* | IV | -15,51 | 100 | 15,75 | – | – | 140 | 1,63 | – | 1,57 | 1,68 | – | – | 1,63 | – | 1,63 | 1,63 | – | – | 1,63 | 1,63 | – | – | 2,78 |
| *Potamocorbula amurensis* | IV | -33,85 | 100 | 36,38 | – | – | 900 | 2,40 | – | 2,34 | 2,47 | – | – | 2,40 | – | 2,40 | 2,40 | – | – | 2,40 | 2,40 | – | – | 2,36 |
| *Prionospio* sp*.* | IV | -15,54 | 100 | 15,58 | – | – | 141 | 1,62 | – | 1,57 | 1,68 | – | – | 1,62 | – | 1,62 | 1,62 | – | – | 1,62 | 1,62 | – | – | 2,14 |
| *Protomedeia epimerata* | IV | -27,95 | 100 | 29,47 | – | – | 350 | 2,15 | – | 2,09 | 2,21 | – | – | 2,15 | – | 2,15 | 2,15 | – | – | 2,15 | 2,15 | – | – | 2,30 |
| *Protomedeia popovi* | IV | -15,44 | 100 | 15,83 | – | – | 230 | 1,63 | – | 1,57 | 1,68 | – | – | 1,63 | – | 1,63 | 1,63 | – | – | 1,63 | 1,63 | – | – | 2,00 |
| *Protothaca jedoyensis* | IV | -10,55 | 40,10 | 13,05 | – | – | 20 | 2,18 | – | 2,01 | 2,34 | – | – | 2,18 | – | 2,18 | 2,18 | – | – | 2,18 | 2,18 | – | – | 2,52 |
| *Scolelepis* sp*.* | IV | -2,87 | 20,67 | 6,15 | – | – | 210 | 1,87 | – | 1,51 | 2,23 | – | – | 1,87 | – | 1,87 | 1,87 | – | – | 1,87 | 1,87 | – | – | 2,42 |
| Продолжение табл. 1  Table 1 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Serripes groenlandicus* | IV | -15,46 | 100 | 15,66 | – | – | 9 | 1,62 | – | 1,57 | 1,68 | – | – | 1,62 | – | 1,62 | 1,62 | – | – | 1,62 | 1,62 | – | – | 1,94 |
| *Sigambra bassi* | IV | -2,85 | 8,07 | 4,93 | – | – | 600 | 2,93 | – | 2,17 | 3,69 | – | – | 2,93 | – | 2,93 | 2,93 | – | – | 2,93 | 2,93 | – | – | 2,55 |
| *Siliqua alta* | IV | 1,79 | -87,51 | -2,83 | – | – | 26 | 1,11 | – | 1,04 | 1,17 | – | – | 1,11 | – | 1,11 | 1,11 | – | – | 1,11 | 1,11 | – | – | 1,49 |
| *Sphaerodoridium minutum* | IV | -15,25 | 30,65 | 16,05 | – | – | 14 | 3,04 | – | 2,87 | 3,22 | – | – | 3,04 | – | 3,04 | 3,04 | – | – | 3,04 | 3,04 | – | – | 2,96 |
| *Spiophanes berkeleyorum* | IV | -15,52 | 63,52 | 17,52 | – | – | 60 | 2,04 | – | 1,94 | 2,14 | – | – | 2,04 | – | 2,04 | 2,04 | – | – | 2,04 | 2,04 | – | – | 2,12 |
| Syllidae gen. sp. | IV | -13,41 | 100 | 14,69 | – | – | 14 | 1,56 | – | 1,51 | 1,62 | – | – | 1,56 | – | 1,56 | 1,56 | – | – | 1,56 | 1,56 | – | – | 1,82 |
| *Synandwakia* sp*.* | IV | -33,82 | 100 | 36,04 | – | – | 60 | 2,40 | – | 2,33 | 2,46 | – | – | 2,40 | – | 2,40 | 2,40 | – | – | 2,40 | 2,40 | – | – | 2,31 |
| *Synidotea cinerea* | IV | -7,22 | 12,68 | 8,91 | – | – | 5 | 3,54 | – | 3,08 | 4,00 | – | – | 3,54 | – | 3,10 | 3,98 | – | – | 3,54 | 3,54 | – | – | 3,24 |
| *Synidotea epimerata* | IV | -7,68 | 100 | 9,17 | – | – | 30 | 1,34 | – | 1,28 | 1,39 | – | – | 1,34 | – | 1,34 | 1,34 | – | – | 1,34 | 1,34 | – | – | 1,70 |
| *Tritodynamia rathbunae* | IV | -21.75 | 100 | 21.83 | – | – | 6 | 1,87 | – | 1,81 | 1,92 | – | – | 1,87 | – | 1,74 | 2,00 | – | – | 1,81 | 1,93 | – | – | 2,32 |
| *Westwoodilla rectangulata* | IV | -15,42 | 100 | 15,85 | – | – | 40 | 1,63 | – | 1,57 | 1,68 | – | – | 1,63 | – | 1,63 | 1,63 | – | – | 1,63 | 1,63 | – | – | 2,20 |
| *Westwoodilla* sp*.* | IV | -52,97 | 100 | 53,47 | – | – | 20 | 3,13 | – | 3,08 | 3,18 | – | – | 3,13 | – | 3,13 | 3,13 | – | – | 3,13 | 3,13 | – | – | 2,61 |
| *Yoldia keppeliana* | IV | -28,39 | 100 | 29,28 | – | – | 25 | 2,15 | – | 2,10 | 2,21 | – | – | 2,15 | – | 2,15 | 2,15 | – | – | 2,15 | 2,15 | – | – | 2,20 |
| *Yoldia* sp*.* | IV | -33,88 | 100 | 36,17 | – | – | 100 | 2,40 | – | 2,34 | 2,46 | – | – | 2,40 | – | 2,40 | 2,40 | – | – | 2,40 | 2,40 | – | – | 2,11 |
| *Ampharete* sp*.* | V | -49,78 | 100 | 6,86 | 9,32 | – | 250 | 2,90 | – | 2,79 | 3,00 | – | – | 2,56 | – | 2,00 | 2,90 | – | – | 2,90 | 2,90 | – | – | 2,34 |
| Ampharetidae gen. sp. | V | -11,43 | 40,02 | 19,47 | 55,09 | – | 120 | 2,37 | – | 2,23 | 2,49 | – | – | 2,36 | – | 2,00 | 2,37 | – | – | 2,37 | 2,37 | – | – | 1,89 |
| Amphipoda fam. gen. sp. | V | 0,44 | 11,11 | 4,53 | 34,04 | – | 140 | 1,64 | – | 1,42 | 1,86 | – | – | 1,80 | – | 1,64 | 1,64 | – | – | 1,64 | 1,64 | – | – | 1,96 |
| *Aphelochaeta pacifica* | V | -2,63 | 3,28 | 5,19 | 5,38 | – | 6500 | 5,00 | – | 3,92 | NA | – | – | 5,25 | – | 2,00 | 5,00 | – | – | 5,00 | 5,00 | – | – | 2,72 |
| *Aricidea suecica* | V | -40,62 | 100 | 9,73 | 19,59 | – | 60 | 2,56 | – | 2,47 | 2,65 | – | – | 2,43 | – | 2,00 | 2,56 | – | – | 2,56 | 2,56 | – | – | 2,35 |
| Ascidia fam. gen. sp. | V | -41,64 | 100 | 12,63 | 25,23 | – | 90 | 2,62 | – | 2,54 | 2,70 | – | – | 2,53 | – | 2,00 | 2,62 | – | – | 2,62 | 2,62 | – | – | 2,54 |
| *Asterina pectinifera* | V | 2,45 | 4,87 | 4,41 | 100 | – | 25 | 1,30 | – | 1,17 | 1,43 | – | – | 2,00 | – | 1,30 | 1,30 | – | – | 1,30 | 1,30 | – | – | 2,14 |
| *Cerebratulus marginatus* | V | -48,58 | 100 | 8,81 | 13,61 | – | 150 | 2,87 | – | 2,77 | 2,96 | – | – | 2,66 | – | 2,00 | 2,87 | – | – | 2,87 | 2,87 | – | – | 2,38 |
| *Chaetozone setosa* | V | -12,16 | 16,56 | 13,65 | 16,72 | – | 2000 | 4,11 | – | 3,77 | 4,44 | – | – | 4,11 | – | 2,00 | 4,11 | – | – | 4,11 | 4,11 | – | – | 2,59 |
| *Charisma candida* | V | -36,23 | 89,69 | 8,25 | 13,65 | – | 30 | 2,54 | – | 2,43 | 2,64 | – | – | 2,34 | – | 2,00 | 2,54 | – | – | 2,54 | 2,54 | – | – | 2,29 |
| *Cryptonatica janthostoma* | V | 1,60 | 5,86 | 6,56 | 100 | – | 14 | 1,38 | – | 1,25 | 1,50 | – | – | 1,96 | – | 1,38 | 1,38 | – | – | 1,38 | 1,38 | – | – | 1,95 |
| *Cymatoica orientalis* | V | -29,63 | 92,04 | 7,20 | 14,57 | – | 35 | 2,21 | – | 2,11 | 2,31 | – | – | 2,03 | – | 2,00 | 2,21 | – | – | 2,21 | 2,21 | – | – | 2,00 |
| Decapoda fam. gen. sp. | V | -1,75 | 18,29 | 4,68 | 25,60 | – | 70 | 1,69 | – | 1,43 | 1,94 | – | – | 1,71 | – | 1,69 | 1,69 | – | – | 1,69 | 1,69 | – | – | 2,03 |
| *Diastylis* sp*.* | V | 2,40 | 8,66 | 2,28 | 100 | – | 420 | 1,19 | – | 1,08 | 1,30 | – | – | 1,55 | – | 1,19 | 1,19 | – | – | 1,19 | 1,19 | – | – | 1,65 |
| *Diastylopsis dawsoni* | V | -25,28 | 65,02 | 9,88 | 20,82 | – | 230 | 2,50 | – | 2,38 | 2,61 | – | – | 2,41 | – | 2,00 | 2,50 | – | – | 2,50 | 2,50 | – | – | 2,50 |
| *Echinocardium cordatum* | V | 1,85 | 7,79 | 2,29 | 100 | – | 60 | 1,19 | – | 1,08 | 1,31 | – | – | 1,61 | – | 1,19 | 1,19 | – | – | 1,19 | 1,19 | – | – | 1,68 |
| *Edwardsia japonica* | V | -39,08 | 95,88 | 6,08 | 10,44 | – | 90 | 2,54 | – | 2,43 | 2,65 | – | – | 2,25 | – | 2,00 | 2,54 | – | – | 2,54 | 2,54 | – | – | 2,45 |
| Продолжение табл. 1  Table 1 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Eteone longa* | V | -58,57 | 100 | 7,55 | 9,07 | – | 200 | 3,25 | – | 3,14 | 3,36 | – | – | 2,90 | – | 2,00 | 3,25 | – | – | 3,25 | 3,25 | – | – | 2,78 |
| Gastropoda fam. gen. sp. | V | 1,82 | 12,72 | 2,60 | 100 | – | 150 | 1,18 | – | 1,09 | 1,28 | – | – | 1,41 | – | 1,18 | 1,18 | – | – | 1,18 | 1,18 | – | – | 1,84 |
| *Glycera capitata* | V | -1,69 | 8,28 | 5,91 | 7,24 | – | 3000 | 2,60 | – | 1,57 | 3,96 | – | – | 2,73 | – | 2,00 | 2,60 | – | – | 2,60 | 2,60 | – | – | 2,79 |
| *Glycinde armigera* | V | 0,78 | 4,56 | 2,33 | 6,85 | – | 110 | 2,14 | – | 1,09 | 3,13 | – | – | 2,19 | – | 2,00 | 2,14 | – | – | 2,14 | 2,14 | – | – | 2,34 |
| *Goniada maculata* | V | 1,33 | 2,70 | 2,09 | 54,49 | – | 190 | 1,38 | – | 1,14 | 1,64 | – | – | 2,66 | – | 1,38 | 1,38 | – | – | 1,38 | 1,38 | – | – | 2,25 |
| *Lumbrineris longifolia* | V | -49,89 | 71,58 | 2,72 | 0,86 | – | 2500 | 3,54 | – | 3,27 | 3,79 | – | – | 1,15 | – | 2,00 | 3,54 | – | – | 3,54 | 3,54 | – | – | 2,29 |
| *Macoma* sp*.* | V | -65,34 | 100 | 33,90 | 50,22 | – | 250 | 3,60 | – | 3,53 | 3,66 | – | – | 3,57 | – | 2,00 | 3,60 | – | – | 3,60 | 3,60 | – | – | 2,75 |
| *Mediomastus californiensis* | V | -20,70 | 100 | 21,96 | 100 | – | 800 | 1,85 | – | 1,80 | 1,91 | – | – | 1,85 | – | 1,85 | 1,85 | – | – | 1,85 | 1,85 | – | – | 2,55 |
| *Melita* sp*.* | V | -3,20 | 21,25 | 7,24 | 26,84 | – | 145 | 1,96 | – | 1,68 | 2,21 | – | – | 1,96 | – | 1,96 | 1,96 | – | – | 1,96 | 1,96 | – | – | 2,24 |
| *Menestho exaratissima* | V | -9,09 | 31,42 | 11,01 | 28,17 | – | 370 | 2,31 | – | 2,08 | 2,55 | – | – | 2,31 | – | 2,00 | 2,31 | – | – | 2,31 | 2,31 | – | – | 2,48 |
| *Mya pseudoarenaria* | V | -67,76 | 100 | 7,30 | 7,89 | – | 90 | 3,61 | – | 3,49 | 3,72 | – | – | 3,20 | – | 2,00 | 3,61 | – | – | 3,61 | 3,61 | – | – | 2,56 |
| *Mya* sp*.* | V | -1,53 | 11,10 | 4,88 | 8,82 | – | 140 | 1,94 | – | 1,27 | 2,79 | – | – | 2,02 | – | 1,94 | 1,94 | – | – | 1,94 | 1,94 | – | – | 2,38 |
| Nemertea fam. gen. sp. | V | 0,45 | 2,98 | 1,49 | 1,92 | – | 250 | 1,00 | – | NA | 2,93 | – | – | 1,14 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 2,32 |
| *Nereis longior galinae* | V | -53,50 | 100 | 29,58 | 55,45 | – | 80 | 3,11 | – | 3,04 | 3,18 | – | – | 3,09 | – | 2,00 | 3,11 | – | – | 3,11 | 3,11 | – | – | 2,90 |
| *Nereis zonata* | V | -40,56 | 100 | 18,46 | 41,15 | – | 54 | 2,60 | – | 2,53 | 2,67 | – | – | 2,57 | – | 2,00 | 2,60 | – | – | 2,60 | 2,60 | – | – | 2,50 |
| *Nicolea* sp*.* | V | -40,16 | 100 | 27,07 | 64,43 | – | 54 | 2,61 | – | 2,54 | 2,67 | – | – | 2,60 | – | 2,00 | 2,61 | – | – | 2,61 | 2,61 | – | – | 2,68 |
| *Notomastus latericeus* | V | -97,20 | 100 | 5,71 | 4,19 | – | 950 | 4,76 | – | 4,61 | 4,89 | – | – | 3,90 | – | 2,00 | 4,76 | – | – | 4,76 | 4,76 | – | – | 3,05 |
| *Owenia fusiformis* | V | -2,80 | 19,82 | 4,75 | 16,33 | – | 400 | 1,74 | – | 1,40 | 2,11 | – | – | 1,74 | – | 1,74 | 1,74 | – | – | 1,74 | 1,74 | – | – | 2,37 |
| *Philine orientalis* | V | -2,91 | 11,11 | 5,66 | 12,97 | – | 100 | 2,52 | – | 2,01 | 3,01 | – | – | 2,53 | – | 2,00 | 2,52 | – | – | 2,52 | 2,52 | – | – | 2,46 |
| *Philine* sp*.* | V | -27,41 | 100 | 5,67 | 15,94 | – | 85 | 2,02 | – | 1,92 | 2,12 | – | – | 1,85 | – | 2,00 | 2,02 | – | – | 2,02 | 2,02 | – | – | 2,08 |
| *Phyllodoce groenlandica* | V | -27,43 | 100 | 5,61 | 12,23 | – | 280 | 2,01 | – | 1,91 | 2,11 | – | – | 1,78 | – | 2,00 | 2,01 | – | – | 2,01 | 2,01 | – | – | 1,86 |
| *Praxillella praetermissa* | V | -41,72 | 100 | 9,68 | 18,05 | – | 950 | 2,60 | – | 2,52 | 2,69 | – | – | 2,46 | – | 2,00 | 2,60 | – | – | 2,60 | 2,60 | – | – | 2,26 |
| *Praxillella* sp*.* | V | -5,23 | 30,09 | 2,84 | 7,38 | – | 900 | 1,52 | – | 1,25 | 1,79 | – | – | 1,22 | – | 1,52 | 1,52 | – | – | 1,52 | 1,52 | – | – | 1,85 |
| *Protocallithaca adamsi.* | V | 2,05 | 8,56 | 7,85 | 100 | – | 190 | 1,41 | – | 1,30 | 1,52 | – | – | 1,78 | – | 1,41 | 1,41 | – | – | 1,41 | 1,41 | – | – | 2,39 |
| *Protomedeia* sp*.* | V | -12,33 | 41,42 | 17,42 | 49,45 | – | 130 | 2,34 | – | 2,20 | 2,48 | – | – | 2,34 | – | 2,00 | 2,34 | – | – | 2,34 | 2,34 | – | – | 2,12 |
| *Raeta pulchella* | V | 2,12 | 4,26 | 2,52 | 100 | – | 180 | 1,23 | – | 1,09 | 1,37 | – | – | 2,06 | – | 1,23 | 1,23 | – | – | 1,23 | 1,23 | – | – | 2,05 |
| Sabellidae gen. sp. | V | -0,05 | 10,93 | 6,87 | 13,35 | – | 700 | 2,63 | – | 1,54 | 3,26 | – | – | 2,42 | – | 2,00 | 2,63 | – | – | 2,63 | 2,63 | – | – | 2,17 |
| *Scalibregma inflatum* | V | -1,97 | 6,39 | 4,91 | 7,11 | – | 800 | 3,18 | – | 2,20 | 4,12 | – | – | 3,18 | – | 2,00 | 3,18 | – | – | 3,18 | 3,18 | – | – | 2,42 |
| Sipuncula fam. gen. sp. | V | -0,47 | 10,84 | 5,55 | 17,32 | – | 95 | 2,20 | – | 1,77 | 2,60 | – | – | 2,20 | – | 2,00 | 2,20 | – | – | 2,20 | 2,20 | – | – | 2,19 |
| Spionidae gen. sp. | V | -1,42 | 10,20 | 3,81 | 8,06 | – | 380 | 1,89 | – | 1,21 | 2,64 | – | – | 1,90 | – | 1,89 | 1,89 | – | – | 1,89 | 1,89 | – | – | 2,23 |
| Terebellidae gen. sp. | V | -15,59 | 100 | 15,55 | 100 | – | 60 | 1,62 | – | 1,57 | 1,68 | – | – | 1,62 | – | 1,62 | 1,62 | – | – | 1,62 | 1,62 | – | – | 2,21 |
| Продолжение табл. 1  Table 1 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Yoldia johanni* | V | -0,39 | 16,06 | 5,55 | 52,63 | – | 40 | 1,50 | – | 1,36 | 1,65 | – | – | 1,63 | – | 1,50 | 1,50 | – | – | 1,50 | 1,50 | – | – | 1,76 |
| *Arcuatula senhousia* | VI | -31,10 | 100 | 33,19 | 0,83 | – | 500 | 2,29 | 5,00 | 2,22 | 2,35 | 5,00 | 5,00 | 2,29 | 4,96 | 2,29 | 2,29 | 5,00 | 5,00 | 2,29 | 2,29 | 5,00 | 5,00 | 2,07 |
| *Axinopsida subquadrata* | VI | 2,30 | 2,40 | -13,24 | 8,70 | – | 145 | 1,00 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 2,36 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 2,26 |
| *Lumbrineris japonica* | VI | -6,01 | 17,85 | 10,00 | 0,00 | – | 150 | 2,79 | 5,00 | 2,32 | 3,27 | 5,00 | 5,00 | 2,80 | 5,00 | 2,79 | 2,79 | 5,00 | 5,00 | 2,79 | 2,79 | 5,00 | 5,00 | 2,58 |
| *Phoronopsis harmeri* | VI | -4,13 | 11,44 | 7,38 | 0,00 | – | 6600 | 1,00 | 3,01 | 1,00 | 1,00 | 2,37 | 3,66 | 1,00 | 3,01 | 1,00 | 1,00 | 3,01 | 3,01 | 1,00 | 1,00 | 3,01 | 3,01 | 2,62 |
| *Theora lubrica* | VI | -5,18 | 19,03 | 7,25 | 0,88 | – | 350 | 2,31 | 5,00 | 1,99 | 2,63 | 5,00 | 5,00 | 2,31 | 4,79 | 2,31 | 2,31 | 5,00 | 5,00 | 2,31 | 2,31 | 5,00 | 5,00 | 2,40 |
| *Acila insignis* | VII | -2,75 | 18,28 | 5,34 | 0,15 | 2,77 | 800 | 1,88 | 5,00 | 1,52 | 2,25 | 5,00 | 5,00 | 1,90 | 5,00 | 1,88 | 1,88 | 5,00 | 5,00 | 1,88 | 1,88 | 5,00 | 5,00 | 1,98 |
| *Asterias amurensis* | VII | 1,48 | 4,85 | -9,16 | 1,08 | 33,69 | 15 | 1,00 | 4,51 | 1,00 | 1,00 | 4,20 | 4,85 | 1,73 | 4,52 | 1,00 | 1,00 | 4,51 | 4,51 | 1,00 | 1,00 | 4,51 | 4,51 | 2,61 |
| Capitellidae gen. sp. | VII | -6,15 | 17,31 | 9,16 | 2,10 | -1,92 | 750 | 1,00 | 2,76 | 1,00 | 1,00 | 2,36 | 3,18 | 1,19 | 2,76 | 1,00 | 1,00 | 2,76 | 2,76 | 1,00 | 1,00 | 2,76 | 2,76 | 2,25 |
| *Diastylis alaskensis* | VII | -10,50 | 23,52 | 13,26 | 25,07 | -0,31 | 150 | 1,00 | 3,02 | 1,00 | 1,00 | 2,73 | 3,31 | 1,29 | 3,08 | 1,00 | 1,00 | 3,02 | 3,02 | 1,00 | 1,00 | 3,02 | 3,02 | 2,71 |
| *Dipolydora cardalia* | VII | -40,73 | 76,01 | 42,66 | 48,48 | -0,79 | 15000 | 1,00 | 3,19 | 1,00 | 1,00 | 3,12 | 3,27 | 1,83 | 3,47 | 1,00 | 1,00 | 3,19 | 3,19 | 1,00 | 1,00 | 3,19 | 3,19 | 2,66 |
| *Ennucula tenuis* | VII | -11,50 | 22,86 | 13,19 | 16,88 | -0,57 | 600 | 1,00 | 3,16 | 1,00 | 1,00 | 2,91 | 3,41 | 1,49 | 3,27 | 1,00 | 1,00 | 3,16 | 3,16 | 1,00 | 1,00 | 3,16 | 3,16 | 2,47 |
| *Eteone bistriata* | VII | -27,10 | 100 | 27,90 | 21,95 | -1,04 | 40 | 1,00 | 2,10 | 1,00 | 1,00 | 2,05 | 2,15 | 1,35 | 2,43 | 1,00 | 1,00 | 2,10 | 2,10 | 1,00 | 1,00 | 2,10 | 2,10 | 2,31 |
| *Eulalia bilineata* | VII | -7,34 | 17,73 | 10,00 | 1,33 | -3,02 | 450 | 1,00 | 2,96 | 1,00 | 1,00 | 2,58 | 3,33 | 1,21 | 2,94 | 1,00 | 1,00 | 2,96 | 2,96 | 1,00 | 1,00 | 2,96 | 2,96 | 2,58 |
| *Glycera* sp. | VII | 16,10 | 18,24 | 5,98 | 1,17 | -4,06 | 170 | 1,00 | 5,00 | 1,00 | 1,86 | 5,00 | 5,00 | 1,50 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 1,86 |
| *Harmothoe* sp. | VII | -36,89 | 58,76 | 37,75 | 57,97 | -0,57 | 25 | 1,00 | 3,54 | 1,00 | 1,00 | 3,45 | 3,63 | 1,91 | 3,62 | 1,00 | 1,00 | 3,54 | 3,54 | 1,00 | 1,00 | 3,54 | 3,54 | 2,82 |
| *Magelona longicornis* | VII | -1,18 | 7,05 | 5,07 | -0,01 | 6,49 | 120 | 1,00 | 2,70 | 1,00 | 1,00 | 1,51 | 3,95 | 1,00 | 2,82 | 1,00 | 1,00 | 2,70 | 2,70 | 1,00 | 1,00 | 2,70 | 2,70 | 2,46 |
| *Magelona pacifica* | VII | -4,13 | 27,39 | 7,24 | 0,21 | -11,0 | 310 | 1,00 | 1,83 | 1,00 | 1,00 | 1,57 | 2,09 | 1,07 | 1,82 | 1,00 | 1,00 | 1,83 | 1,83 | 1,00 | 1,00 | 1,83 | 1,83 | 1,59 |
| *Melinna elisabethae* | VII | -3,84 | 11,81 | 6,63 | 0,23 | 1,79 | 360 | 1,00 | 2,77 | 1,00 | 1,00 | 2,19 | 3,35 | 1,00 | 2,77 | 1,00 | 1,00 | 2,77 | 2,77 | 1,00 | 1,00 | 2,77 | 2,77 | 2,44 |
| *Mya arenaria* | VII | 3,91 | -0,34 | 13,65 | 0,68 | -100 | 40 | 1,00 | 2,93 | 1,00 | 1,00 | 2,70 | 3,16 | 1,00 | 2,11 | 1,00 | 1,00 | 2,93 | 2,93 | 1,00 | 1,00 | 2,93 | 2,93 | 1,76 |
| *Nephtys caeca* | VII | -9,58 | 44,91 | 11,89 | 1,76 | -4,59 | 30 | 1,00 | 1,95 | 1,00 | 1,00 | 1,82 | 2,10 | 1,22 | 2,06 | 1,00 | 1,00 | 1,95 | 1,95 | 1,00 | 1,00 | 1,95 | 1,95 | 1,78 |
| *Nephtys* sp. | VII | 60,67 | 100,0 | 7,18 | 0,95 | -5,81 | 45 | 1,00 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 1,49 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 1,85 |
| *Nereis* sp. | VII | -5,32 | 21,01 | 7,55 | 0,58 | 33,68 | 28 | 2,23 | 4,33 | 1,93 | 2,52 | 4,13 | 4,53 | 2,22 | 4,36 | 2,23 | 2,23 | 4,33 | 4,33 | 2,23 | 2,23 | 4,33 | 4,33 | 2,67 |
| *Ophiura sarsii* | VII | 2,52 | -1,18 | 0,10 | 0,29 | -100 | 1600 | 2,00 | 5,00 | 1,80 | 2,17 | 2,61 | 5,00 | 1,67 | 3,74 | 2,00 | 2,00 | 5,00 | 5,00 | 2,00 | 2,00 | 5,00 | 5,00 | 2,23 |
| *Pectinaria* sp. | VII | 23,02 | 49,19 | 1,95 | 0,71 | 1,95 | 70 | 1,00 | 1,71 | 1,00 | 1,00 | 1,43 | 1,98 | 1,00 | 1,54 | 1,00 | 1,00 | 1,71 | 1,71 | 1,00 | 1,00 | 1,71 | 1,71 | 2,30 |
| *Pherusa plumosa* | VII | -30,93 | 60,79 | 31,81 | 44,26 | -0,63 | 125 | 1,00 | 5,00 | 1,00 | 3,15 | 5,00 | 5,00 | 2,92 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 2,49 |
| *Philinopsis giglioli* | VII | -10,52 | 100 | 9,48 | 0,07 | 66,21 | 80 | 1,40 | 5,00 | 1,35 | 1,45 | 5,00 | 5,00 | 1,44 | 5,00 | 1,40 | 1,71 | 5,00 | 5,00 | 1,40 | 1,71 | 5,00 | 5,00 | 1,52 |
| Phyllodocidae gen. sp. | VII | 2,29 | 2,90 | 12,04 | -0,17 | 50,52 | 50 | 1,49 | 5,00 | 1,24 | 1,73 | 5,00 | 5,00 | 2,37 | 5,00 | 1,49 | 1,49 | 5,00 | 5,00 | 1,49 | 1,49 | 5,00 | 5,00 | 2,30 |
| *Priapulus caudatus* | VII | -16,83 | 28,25 | 18,08 | 53,24 | -0,26 | 60 | 1,00 | 3,47 | 1,00 | 1,00 | 3,27 | 3,67 | 1,64 | 3,52 | 1,00 | 1,00 | 3,47 | 3,47 | 1,00 | 1,00 | 3,47 | 3,47 | 2,70 |
| Окончание табл. 1  Table 1 finished | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| Групповые модели | | | | | | | | | | | | | | | | | | | | | | | | |
| ES | V | 0,01 | 9,40 | -0,21 | 28,83 | – | 18 | 1,17 | – | NA | 1,46 | – | – | 1,40 | – | 0,59 | 2,31 | – | – | 1,00 | 1,59 | – | – | 2,11 |
| S | V | 0,16 | 8,17 | 2,99 | 23,00 | – | 28 | 1,67 | – | 1,35 | 2,00 | – | – | 1,89 | – | 0,94 | 2,91 | – | – | 1,33 | 2,13 | – | – | 2,22 |
| MT | IV | -3,01 | 8,79 | 3,08 | – | – | 11 | 2,39 | – | 1,79 | 2,99 | – | – | 2,39 | – | 0,88 | 3,90 | – | – | 1,72 | 3,06 | – | – | 2,29 |
| T | V | -0,66 | 8,40 | 7,59 | 12,74 | – | 650 | 3,19 | – | 2,59 | 3,76 | – | – | 3,10 | – | 1,45 | 4,64 | – | – | 2,44 | 3,83 | – | – | 2,36 |
| ET | II | 4,40 | -3,60 | – | – | – | 28 | 5,00 | – | – | – | – | – | 6,86 | – | 5,00 | 5,00 | – | – | 5,00 | 5,00 | – | – | 2,51 |

*Примечание.* NA – параметр оценить невозможно, прочерк – параметр отсутствует.

Таблица 2

Некоторые параметры кривых отклика, полученных на основе встречаемости таксонов макрозообентоса

Table 2

Some parameters of response curves obtained using occurrence of macrozoobenthic taxa

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Ampharete acutifrons* | I | 3,26 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,06 |
| *Asterina pectinifera* | I | 2,70 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,14 |
| *Bela erosa* | I | 2,48 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,24 |
| *Cerebratulus signatus* | I | 3,26 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,45 |
| *Cerebratulus* sp*.* | I | 2,84 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,25 |
| *Eteone bistriata* | I | 3,26 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,31 |
| *Eteone* sp*.* | I | 1,98 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,44 |
| *Lanassa* sp*.* | I | 3,16 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,30 |
| Lineidae gen. sp. | I | 2,43 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,15 |
| *Melita* sp*.* | I | 2,84 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,24 |
| *Mizuhopecten yessoensis* | I | 3,26 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,44 |
| Nemertea fam. gen. sp. | I | 0,97 | – | – | – | – | 2 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,37 |
| *Pagurus* sp*.* | I | 3,26 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,15 |
| *Pectinaria* sp*.* | I | 4,90 | – | – | – | – | 10 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,30 |
| *Phyllodoce* sp. | I | 3,26 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,31 |
| Phyllodocidae gen. sp. | I | 2,29 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,30 |
| *Pleusymtes* sp*.* | I | 2,99 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,13 |
| *Polydora* sp*.* | I | 2,43 | – | – | – | – | 1 | NA | – | 0,00 | NA | – | – | 3,00 | – | 1,00 | 5,00 | – | – | 1,00 | 5,00 | – | – | 2,48 |
| *Ampharete sibirica* | II | 0,92 | 7,58 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,11 | – | 1,00 | 2,21 | – | – | 1,00 | 1,34 | – | – | 1,62 |
| Ampharetidae gen. sp. | II | 1,55 | 3,70 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,16 | – | 1,00 | 3,35 | – | – | 1,00 | 1,63 | – | – | 1,89 |
| *Amphiodia fissa* | II | -0,80 | 7,64 | – | – | – | 1 | 1,00 | – | 1,42 | – | – | – | -0,69 | – | 1,00 | 2,61 | – | – | 1,00 | 1,59 | – | – | 1,72 |
| *Anisocorbula venusta* | II | 4,05 | -1,99 | – | – | – | 1 | 5,00 | – | NA | – | – | – | 6,67 | – | 1,00 | 5,00 | – | – | 3,89 | 5,00 | – | – | 2,82 |
| *Anonyx* sp*.* | II | 2,06 | 4,53 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,40 | – | 1,00 | 2,86 | – | – | 1,00 | 1,48 | – | – | 1,81 |
| *Aphelochaeta pacifica* | II | 1,49 | -3,05 | – | – | – | 1 | 5,00 | – | 2,95 | – | – | – | 5,54 | – | 1,00 | 5,00 | – | – | 2,96 | 5,00 | – | – | 2,72 |
| *Capitella capitata* | II | 2,50 | -2,45 | – | – | – | 1 | 5,00 | – | NA | – | – | – | 6,12 | – | 1,00 | 5,00 | – | – | 3,66 | 5,00 | – | – | 2,81 |
| Caprellidae gen. sp. | II | 1,73 | 5,17 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,32 | – | 1,00 | 2,66 | – | – | 1,00 | 1,44 | – | – | 1,76 |
| *Cheilonereis cyclurus* | II | 5,17 | -5,52 | – | – | – | 1 | 5,00 | – | 4,75 | – | – | – | 6,67 | – | 2,97 | 5,00 | – | – | 4,32 | 5,00 | – | – | 3,58 |
| *Chone cincta* | II | 7,71 | -8,05 | – | – | – | 1 | 5,00 | – | 4,83 | – | – | – | 6,82 | – | 3,61 | 5,00 | – | – | 4,53 | 5,00 | – | – | 4,18 |
| Продолжение табл. 2  Table 2 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Cryptonatica janthostoma* | II | 1,95 | 3,09 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,18 | – | 1,00 | 3,74 | – | – | 1,00 | 1,72 | – | – | 1,95 |
| *Derjuginella rufofasciata* | II | 2,11 | 2,43 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -0,98 | – | 1,00 | 4,46 | – | – | 1,00 | 1,90 | – | – | 2,02 |
| *Diastylis* sp*.* | II | 0,55 | 7,31 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,02 | – | 1,00 | 2,32 | – | – | 1,00 | 1,39 | – | – | 1,65 |
| *Diplodonta semiosperoides* | II | 1,25 | 9,36 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,18 | – | 1,00 | 1,95 | – | – | 1,00 | 1,26 | – | – | 1,53 |
| *Echinocardium cordatum* | II | 0,65 | 6,76 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,03 | – | 1,00 | 2,40 | – | – | 1,00 | 1,41 | – | – | 1,68 |
| *Felaniella usta* | II | 1,38 | 8,41 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,22 | – | 1,00 | 2,04 | – | – | 1,00 | 1,28 | – | – | 1,57 |
| Gastropoda fam. gen. sp. | II | 1,18 | 4,37 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,10 | – | 1,00 | 3,05 | – | – | 1,00 | 1,56 | – | – | 1,84 |
| *Glycera* sp*.* | II | -1,04 | 5,97 | – | – | – | 1 | 1,00 | – | 1,70 | – | – | – | -0,49 | – | 1,00 | 3,17 | – | – | 1,00 | 1,84 | – | – | 1,86 |
| *Grandifoxus longirostris* | II | 0,97 | 11,57 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,11 | – | 1,00 | 1,79 | – | – | 1,00 | 1,22 | – | – | 1,45 |
| *Grandifoxus robustus* | II | 1,50 | 7,68 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,25 | – | 1,00 | 2,13 | – | – | 1,00 | 1,30 | – | – | 1,60 |
| *Liocyma fluctuosa* | II | 1,06 | 6,76 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,14 | – | 1,00 | 2,34 | – | – | 1,00 | 1,37 | – | – | 1,66 |
| *Macoma nipponica* | II | 4,18 | -2,28 | – | – | – | 1 | 5,00 | – | NA | – | – | – | 6,83 | – | 1,28 | 5,00 | – | – | 4,02 | 5,00 | – | – | 2,90 |
| *Mactra chinensis* | II | 0,75 | 13,54 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,07 | – | 1,00 | 1,69 | – | – | 1,00 | 1,20 | – | – | 1,40 |
| Maldanidae gen. sp. | II | 1,25 | 2,26 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -0,59 | – | 1,00 | 4,94 | – | – | 1,00 | 2,08 | – | – | 2,06 |
| *Mya arenaria* | II | 1,94 | 5,10 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,39 | – | 1,00 | 2,66 | – | – | 1,00 | 1,44 | – | – | 1,76 |
| *Neomysis* sp*.* | II | 0,55 | 14,32 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,04 | – | 1,00 | 1,67 | – | – | 1,00 | 1,20 | – | – | 1,39 |
| *Nephtys longosetosa* | II | 1,25 | 9,36 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,18 | – | 1,00 | 1,95 | – | – | 1,00 | 1,26 | – | – | 1,53 |
| *Nephtys* sp*.* | II | 0,82 | 4,42 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -0,98 | – | 1,00 | 3,10 | – | – | 1,00 | 1,60 | – | – | 1,85 |
| *Onuphis* sp*.* | II | 0,56 | 11,01 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,05 | – | 1,00 | 1,87 | – | – | 1,00 | 1,26 | – | – | 1,48 |
| *Ophelina acuminata* | II | 2,01 | 4,29 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,37 | – | 1,00 | 2,97 | – | – | 1,00 | 1,51 | – | – | 1,83 |
| *Philine* sp*.* | II | 1,45 | 2,05 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -0,53 | – | 1,00 | 5,00 | – | – | 1,00 | 2,15 | – | – | 2,08 |
| *Praxillella gracilis* | II | 1,29 | 2,96 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -0,91 | – | 1,00 | 4,00 | – | – | 1,00 | 1,82 | – | – | 1,98 |
| *Praxillella* sp*.* | II | -0,07 | 4,98 | – | – | – | 1 | 1,00 | – | 1,06 | – | – | – | -0,71 | – | 1,00 | 3,13 | – | – | 1,00 | 1,69 | – | – | 1,85 |
| *Prionospio malmgreni* | II | 4,18 | -2,28 | – | – | – | 1 | 5,00 | – | NA | – | – | – | 6,83 | – | 1,28 | 5,00 | – | – | 4,02 | 5,00 | – | – | 2,90 |
| *Schistomeringos japonica* | II | 2,86 | -4,91 | – | – | – | 1 | 5,00 | – | 3,33 | – | – | – | 5,97 | – | 1,71 | 5,00 | – | – | 3,45 | 5,00 | – | – | 3,02 |
| *Siliqua alta* | II | 1,11 | 10,45 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,14 | – | 1,00 | 1,86 | – | – | 1,00 | 1,24 | – | – | 1,49 |
| *Solen krusensterni* | II | 1,35 | 8,64 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,21 | – | 1,00 | 2,02 | – | – | 1,00 | 1,28 | – | – | 1,56 |
| Solenogastres fam. gen. sp. | II | 1,69 | 4,58 | – | – | – | 1 | 1,00 | – | NA | – | – | – | -1,29 | – | 1,00 | 2,87 | – | – | 1,00 | 1,50 | – | – | 1,81 |
| *Spiophanes bombyx* | II | 2,57 | 2,11 | – | – | – | 8 | 1,00 | – | NA | – | – | – | -0,89 | – | 1,00 | 1,00 | – | – | 1,00 | 1,00 | – | – | 2,05 |
| *Ampelisca macrocephala* | III | -72,13 | 100 | 1,94 | – | – | 1 | 1,00 | 3,80 | 3,89 | – | – | – | 0,44 | – | 1,00 | 3,96 | – | – | 1,00 | 3,87 | – | – | 2,27 |
| Продолжение табл. 2  Table 2 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Ampharete* sp*.* | III | -70,74 | 100 | 1,35 | – | – | 1 | 1,00 | 3,74 | 3,83 | – | – | – | 0,41 | – | 1,00 | 3,90 | – | – | 1,00 | 3,81 | – | – | 2,34 |
| *Asychis* sp*.* | III | -27,22 | 100 | 2,30 | – | – | 1 | 1,00 | 2,00 | 2,09 | – | – | – | -0,46 | – | 1,00 | 2,16 | – | – | 1,00 | 2,07 | – | – | 1,64 |
| *Axinopsida subquadrata* | III | -72,50 | 100 | 0,71 | – | – | 1 | 1,00 | 3,81 | 3,90 | – | – | – | 0,45 | – | 1,00 | 3,97 | – | – | 1,00 | 3,88 | – | – | 2,26 |
| *Byblis* sp*.* | III | -26,33 | 100 | 2,27 | – | – | 1 | 1,00 | 1,97 | 2,05 | – | – | – | -0,47 | – | 1,00 | 2,13 | – | – | 1,00 | 2,04 | – | – | 1,58 |
| *Carinomella* sp*.* | III | -27,22 | 100 | 2,30 | – | – | 1 | 1,00 | 2,00 | 2,09 | – | – | – | -0,46 | – | 1,00 | 2,16 | – | – | 1,00 | 2,07 | – | – | 1,64 |
| *Crangon amurensis* | III | 17,94 | -100 | 2,85 | – | – | 1 | 1,81 | 5,00 | 1,72 | – | – | – | 5,36 | – | 1,64 | 5,00 | – | – | 1,74 | 5,00 | – | – | 2,56 |
| *Echinarachnius parma* | III | -11,46 | 100 | 1,05 | – | – | 1 | 1,00 | 1,37 | 1,46 | – | – | – | -0,77 | – | 1,00 | 1,53 | – | – | 1,00 | 1,44 | – | – | 1,28 |
| *Glycinde armigera* | III | -79,97 | 100 | 1,67 | – | – | 1 | 1,00 | 4,11 | 4,20 | – | – | – | 0,60 | – | 1,00 | 4,27 | – | – | 1,00 | 4,18 | – | – | 2,34 |
| *Goniada maculata* | III | -72,28 | 100 | -0,07 | – | – | 1 | 1,00 | 3,80 | 3,89 | – | – | – | 0,45 | – | 1,00 | 3,97 | – | – | 1,00 | 3,87 | – | – | 2,26 |
| *Harmothoe imbricata* | III | 3,88 | -12,07 | 1,88 | – | – | 1 | 3,01 | 5,00 | 2,29 | – | – | – | 5,62 | – | 1,67 | 5,00 | – | – | 2,43 | 5,00 | – | – | 2,92 |
| Holothuroidea fam. gen. sp. | III | -32,80 | 100 | 2,47 | – | – | 1 | 1,00 | 2,22 | 2,31 | – | – | – | -0,34 | – | 1,00 | 2,39 | – | – | 1,00 | 2,29 | – | – | 1,70 |
| Isopoda fam. gen. sp. | III | -34,93 | 100 | 2,57 | – | – | 1 | 1,00 | 2,31 | 2,40 | – | – | – | -0,30 | – | 1,00 | 2,47 | – | – | 1,00 | 2,38 | – | – | 1,74 |
| *Lumbrineris longifolia* | III | -13,55 | 15,46 | -1,87 | – | – | 1 | 1,00 | 3,94 | 4,50 | – | – | – | 0,77 | – | 1,00 | 4,98 | – | – | 1,00 | 4,39 | – | – | 2,29 |
| *Magelona pacifica* | III | -25,95 | 100 | 1,64 | – | – | 1 | 1,00 | 1,95 | 2,04 | – | – | – | -0,48 | – | 1,00 | 2,11 | – | – | 1,00 | 2,02 | – | – | 1,59 |
| *Mya pseudoarenaria* | III | 18,39 | -100 | 2,59 | – | – | 1 | 1,82 | 5,00 | 1,74 | – | – | – | 5,37 | – | 1,66 | 5,00 | – | – | 1,75 | 5,00 | – | – | 2,56 |
| *Nephtys caeca* | III | -36,65 | 100 | 2,64 | – | – | 1 | 1,00 | 2,38 | 2,47 | – | – | – | -0,27 | – | 1,00 | 2,54 | – | – | 1,00 | 2,45 | – | – | 1,78 |
| Nereididae gen. sp. | III | 22,40 | -100 | 2,85 | – | – | 1 | 1,98 | 5,00 | 1,90 | – | – | – | 5,45 | – | 1,82 | 5,00 | – | – | 1,91 | 5,00 | – | – | 2,74 |
| *Nereis* sp*.* | III | 3,03 | -19,58 | 1,75 | – | – | 1 | 2,07 | 5,00 | 1,62 | – | – | – | 5,30 | – | 1,24 | 5,00 | – | – | 1,71 | 5,00 | – | – | 2,67 |
| *Nereis vexillosa* | III | 45,66 | -100 | 1,75 | – | – | 1 | 2,91 | 5,00 | 2,83 | – | – | – | 5,91 | – | 2,75 | 5,00 | – | – | 2,84 | 5,00 | – | – | 3,40 |
| *Odius kelleri* | III | 21,94 | -100 | 2,86 | – | – | 1 | 1,97 | 5,00 | 1,88 | – | – | – | 5,44 | – | 1,80 | 5,00 | – | – | 1,90 | 5,00 | – | – | 2,51 |
| *Onuphis iridescens* | III | -52,11 | 100 | 1,69 | – | – | 1 | 1,00 | 3,00 | 3,08 | – | – | – | 3,90 | – | 1,00 | 3,16 | – | – | 1,00 | 3,07 | – | – | 2,04 |
| *Ophiura sarsii* | III | -74,72 | 100 | -0,45 | – | – | 1 | 1,00 | 3,90 | 3,99 | – | – | – | 0,49 | – | 1,00 | 4,06 | – | – | 1,00 | 3,97 | – | – | 2,25 |
| *Paradorippe granulata* | III | 14,39 | -100 | 2,38 | – | – | 1 | 1,66 | 5,00 | 1,58 | – | – | – | 5,29 | – | 1,50 | 5,00 | – | – | 1,59 | 5,00 | – | – | 2,42 |
| *Pherusa plumosa* | III | 12,35 | -100 | 1,80 | – | – | 1 | 1,58 | 5,00 | 1,49 | – | – | – | 5,25 | – | 1,42 | 5,00 | – | – | 1,51 | 5,00 | – | – | 2,49 |
| *Philine argentata* | III | 28,82 | -100 | 1,65 | – | – | 1 | 2,24 | 5,00 | 2,15 | – | – | – | 5,58 | – | 2,08 | 5,00 | – | – | 2,17 | 5,00 | – | – | 3,13 |
| *Philine orientalis* | III | 14,63 | -100 | 3,72 | – | – | 9 | 1,67 | 5,00 | 1,59 | – | – | – | 5,29 | – | 3,47 | 5,00 | – | – | 3,47 | 5,00 | – | – | 2,46 |
| *Philinopsis giglioli* | III | -13,91 | 61,36 | 1,52 | – | – | 1 | 1,00 | 1,76 | 1,91 | – | – | – | -0,55 | – | 1,00 | 2,03 | – | – | 1,00 | 1,88 | – | – | 1,52 |
| *Pholoe minuta* | III | -67,69 | 100 | 1,91 | – | – | 1 | 1,00 | 3,62 | 3,71 | – | – | – | 0,35 | – | 1,00 | 3,78 | – | – | 1,00 | 3,69 | – | – | 2,34 |
| *Phoronopsis harmeri* | III | 10,68 | -100 | 1,45 | – | – | 1 | 1,51 | 5,00 | 1,43 | – | – | – | 5,21 | – | 1,35 | 5,00 | – | – | 1,44 | 5,00 | – | – | 2,62 |
| *Pinnixa rathbuni* | III | 14,81 | -100 | 1,88 | – | – | 1 | 1,68 | 5,00 | 1,59 | – | – | – | 5,30 | – | 1,52 | 5,00 | – | – | 1,61 | 5,00 | – | – | 2,53 |
| Polynoidae gen. sp. 4 | III | 49,35 | -100 | 1,58 | – | – | 1 | 3,06 | 5,00 | 2,97 | – | – | – | 5,99 | – | 2,90 | 5,00 | – | – | 2,99 | 5,00 | – | – | 3,58 |
| Продолжение табл. 2  Table 2 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Protocallithaca adamsi.* | III | -79,69 | 100 | 2,28 | – | – | 2 | 1,00 | 4,10 | 4,19 | – | – | – | 0,59 | – | 1,00 | 4,23 | – | – | 1,00 | 1,94 | – | – | 2,37 |
| *Protomedeia microdactyla* | III | -27,60 | 100 | 2,31 | – | – | 1 | 1,00 | 2,02 | 2,10 | – | – | – | -0,45 | – | 1,00 | 2,18 | – | – | 1,00 | 2,09 | – | – | 1,71 |
| Sabellidae gen. sp. | III | -56,21 | 100 | 2,35 | – | – | 1 | 1,00 | 3,16 | 3,25 | – | – | – | 0,12 | – | 1,00 | 3,32 | – | – | 1,00 | 3,23 | – | – | 2,17 |
| *Scoloplos armiger* | III | -74,70 | 100 | 4,73 | – | – | 1 | 1,00 | 3,90 | 3,99 | – | – | – | 0,49 | – | 1,00 | 1,94 | – | – | 1,00 | 1,94 | – | – | 2,23 |
| Sipuncula fam. gen. sp. | III | -67,06 | 100 | 2,19 | – | – | 1 | 1,00 | 3,59 | 3,68 | – | – | – | 0,34 | – | 1,00 | 3,76 | – | – | 1,00 | 3,67 | – | – | 2,19 |
| *Sternaspis scutata* | III | -35,63 | 100 | 2,19 | – | – | 1 | 1,00 | 2,34 | 2,43 | – | – | – | -0,29 | – | 1,00 | 2,50 | – | – | 1,00 | 2,41 | – | – | 1,77 |
| *Synidotea epimerata* | III | -22,67 | 74,13 | 2,46 | – | – | 1 | 1,00 | 2,10 | 2,22 | – | – | – | -0,39 | – | 1,00 | 2,32 | – | – | 1,00 | 2,20 | – | – | 1,70 |
| Terebellidae gen. sp. | III | -67,01 | 100 | 2,14 | – | – | 1 | 1,00 | 3,59 | 3,68 | – | – | – | 0,34 | – | 1,00 | 3,75 | – | – | 1,00 | 3,66 | – | – | 2,26 |
| *Theora lubrica* | III | 2,50 | -22,23 | 1,03 | – | – | 1 | 1,84 | 5,00 | 1,45 | – | – | – | 5,22 | – | 1,12 | 5,00 | – | – | 1,53 | 5,00 | – | – | 2,54 |
| *Yoldia* sp*.* | III | -57,30 | 100 | 2,82 | – | – | 1 | 1,00 | 3,20 | 3,29 | – | – | – | 0,15 | – | 1,00 | 3,37 | – | – | 1,00 | 3,27 | – | – | 2,11 |
| *Acila insignis* | IV | -2,52 | 10,76 | 2,17 | – | – | 1 | 1,87 | – | 1,38 | 2,36 | – | – | 1,87 | – | 1,00 | 3,11 | – | – | 1,32 | 2,42 | – | – | 1,98 |
| Actiniaria fam. gen. sp. | IV | -1,73 | 8,12 | 2,80 | – | – | 1 | 2,11 | – | 1,44 | 2,79 | – | – | 2,11 | – | 1,00 | 3,78 | – | – | 1,37 | 2,86 | – | – | 2,15 |
| *Alveinus ojianus* | IV | -1,78 | 15,65 | 2,59 | – | – | 1 | 1,56 | – | 1,21 | 1,90 | – | – | 1,56 | – | 1,00 | 2,42 | – | – | 1,18 | 1,94 | – | – | 1,68 |
| *Amphiodia periercta* | IV | -5,78 | 31,85 | 6,32 | – | – | 1 | 1,76 | – | 1,59 | 1,93 | – | – | 1,76 | – | 1,34 | 2,18 | – | – | 1,57 | 1,95 | – | – | 1,75 |
| Amphipoda fam. gen. sp. | IV | -1,98 | 9,78 | 1,89 | – | – | 1 | 1,79 | – | 1,25 | 2,33 | – | – | 1,79 | – | 1,00 | 3,15 | – | – | 1,19 | 2,39 | – | – | 1,96 |
| Aphroditidae gen. sp. | IV | -2,44 | 23,03 | 4,45 | – | – | 3 | 1,60 | – | 1,33 | 1,86 | – | – | 1,60 | – | 1,21 | 1,99 | – | – | 1,60 | 1,60 | – | – | 1,65 |
| *Arca boucardi* | IV | -4,73 | 16,07 | 7,99 | – | – | 3 | 2,58 | – | 2,12 | 3,04 | – | – | 2,58 | – | 1,95 | 3,21 | – | – | 2,58 | 2,58 | – | – | 2,47 |
| *Arcuatula senhousia* | IV | -5,44 | 23,03 | 6,77 | – | – | 1 | 2,06 | – | 1,82 | 2,30 | – | – | 2,06 | – | 1,47 | 2,65 | – | – | 1,79 | 2,33 | – | – | 2,07 |
| *Aricidea catherinae* | IV | -4,18 | 11,37 | 6,32 | – | – | 3 | 2,85 | – | 2,30 | 3,39 | – | – | 2,85 | – | 2,05 | 3,64 | – | – | 2,85 | 2,85 | – | – | 2,61 |
| *Aricidea suecica* | IV | -8,42 | 26,26 | 9,66 | – | – | 1 | 2,38 | – | 2,17 | 2,59 | – | – | 2,38 | – | 1,86 | 2,90 | – | – | 2,14 | 2,61 | – | – | 2,35 |
| Ascidia fam. gen. sp. | IV | -3,84 | 9,97 | 5,08 | – | – | 1 | 2,79 | – | 2,23 | 3,35 | – | – | 2,79 | – | 1,42 | 4,15 | – | – | 2,17 | 3,40 | – | – | 2,54 |
| *Balanus rostratus* | IV | -4,65 | 12,17 | 6,31 | – | – | 1 | 2,80 | – | 2,32 | 3,28 | – | – | 2,80 | – | 1,66 | 3,94 | – | – | 2,28 | 3,32 | – | – | 2,58 |
| *Brada* sp*.* | IV | -15,72 | 50,18 | 15,85 | – | – | 1 | 2,26 | – | 2,15 | 2,36 | – | – | 2,26 | – | 1,99 | 2,52 | – | – | 2,14 | 2,38 | – | – | 2,26 |
| *Cadella lubrica* | IV | -1,73 | 17,95 | 3,13 | – | – | 1 | 1,54 | – | 1,23 | 1,86 | – | – | 1,54 | – | 1,00 | 2,31 | – | – | 1,20 | 1,89 | – | – | 1,65 |
| Capitellidae gen. sp. | IV | -3,34 | 10,40 | 3,25 | – | – | 1 | 2,27 | – | 1,76 | 2,77 | – | – | 2,27 | – | 1,00 | 3,54 | – | – | 1,70 | 2,83 | – | – | 2,25 |
| *Cerebratulus marginatus* | IV | -4,34 | 13,65 | 5,81 | – | – | 2 | 2,49 | – | 2,07 | 2,90 | – | – | 2,49 | – | 1,71 | 3,27 | – | – | 2,49 | 2,49 | – | – | 2,38 |
| *Charisma candida* | IV | -8,73 | 29,11 | 9,85 | – | – | 1 | 2,28 | – | 2,09 | 2,47 | – | – | 2,28 | – | 1,81 | 2,74 | – | – | 2,07 | 2,49 | – | – | 2,29 |
| *Cirratulus cirratus* | IV | -4,67 | 9,09 | 5,60 | – | – | 1 | 3,26 | – | 2,66 | 3,86 | – | – | 3,26 | – | 1,78 | 4,74 | – | – | 2,60 | 3,92 | – | – | 2,85 |
| *Cistenides granulata* | IV | -2,75 | 12,58 | 7,13 | – | – | 6 | 2,57 | – | 1,85 | 3,29 | – | – | 2,57 | – | 2,11 | 3,04 | – | – | 2,57 | 2,57 | – | – | 2,41 |
| *Crassicorophium crassicorne* | IV | -9,17 | 25,39 | 8,47 | – | – | 1 | 2,39 | – | 2,18 | 2,60 | – | – | 2,39 | – | 1,86 | 2,92 | – | – | 2,15 | 2,62 | – | – | 2,36 |
| *Diastylis alaskensis* | IV | -4,85 | 12,27 | 7,29 | – | – | 4 | 2,98 | – | 2,45 | 3,50 | – | – | 2,98 | – | 2,36 | 3,60 | – | – | 2,98 | 2,98 | – | – | 2,71 |
| Продолжение табл. 2  Table 2 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Diastylis goodsiri* | IV | -5,33 | 20,67 | 6,87 | – | – | 1 | 2,18 | – | 1,90 | 2,46 | – | – | 2,18 | – | 1,51 | 2,85 | – | – | 1,88 | 2,48 | – | – | 2,20 |
| *Diastylopsis dawsoni* | IV | -6,61 | 17,43 | 6,93 | – | – | 1 | 2,55 | – | 2,25 | 2,86 | – | – | 2,55 | – | 1,79 | 3,32 | – | – | 2,21 | 2,89 | – | – | 2,50 |
| *Ennucula tenuis* | IV | -1,54 | 5,68 | 4,03 | – | – | 9 | 2,96 | – | 1,82 | 4,10 | – | – | 2,96 | – | 2,96 | 2,96 | – | – | 2,96 | 2,96 | – | – | 2,47 |
| *Eteone longa* | IV | -4,31 | 7,92 | 4,90 | – | – | 1 | 3,33 | – | 2,65 | 4,00 | – | – | 3,33 | – | 1,64 | 5,00 | – | – | 2,57 | 4,08 | – | – | 2,78 |
| *Eulalia bilineata* | IV | -2,66 | 8,19 | 5,63 | – | – | 8 | 3,02 | – | 2,16 | 3,88 | – | – | 3,02 | – | 3,02 | 3,02 | – | – | 3,02 | 3,02 | – | – | 2,58 |
| *Eumida sanguinea* | IV | -8,18 | 18,48 | 9,23 | – | – | 1 | 2,88 | – | 2,59 | 3,18 | – | – | 2,88 | – | 2,15 | 3,62 | – | – | 2,56 | 3,21 | – | – | 2,75 |
| *Gaetice depressus* | IV | -3,13 | 10,85 | 5,15 | – | – | 1 | 2,53 | – | 1,97 | 3,09 | – | – | 2,53 | – | 1,22 | 3,83 | – | – | 1,92 | 3,13 | – | – | 2,40 |
| *Glycera capitata* | IV | -5,63 | 6,42 | 2,86 | – | – | 1 | 3,64 | – | 2,59 | 4,70 | – | – | 3,64 | – | 1,32 | 5,00 | – | – | 2,54 | 4,75 | – | – | 2,79 |
| *Glycera chirori* | IV | -13,14 | 27,41 | 13,30 | – | – | 1 | 2,93 | – | 2,74 | 3,12 | – | – | 2,93 | – | 2,45 | 3,41 | – | – | 2,71 | 3,14 | – | – | 2,84 |
| *Harmothoe* sp*.* | IV | -3,52 | 7,57 | 6,09 | – | – | 2 | 3,54 | – | 2,67 | 4,41 | – | – | 3,54 | – | 2,02 | 5,00 | – | – | 3,54 | 3,54 | – | – | 2,82 |
| *Lumbrineris japonica* | IV | -5,11 | 13,58 | 6,71 | – | – | 1 | 2,74 | – | 2,32 | 3,17 | – | – | 2,74 | – | 1,72 | 3,76 | – | – | 2,28 | 3,21 | – | – | 2,58 |
| *Macoma calcarea* | IV | -8,40 | 29,06 | 9,49 | – | – | 1 | 2,23 | – | 2,04 | 2,42 | – | – | 2,23 | – | 1,77 | 2,70 | – | – | 2,02 | 2,44 | – | – | 2,24 |
| *Macoma incongrua* | IV | -12,37 | 42,77 | 12,79 | – | – | 1 | 2,18 | – | 2,05 | 2,30 | – | – | 2,18 | – | 1,87 | 2,49 | – | – | 2,04 | 2,31 | – | – | 2,19 |
| *Macoma scarlatoi* | IV | -12,43 | 16,92 | 11,20 | – | – | 1 | 3,79 | – | 3,46 | 4,12 | – | – | 3,79 | – | 2,99 | 4,60 | – | – | 3,43 | 4,16 | – | – | 3,57 |
| *Macoma* sp*.* | IV | -3,41 | 5,29 | 3,56 | – | – | 1 | 3,63 | – | 2,64 | 4,63 | – | – | 3,63 | – | 1,13 | 5,00 | – | – | 2,52 | 4,75 | – | – | 2,75 |
| *Macoma tokyoensis* | IV | -4,00 | 13,97 | 5,26 | – | – | 1 | 2,33 | – | 1,93 | 2,73 | – | – | 2,33 | – | 1,35 | 3,30 | – | – | 1,89 | 2,77 | – | – | 2,30 |
| *Mediomastus californiensis* | IV | -3,35 | 8,54 | 4,77 | – | – | 1 | 2,90 | – | 2,24 | 3,56 | – | – | 2,90 | – | 1,29 | 4,51 | – | – | 2,17 | 3,63 | – | – | 2,55 |
| *Melanochlamys diomedea* | IV | -12,99 | 38,97 | 13,71 | – | – | 1 | 2,37 | – | 2,23 | 2,51 | – | – | 2,37 | – | 2,03 | 2,71 | – | – | 2,22 | 2,52 | – | – | 2,37 |
| *Melinna elisabethae* | IV | -2,70 | 6,27 | 2,92 | – | – | 1 | 2,79 | – | 1,95 | 3,63 | – | – | 2,79 | – | 1,00 | 4,91 | – | – | 1,85 | 3,73 | – | – | 2,44 |
| *Menestho exaratissima* | IV | -6,51 | 18,37 | 7,63 | – | – | 1 | 2,54 | – | 2,24 | 2,84 | – | – | 2,54 | – | 1,80 | 3,28 | – | – | 2,21 | 2,87 | – | – | 2,48 |
| *Monoculodes breviops* | IV | -4,31 | 13,81 | 6,21 | – | – | 1 | 2,52 | – | 2,09 | 2,95 | – | – | 2,52 | – | 1,50 | 3,54 | – | – | 2,05 | 2,99 | – | – | 2,44 |
| *Monoculodes diamesus* | IV | -7,38 | 21,70 | 8,76 | – | – | 1 | 2,49 | – | 2,23 | 2,75 | – | – | 2,49 | – | 1,86 | 3,12 | – | – | 2,20 | 2,77 | – | – | 2,45 |
| *Monoculodes* sp*.* | IV | -3,62 | 8,47 | 5,11 | – | – | 1 | 3,06 | – | 2,39 | 3,74 | – | – | 3,06 | – | 1,44 | 4,69 | – | – | 2,33 | 3,80 | – | – | 2,64 |
| *Monoculodes zernovi* | IV | -1,88 | 20,80 | 3,04 | – | – | 1 | 1,47 | – | 1,21 | 1,74 | – | – | 1,47 | – | 1,00 | 2,13 | – | – | 1,18 | 1,77 | – | – | 1,56 |
| *Mya japonica* | IV | -15,90 | 47,97 | 16,32 | – | – | 1 | 2,34 | – | 2,23 | 2,45 | – | – | 2,34 | – | 2,07 | 2,62 | – | – | 2,22 | 2,47 | – | – | 2,35 |
| *Mya truncata* | IV | -3,27 | 7,53 | 6,05 | – | – | 2 | 3,48 | – | 2,57 | 4,38 | – | – | 3,48 | – | 1,92 | 5,00 | – | – | 3,48 | 3,48 | – | – | 2,77 |
| *Mya uzenensis* | IV | -7,10 | 11,55 | 7,49 | – | – | 1 | 3,53 | – | 3,07 | 3,99 | – | – | 3,53 | – | 2,38 | 4,68 | – | – | 3,02 | 4,04 | – | – | 3,17 |
| *Myxicola* sp. | IV | -7.22 | 19.44 | 8.59 | – | – | 1 | 2.63 | – | 2.34 | 2.92 | – | – | 2.63 | – | 1.92 | 3.33 | – | – | 2.31 | 2.95 | – | – | 2.54 |
| *Nassarius multigranosus* | IV | -12,26 | 39,56 | 12,95 | – | – | 1 | 2,27 | – | 2,14 | 2,41 | – | – | 2,27 | – | 1,94 | 2,61 | – | – | 2,12 | 2,43 | – | – | 2,29 |
| *Neohaustator fortilirata* | IV | -1,57 | 13,81 | 3,43 | – | – | 1 | 1,72 | – | 1,29 | 2,15 | – | – | 1,72 | – | 1,00 | 2,74 | – | – | 1,26 | 2,19 | – | – | 1,85 |
| *Nereis zonata* | IV | -4,84 | 14,32 | 6,62 | – | – | 1 | 2,60 | – | 2,19 | 3,01 | – | – | 2,60 | – | 1,62 | 3,58 | – | – | 2,15 | 3,05 | – | – | 2,50 |
| Продолжение табл. 2  Table 2 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Notomastus latericeus* | IV | -6,72 | 7,51 | 4,13 | – | – | 1 | 3,89 | – | 3,01 | 4,77 | – | – | 3,89 | – | 1,93 | 5,00 | – | – | 2,96 | 4,81 | – | – | 3,05 |
| *Oenopota* sp*.* | IV | -4,19 | 8,82 | 5,79 | – | – | 1 | 3,27 | – | 2,61 | 3,92 | – | – | 3,26 | – | 1,70 | 4,83 | – | – | 2,55 | 3,98 | – | – | 2,79 |
| *Orchomenella* sp*.* | IV | -1,84 | 19,19 | 3,12 | – | – | 1 | 1,52 | – | 1,23 | 1,81 | – | – | 1,52 | – | 1,00 | 2,23 | – | – | 1,20 | 1,84 | – | – | 1,63 |
| *Owenia fusiformis* | IV | -1,88 | 7,02 | 3,69 | – | – | 2 | 2,59 | – | 1,75 | 3,43 | – | – | 2,59 | – | 1,04 | 4,13 | – | – | 2,59 | 2,59 | – | – | 2,37 |
| *Polynoidae gen.* sp*.* | IV | -13,81 | 43,17 | 14,38 | – | – | 1 | 2,31 | – | 2,18 | 2,43 | – | – | 2,31 | – | 2,00 | 2,62 | – | – | 2,17 | 2,44 | – | – | 2,30 |
| *Pontogeneia rostrata* | IV | -1,12 | 19,48 | 2,13 | – | – | 1 | 1,33 | – | 1,05 | 1,61 | – | – | 1,33 | – | 1,00 | 2,03 | – | – | 1,02 | 1,64 | – | – | 1,50 |
| *Pontogeneia* sp*.* | IV | -5,05 | 33,89 | 5,53 | – | – | 1 | 1,62 | – | 1,47 | 1,78 | – | – | 1,62 | – | 1,23 | 2,02 | – | – | 1,45 | 1,80 | – | – | 1,62 |
| *Potamocorbula amurensis* | IV | -12,69 | 37,20 | 13,26 | – | – | 1 | 2,40 | – | 2,25 | 2,54 | – | – | 2,40 | – | 2,04 | 2,75 | – | – | 2,24 | 2,56 | – | – | 2,36 |
| *Praxillella praetermissa* | IV | -2,60 | 9,41 | 3,80 | – | – | 1 | 2,36 | – | 1,77 | 2,95 | – | – | 2,36 | – | 1,00 | 3,80 | – | – | 1,71 | 3,01 | – | – | 2,26 |
| *Priapulus caudatus* | IV | -4,87 | 8,55 | 4,22 | – | – | 1 | 3,12 | – | 2,50 | 3,75 | – | – | 3,12 | – | 1,56 | 4,69 | – | – | 2,43 | 3,82 | – | – | 2,70 |
| *Prionospio nova* | IV | -10,61 | 48,46 | 10,24 | – | – | 1 | 1,86 | – | 1,75 | 1,97 | – | – | 1,86 | – | 1,59 | 2,13 | – | – | 1,74 | 1,98 | – | – | 1,88 |
| *Prionospio* sp*.* | IV | -1,71 | 6,39 | 2,44 | – | – | 1 | 2,30 | – | 1,46 | 3,14 | – | – | 2,30 | – | 1,00 | 4,40 | – | – | 1,37 | 3,24 | – | – | 2,26 |
| *Protomedeia epimerata* | IV | -3,54 | 13,58 | 5,54 | – | – | 1 | 2,34 | – | 1,89 | 2,78 | – | – | 2,34 | – | 1,29 | 3,38 | – | – | 1,86 | 2,82 | – | – | 2,30 |
| *Pseudopotamilla* sp*.* | IV | -32,65 | 82,58 | 31,26 | – | – | 1 | 2,55 | – | 2,48 | 2,62 | – | – | 2,55 | – | 2,38 | 2,71 | – | – | 2,47 | 2,62 | – | – | 2,54 |
| *Raeta pulchella* | IV | -0,50 | 6,16 | 1,64 | – | – | 2 | 1,69 | – | NA | NA | – | – | 1,70 | – | 1,00 | 3,39 | – | – | 1,69 | 1,69 | – | – | 2,05 |
| *Serripes groenlandicus* | IV | -3,95 | 20,52 | 5,39 | – | – | 1 | 1,91 | – | 1,63 | 2,19 | – | – | 1,91 | – | 1,24 | 2,58 | – | – | 1,61 | 2,21 | – | – | 1,94 |
| *Sphaerodoridium minutum* | IV | -28,93 | 56,20 | 26,77 | – | – | 1 | 2,98 | – | 2,87 | 3,09 | – | – | 2,98 | – | 2,73 | 3,24 | – | – | 2,86 | 3,10 | – | – | 2,96 |
| Spionidae gen. sp. | IV | -1,29 | 4,42 | 1,15 | – | – | 1 | 2,10 | – | NA | NA | – | – | 2,12 | – | 1,00 | 5,00 | – | – | 1,00 | 3,44 | – | – | 2,23 |
| *Spiophanes berkeleyorum* | IV | -3,92 | 16,71 | 5,15 | – | – | 1 | 2,09 | – | 1,75 | 2,42 | – | – | 2,09 | – | 1,27 | 2,90 | – | – | 1,72 | 2,45 | – | – | 2,12 |
| *Synandwakia* sp*.* | IV | -10,23 | 32,44 | 11,21 | – | – | 1 | 2,32 | – | 2,15 | 2,49 | – | – | 2,32 | – | 1,91 | 2,74 | – | – | 2,14 | 2,51 | – | – | 2,31 |
| *Yoldia keppeliana* | IV | -11,71 | 40,28 | 12,26 | – | – | 1 | 2,19 | – | 2,06 | 2,32 | – | – | 2,19 | – | 1,86 | 2,52 | – | – | 2,04 | 2,34 | – | – | 2,20 |
| *Asabellides sibirica* | V | -67,61 | 100 | 4,74 | 5,09 | – | 1 | 3,58 | – | 3,44 | 3,71 | – | – | 2,88 | – | 1,83 | 3,79 | – | – | 3,08 | 3,70 | – | – | 2,72 |
| *Chaetozone setosa* | V | -96,21 | 100 | 4,27 | 1,52 | – | 10 | 4,68 | – | 4,51 | 4,85 | – | – | 2,61 | – | 2,00 | 4,68 | – | – | 4,68 | 4,68 | – | – | 2,59 |
| *Chone* sp*.* | V | -72,47 | 100 | 3,26 | 2,75 | – | 1 | 3,75 | – | 3,58 | 3,90 | – | – | 2,42 | – | 1,00 | 3,98 | – | – | 2,84 | 3,89 | – | – | 2,56 |
| Cirratulidae gen. sp. | V | -52,06 | 100 | 3,32 | 3,23 | – | 1 | 2,94 | – | 2,79 | 3,09 | – | – | 1,84 | – | 1,00 | 3,16 | – | – | 2,20 | 3,08 | – | – | 2,24 |
| *Cistenides hyperborea* | V | -0,85 | 6,73 | 26,73 | 100 | – | 1 | 2,19 | – | 2,06 | 2,32 | – | – | 2,71 | – | 2,07 | 2,59 | – | – | 1,98 | 3,55 | – | – | 2,49 |
| *Crangon* sp*.* | V | 1,03 | 5,67 | 14,89 | 100 | – | 1 | 1,71 | – | 1,59 | 1,84 | – | – | 2,32 | – | 1,51 | 3,24 | – | – | 1,60 | 2,14 | – | – | 2,18 |
| Cumacea fam. gen. sp. | V | 0,79 | 5,49 | 15,09 | 100 | – | 1 | 1,72 | – | 1,60 | 1,86 | – | – | 2,36 | – | 1,52 | 3,32 | – | – | 1,60 | 2,17 | – | – | 2,20 |
| *Cymatoica orientalis* | V | -34,80 | 100 | 4,02 | 6,58 | – | 1 | 2,28 | – | 2,16 | 2,40 | – | – | 1,77 | – | 1,00 | 2,48 | – | – | 1,90 | 2,39 | – | – | 2,00 |
| Decapoda fam. gen. sp. | V | 0,06 | 4,83 | 2,55 | 29,28 | – | 1 | 1,63 | – | 1,30 | 1,98 | – | – | 2,23 | – | 1,01 | 3,66 | – | – | 1,30 | 2,30 | – | – | 2,03 |
| *Edwardsia japonica* | V | 0,57 | 3,86 | 20,81 | 100 | – | 1 | 1,97 | – | 1,83 | 2,12 | – | – | 2,92 | – | 1,75 | 4,26 | – | – | 1,84 | 2,61 | – | – | 2,45 |
| Продолжение табл. 2  Table 2 continued | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| *Glycera tesselata* | V | 0,47 | 7,75 | 14,46 | 100 | – | 1 | 1,68 | – | 1,57 | 1,80 | – | – | 2,11 | – | 1,49 | 2,82 | – | – | 1,57 | 2,01 | – | – | 2,08 |
| *Glycera unicornis* | V | -40,10 | 100 | 11,01 | 26,26 | – | 1 | 2,54 | – | 2,46 | 2,63 | – | – | 2,45 | – | 2,00 | 2,72 | – | – | 2,41 | 2,63 | – | – | 2,44 |
| *Halosydna* sp*.* | V | -6,75 | 17,80 | 40,09 | 100 | – | 1 | 2,68 | – | 2,59 | 2,79 | – | – | 2,84 | – | 2,00 | 3,24 | – | – | 2,59 | 2,87 | – | – | 2,78 |
| *Heteromastus giganteus* | V | -56,27 | 100 | 8,76 | 12,98 | – | 2 | 3,17 | – | 3,07 | 3,27 | – | – | 2,94 | – | 2,00 | 3,32 | – | – | 3,17 | 3,17 | – | – | 2,86 |
| *Laonice cirrata* | V | -0,10 | 4,09 | 5,30 | 100 | – | 1 | 1,36 | – | 1,21 | 1,55 | – | – | 2,35 | – | 1,13 | 3,84 | – | – | 1,22 | 2,14 | – | – | 2,00 |
| *Laonice* sp*.* | V | 0,93 | 6,01 | 14,92 | 100 | – | 1 | 1,71 | – | 1,59 | 1,84 | – | – | 2,28 | – | 1,51 | 3,15 | – | – | 1,60 | 2,12 | – | – | 2,17 |
| *Magelona longicornis* | V | -67,58 | 100 | 2,69 | 2,80 | – | 1 | 3,55 | – | 3,37 | 3,71 | – | – | 2,21 | – | 1,00 | 3,78 | – | – | 2,59 | 3,69 | – | – | 2,46 |
| *Maldane sarsi* | V | -69,41 | 100 | 0,68 | 3,09 | – | 1 | 3,58 | – | 1,88 | 3,78 | – | – | 1,93 | – | 1,00 | 3,85 | – | – | 1,75 | 3,76 | – | – | 2,36 |
| *Mya* sp*.* | V | 1,39 | 2,46 | 14,27 | 100 | – | 1 | 1,72 | – | 1,57 | 1,89 | – | – | 3,18 | – | 1,49 | 5,00 | – | – | 1,58 | 2,67 | – | – | 2,38 |
| *Nereis longior galinae* | V | -55,96 | 100 | 9,27 | 15,92 | – | 1 | 3,15 | – | 3,05 | 3,25 | – | – | 2,97 | – | 2,00 | 3,34 | – | – | 2,95 | 3,25 | – | – | 2,90 |
| *Nicolea* sp*.* | V | -6,97 | 19,55 | 37,80 | 100 | – | 1 | 2,59 | – | 2,49 | 2,68 | – | – | 2,73 | – | 2,00 | 3,09 | – | – | 2,49 | 2,76 | – | – | 2,68 |
| *Nothria* sp*.* | V | -1,14 | 12,19 | 19,15 | 100 | – | 1 | 1,85 | – | 1,75 | 1,96 | – | – | 2,10 | – | 1,67 | 2,61 | – | – | 1,75 | 2,09 | – | – | 2,10 |
| *Paranaitis polynoides* | V | 0,16 | 7,45 | 7,02 | 100 | – | 1 | 1,40 | – | 1,27 | 1,53 | – | – | 1,87 | – | 1,19 | 2,66 | – | – | 1,28 | 1,78 | – | – | 1,82 |
| *Potamilla reniformis* | V | -65,46 | 100 | 5,46 | 6,23 | – | 1 | 3,50 | – | 3,37 | 3,63 | – | – | 2,95 | – | 2,00 | 3,71 | – | – | 3,09 | 3,62 | – | – | 2,78 |
| *Protomedeia popovi* | V | -0,47 | 10,50 | 15,55 | 100 | – | 1 | 1,72 | – | 1,61 | 1,83 | – | – | 2,02 | – | 1,53 | 2,59 | – | – | 1,61 | 1,98 | – | – | 2,03 |
| *Protothaca jedoyensis* | V | 0,99 | 4,19 | 25,57 | 100 | – | 1 | 2,15 | – | 2,02 | 2,29 | – | – | 3,00 | – | 1,94 | 4,19 | – | – | 2,03 | 2,71 | – | – | 2,54 |
| *Scalibregma inflatum* | V | -70,63 | 100 | 1,31 | 2,72 | – | 1 | 3,64 | – | 2,93 | 3,83 | – | – | 2,04 | – | 1,00 | 3,90 | – | – | 2,16 | 3,81 | – | – | 2,42 |
| *Scolelepis* sp*.* | V | 1,15 | 2,73 | 9,44 | 54,41 | – | 1 | 1,92 | – | 1,68 | 2,17 | – | – | 3,16 | – | 1,54 | 5,00 | – | – | 1,70 | 2,82 | – | – | 2,42 |
| *Sigambra bassi* | V | -70,74 | 100 | 1,98 | 5,17 | – | 1 | 3,65 | – | 2,53 | 3,83 | – | – | 2,63 | – | 1,00 | 3,91 | – | – | 2,49 | 3,82 | – | – | 2,55 |
| Syllidae gen. sp. | V | 0,34 | 10,02 | 11,21 | 100 | – | 1 | 1,54 | – | 1,44 | 1,65 | – | – | 1,86 | – | 1,35 | 2,44 | – | – | 1,44 | 1,81 | – | – | 1,82 |
| *Synidotea cinerea* | V | -4,87 | 10,63 | 31,04 | 63,71 | – | 1 | 3,08 | – | 2,93 | 3,25 | – | – | 3,36 | – | 2,00 | 4,02 | – | – | 2,93 | 3,39 | – | – | 3,24 |
| *Tritodynamia rathbunae* | V | 0,20 | 7,48 | 19,62 | 100 | – | 1 | 1,89 | – | 1,78 | 2,01 | – | – | 2,33 | – | 1,69 | 3,06 | – | – | 1,78 | 2,23 | – | – | 2,24 |
| *Westwoodilla rectangulata* | V | 0,49 | 6,85 | 7,63 | 40,43 | – | 1 | 1,93 | – | 1,70 | 2,15 | – | – | 2,31 | – | 1,48 | 3,25 | – | – | 1,70 | 2,35 | – | – | 2,20 |
| *Westwoodilla* sp*.* | V | -55,61 | 100 | 5,66 | 7,93 | – | 1 | 3,12 | – | 3,00 | 3,23 | – | – | 2,70 | – | 1,98 | 3,32 | – | – | 2,78 | 3,23 | – | – | 2,61 |
| *Yoldia johanni* | V | -0,52 | 9,70 | 7,45 | 100 | – | 1 | 1,41 | – | 1,29 | 1,54 | – | – | 1,77 | – | 1,21 | 2,44 | – | – | 1,30 | 1,74 | – | – | 1,76 |
| *Asterias amurensis* | VII | -13,65 | 4,97 | 7,68 | -3,50 | 5,33 | 10 | 1,00 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 1,61 | 4,26 | 1,00 | 1,00 | 5,00 | 5,00 | 1,00 | 1,00 | 5,00 | 5,00 | 2,67 |
| *Dipolydora cardalia* | VII | -10,39 | 15,08 | 7,48 | -0,42 | 10,43 | 1 | 1,00 | 3,36 | 1,00 | 1,00 | 1,65 | 3,83 | 1,00 | 3,04 | 1,00 | 1,00 | 2,84 | 3,84 | 1,00 | 1,00 | 1,34 | 4,37 | 2,66 |
| *Phyllodoce groenlandica* | VII | 1,11 | -0,09 | 1,55 | 0,30 | -100 | 1 | 1,85 | 5,00 | 1,54 | 5,00 | 5,00 | 5,00 | 2,12 | 5,00 | 1,00 | 2,14 | 5,00 | 5,00 | 1,00 | 5,00 | 5,00 | 5,00 | 1,86 |
| *Protomedeia* sp*.* | VII | -8,85 | 31,06 | 9,52 | 2,51 | -2,73 | 1 | 1,00 | 2,18 | 1,00 | 1,00 | 2,01 | 2,35 | 1,25 | 2,37 | 1,00 | 1,51 | 1,96 | 2,39 | 1,00 | 1,51 | 1,51 | 2,77 | 2,12 |
| Окончание табл. 2  Table 2 finished | | | | | | | | | | | | | | | | | | | | | | | | |
| Таксон | Тип модели | Коэффициенты модели | | | | | *M* | Оптимум | | Точки перегиба | | | | Ожидаемое значение 1 | Ожидаемое значение 2 | Границы внешней ниши | | | | Границы центральной ниши | | | | Среднее значение |
| 1 | | 2 | | 1 | | 2 | | 1 | | 2 | |
| *a* | *b* | *c* | *d* | *e* | 1 | 2 | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя | нижняя | верхняя |
| Групповые модели | | | | | | | | | | | | | | | | | | | | | | | | |
| ES | VI | -1,47 | 3,37 | -1,87 | -0,69 | – | 1 | 1,00 | 5,00 | 1,00 | 1,00 | 1,05 | 5,00 | 1,00 | 2,41 | 2,43 | 5,00 | -3,04 | 5,00 | -3,00 | 2,62 | 5,00 | 5,09 | 2,12 |
| S | V | -5,12 | 7,23 | 1,19 | 33,31 | – | 1 | 1,78 | – | 1,14 | 3,83 | – | – | 2,66 | – | 0,92 | 4,88 | – | – | 1,19 | 3,64 | – | – | 2,25 |
| MT | III | -14,49 | 17,27 | 0,09 | – | – | 1 | 1,00 | 3,85 | 4,36 | – | – | – | 2,29 | – | 1,00 | 4,78 | – | – | 1,00 | 4,25 | – | – | 2,29 |
| T | IV | -5,88 | 4,94 | -2,68 | – | – | 1 | 2,30 | – | 0,99 | 2,35 | – | – | 2,35 | – | -0,41 | 5,00 | – | – | -0,41 | 5,00 | – | – | 2,35 |
| ET | II | -0,08 | -3,45 | – | – | – | 1 | 5,00 | – | – | – | – | – | 4,72 | – | 1,00 | 5,00 | – | – | 1,32 | 5,00 | – | – | 2,51 |

*Примечание.* NA – параметр оценить невозможно, прочерк – параметр отсутствует.

Таблица 3

Результаты нечеткой классификации макрозообентоса − степень принадлежности таксонов   
к выделенным кластерам (экспоненциальный вес – 1,2)

Table 3

Results of fuzzy classification of macrozoobenthos − degree of taxa membership to the cluster revealed   
(exponential weight – 1.2)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Таксон | *Fq\** | Кластер | Кластер | | | | | Тип модели | | Бионтность | |
| ES | S | MT | T | ET | *A* | *Fq* | *A* | *Fq* |
| *Acila insignis* | 44 | S | 0.000 | **1.000** | 0.000 | 0.000 | 0.000 | VII | IV | II | II |
| Actiniaria fam. gen. sp. | 25 | MT | 0.000 | 0.001 | **0.999** | 0.000 | 0.000 | IV | IV | I | III |
| *Alveinus ojianus* | 16 | S | 0.024 | **0.976** | 0.000 | 0.000 | 0.000 | IV | IV | I | I |
| *Ampelisca macrocephala* | 32 | S | 0.001 | **0.951** | 0.049 | 0.000 | 0.000 | IV | III | I | III |
| *Ampharete sibirica* | 17 | ES | **1.000** | 0.000 | 0.000 | 0.000 | 0.000 | IV | II | I | I |
| *Ampharete* sp*.* | 52 | MT | 0.000 | 0.000 | **1.000** | 0.000 | 0.000 | V | III | I | III |
| Ampharetidae gen. sp. | 19 | S | 0.051 | **0.947** | 0.002 | 0.000 | 0.000 | V | II | I | II |
| *Amphiodia fissa* | 61 | ES | **1.000** | 0.000 | 0.000 | 0.000 | 0.000 | III | II | I | II |
| *Amphiodia periercta* | 7 | S | 0.000 | **1.000** | 0.000 | 0.000 | 0.000 | IV | IV | I | I |
| Amphipoda fam. gen. sp. | 40 | S | 0.000 | **1.000** | 0.000 | 0.000 | 0.000 | V | IV | I | II |
| *Anisocorbula venusta* | 8 | ET | 0.000 | 0.000 | 0.000 | 0.010 | **0.990** | IV | II | I | III |
| *Anonyx* sp*.* | 10 | ES | **1.000** | 0.000 | 0.000 | 0.000 | 0.000 | IV | II | I | II |
| *Aphelochaeta pacifica* | 108 | ET | 0.000 | 0.000 | 0.000 | 0.000 | **1.000** | V | II | III | III |
| Aphroditidae gen. sp. | 17 | S | 0.007 | **0.993** | 0.000 | 0.000 | 0.000 | IV | IV | I | I |
| *Arca boucardi* | 10 | MT | 0.000 | 0.000 | **1.000** | 0.000 | 0.000 | IV | IV | I | II |
| *Arcuatula senhousia* | 5 | MT | 0.000 | 0.101 | **0.899** | 0.000 | 0.000 | VI | IV | I | I |
| *Aricidea catherinae* | 23 | MT | 0.000 | 0.000 | **0.996** | 0.004 | 0.000 | IV | IV | I | II |
| *Aricidea suecica* | 9 | MT | 0.000 | 0.000 | **1.000** | 0.000 | 0.000 | V | IV | I | I |
| *Asabellides .sibirica* | 13 | T | 0.000 | 0.000 | 0.000 | **1.000** | 0.000 | IV | V | I | II |
| Ascidia fam. gen. sp. | 17 | MT | 0.000 | 0.000 | **0.970** | 0.030 | 0.000 | V | IV | I | II |
| *Asterias amurensis* | 25 | ET | 0.000 | 0.000 | 0.001 | 0.188 | **0.811** | VII | VII | I | II |
| *Asychis* sp*.* | 7 | ES | **0.915** | 0.085 | 0.000 | 0.000 | 0.000 | IV | III | I | I |
| *Axinopsida subquadrata* | 74 | MT | 0.000 | 0.000 | **0.998** | 0.002 | 0.000 | VI | III | III | III |
| *Balanus rostratus* | 11 | MT | 0.000 | 0.000 | **0.919** | 0.081 | 0.000 | IV | IV | I | II |
| *Bela erosa* | 21 | MT | 0.000 | 0.000 | **1.000** | 0.000 | 0.000 | IV | III | III | III |
| *Byblis* sp*.* | 7 | ES | **0.985** | 0.015 | 0.000 | 0.000 | 0.000 | III | III | I | I |
| *Cadella lubrica* | 5 | ES | **0.993** | 0.007 | 0.000 | 0.000 | 0.000 | IV | IV | I | I |
| *Capitella capitata* | 47 | ET | 0.000 | 0.000 | 0.000 | 0.001 | **0.999** | III | II | III | III |
| Capitellidae gen. sp. | 41 | MT | 0.000 | 0.000 | **1.000** | 0.000 | 0.000 | VII | IV | II | II |
| Caprellidae gen. sp. | 12 | ES | **1.000** | 0.000 | 0.000 | 0.000 | 0.000 | IV | II | I | II |
| *Carinomella* sp*.* | 5 | S | 0.035 | **0.965** | 0.000 | 0.000 | 0.000 | IV | III | I | I |
| *Cerebratulus marginatus* | 27 | MT | 0.000 | 0.000 | **0.999** | 0.001 | 0.000 | V | IV | I | II |
| *Chaetozone setosa* | 63 | ET | 0.000 | 0.000 | 0.000 | 0.000 | **1.000** | V | V | III | III |
| *Charisma candida* | 5 | MT | 0.000 | 0.000 | **1.000** | 0.000 | 0.000 | V | IV | I | I |
| *Cheilonereis cyclurus* | 19 | ET | 0.000 | 0.000 | 0.000 | 0.000 | **1.000** | III | II | II | II |
| *Chone cincta* | 8 | ET | 0.000 | 0.000 | 0.000 | 0.000 | **1.000** | III | II | I | I |
| *Chone* sp*.* | 23 | T | 0.000 | 0.000 | 0.000 | **0.998** | 0.002 | III | V | III | III |
| Cirratulidae gen. sp. | 5 | T | 0.000 | 0.000 | 0.078 | **0.922** | 0.000 | IV | V | II | I |
| *Cirratulus cirratus* | 16 | T | 0.000 | 0.000 | 0.000 | **1.000** | 0.000 | IV | IV | II | III |
| *Cistenides hyperborea* | 12 | MT | 0.000 | 0.000 | **1.000** | 0.000 | 0.000 | IV | V | I | I |
| *Crangon amurensis* | 11 | T | 0.000 | 0.000 | 0.000 | **1.000** | 0.000 | IV | III | III | III |
| *Crangon* sp*.* | 6 | S | 0.000 | **1.000** | 0.000 | 0.000 | 0.000 | IV | V | I | II |
| *Crassicorophium crassicorne* | 26 | MT | 0.000 | 0.000 | **1.000** | 0.000 | 0.000 | IV | IV | I | I |
| *Cryptonatica janthostoma* | 15 | ES | **1.000** | 0.000 | 0.000 | 0.000 | 0.000 | V | II | II | II |
| Cumacea fam. gen. sp. | 13 | S | 0.000 | **1.000** | 0.000 | 0.000 | 0.000 | IV | V | I | II |

Продолжение табл. 3

Table 3 continued

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Таксон | *Fq\** | Кластер | Кластер | | | | | Тип модели | | Бионтность | |
| ES | S | MT | T | ET | *A* | *Fq* | *A* | *Fq* |
| *Cymatoica orientalis* | 11 | MT | 0,000 | 0,034 | **0,966** | 0,000 | 0,000 | V | V | I | I |
| Decapoda fam. gen. sp. | 40 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | V | V | I | II |
| *Derjuginella rufofasciata* | 15 | ES | **0,999** | 0,001 | 0,000 | 0,000 | 0,000 | II | II | III | III |
| *Diastylis alaskensis* | 23 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | VII | IV | II | II |
| *Diastylis goodsiri* | 7 | MT | 0,000 | 0,005 | **0,995** | 0,000 | 0,000 | IV | IV | I | I |
| *Diastylis* sp*.* | 24 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | V | II | I | I |
| *Diastylopsis dawsoni* | 21 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | V | IV | I | I |
| *Diplodonta semiosperoides* | 5 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | IV | II | I | I |
| *Dipolydora cardalia* | 72 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | VII | VII | I | III |
| *Echinarachnius parma* | 5 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | III | III | I | I |
| *Echinocardium cordatum* | 24 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | V | II | I | I |
| *Edwardsia japonica* | 20 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | V | V | I | II |
| *Ennucula tenuis* | 89 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | VII | IV | III | III |
| *Eteone longa* | 21 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | V | IV | I | III |
| *Eulalia bilineata* | 43 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | VII | IV | II | III |
| *Eumida sanguinea* | 7 | T | 0,000 | 0,000 | 0,004 | **0,996** | 0,000 | IV | IV | II | I |
| *Felaniella usta* | 7 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | II | II | I | I |
| *Gaetice depressus* | 5 | MT | 0,000 | 0,001 | **0,999** | 0,000 | 0,000 | IV | IV | I | II |
| Gastropoda fam. gen. sp. | 23 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | V | II | I | II |
| *Glycera capitata* | 85 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | V | IV | III | III |
| *Glycera chirori* | 5 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | IV | IV | I | I |
| *Glycera* sp*.* | 88 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | VII | II | I | II |
| *Glycera tesselata* | 9 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | IV | V | I | I |
| *Glycera unicornis* | 10 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | V | I | I |
| *Glycinde armigera* | 41 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | V | III | III | III |
| *Goniada maculata* | 119 | S | 0,000 | **0,936** | 0,063 | 0,000 | 0,000 | V | III | III | III |
| *Grandifoxus longirostris* | 10 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | IV | II | III | I |
| *Grandifoxus robustus* | 6 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | II | II | I | I |
| *Halosydna* sp*.* | 5 | MT | 0,000 | 0,000 | **0,683** | 0,317 | 0,000 | IV | V | I | I |
| *Harmothoe imbricata* | 18 | T | 0,000 | 0,000 | 0,000 | **0,998** | 0,002 | IV | III | III | III |
| *Harmothoe* sp*.* | 11 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | VII | IV | I | III |
| *Heteromastus giganteus* | 7 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | IV | V | I | I |
| Holothuroidea fam. gen. sp. | 11 | S | 0,025 | **0,975** | 0,000 | 0,000 | 0,000 | III | III | I | I |
| Isopoda. fam. gen. sp. | 6 | S | 0,001 | **0,996** | 0,003 | 0,000 | 0,000 | IV | III | I | I |
| *Lanassa* sp*.* | 5 | S | 0,093 | **0,907** | 0,000 | 0,000 | 0,000 | IV | II | I | III |
| *Laonice* sp*.* | 8 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | IV | V | I | II |
| *Liocyma fluctuosa* | 17 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | IV | II | I | I |
| *Lumbrineris japonica* | 11 | MT | 0,000 | 0,000 | **0,577** | 0,423 | 0,000 | VI | IV | II | II |
| *Lumbrineris longifolia* | 226 | T | 0,000 | 0,001 | 0,285 | **0,713** | 0,000 | V | III | III | III |
| *Macoma calcarea* | 10 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | IV | I | I |
| *Macoma incongrua* | 8 | MT | 0,000 | 0,003 | **0,997** | 0,000 | 0,000 | IV | IV | I | I |
| *Macoma nipponica* | 6 | ET | 0,000 | 0,000 | 0,000 | 0,000 | **1,000** | III | II | II | III |
| *Macoma scarlatoi* | 13 | ET | 0,000 | 0,000 | 0,000 | 0,017 | **0,983** | IV | IV | II | II |
| *Macoma* sp*.* | 33 | IV | 0,000 | 0,000 | 0,000 | **0,999** | 0,001 | V | IV | II | III |
| *Macoma tokyoensis* | 16 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | IV | II | II |
| *Mactra chinensis* | 8 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | III | II | I | I |
| *Magelona longicornis* | 36 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | VII | V | III | III |
| *Magelona pacifica* | 17 | S | 0,150 | **0,850** | 0,000 | 0,000 | 0,000 | VII | III | I | I |
| *Maldane sarsi* | 140 | T | 0,000 | 0,000 | 0,082 | **0,918** | 0,000 | III | V | II | III |
| Maldanidae gen. sp. | 35 | ES | **0,899** | 0,101 | 0,000 | 0,000 | 0,000 | IV | II | I | III |

Продолжение табл. 3

Table 3 continued

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Таксон | *Fq\** | Кластер | Кластер | | | | | Тип модели | | Бионтность | |
| ES | S | MT | T | ET | *A* | *Fq* | *A* | *Fq* |
| *Mediomastus californiensis* | 16 | MT | 0,000 | 0,001 | **0,995** | 0,004 | 0,000 | V | IV | I | III |
| *Melanochlamys diomedea* | 6 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | IV | I | I |
| *Melinna elisabethae* | 41 | MT | 0,000 | 0,000 | **0,896** | 0,104 | 0,000 | VII | IV | II | III |
| *Menestho exaratissima* | 13 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | V | IV | I | I |
| *Monoculodes diamesus* | 6 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | IV | II | I |
| *Monoculodes* sp*.* | 14 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | IV | IV | I | III |
| *Monoculodes zernovi* | 5 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | II | IV | I | I |
| *Mya arenaria* | 8 | S | 0,062 | **0,891** | 0,047 | 0,001 | 0,000 | VII | II | II | II |
| *Mya japonica* | 6 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | IV | I | I |
| *Mya pseudoarenaria* | 14 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | V | III | II | III |
| *Mya* sp*.* | 20 | S | 0,000 | **0,989** | 0,011 | 0,000 | 0,000 | V | V | III | III |
| *Mya truncata* | 9 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | IV | IV | I | III |
| *Mya uzenensis* | 13 | T | 0,000 | 0,000 | 0,000 | **0,999** | 0,001 | IV | IV | II | II |
| *Myxicola* sp. | 5 | ES | 0.000 | 0.000 | 0.000 | **1.000** | 0.000 | IV | IV | I | I |
| *Nassarius multigranosus* | 6 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | IV | I | I |
| *Neohaustator fortilirata* | 5 | S | 0,055 | **0,945** | 0,000 | 0,000 | 0,000 | IV | IV | I | II |
| *Neomysis* sp*.* | 7 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | IV | II | I | I |
| *Nephtys caeca* | 11 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | VII | III | I | I |
| *Nephtys longosetosa* | 9 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | II | II | I | I |
| *Nephtys* sp*.* | 31 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | VII | II | I | II |
| Nereididae gen. sp. | 9 | T | 0,000 | 0,000 | 0,008 | **0,992** | 0,000 | IV | III | I | III |
| *Nereis longior galinae* | 10 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | V | V | I | I |
| *Nereis* sp*.* | 31 | ET | 0,000 | 0,000 | 0,000 | 0,024 | **0,976** | VII | III | I | III |
| *Nereis vexillosa* | 5 | ET | 0,000 | 0,000 | 0,000 | 0,000 | **1,000** | IV | III | I | II |
| *Nereis zonata* | 9 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | V | IV | I | II |
| *Nicolea* sp*.* | 7 | MT | 0,000 | 0,000 | **0,992** | 0,008 | 0,000 | V | V | I | I |
| *Nothria* sp*.* | 6 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | IV | V | I | I |
| *Notomastus latericeus* | 56 | ET | 0,000 | 0,000 | 0,000 | 0,000 | **1,000** | V | IV | III | III |
| *Odius kelleri* | 5 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | IV | III | I | III |
| *Oenopota* sp*.* | 6 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | IV | IV | I | III |
| *Onuphis iridescens* | 29 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | III | III | II | II |
| *Onuphis* sp*.* | 15 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | II | II | I | I |
| *Ophelina acuminata* | 11 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | IV | II | II | II |
| *Ophiura sarsii* | 136 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | VII | III | II | III |
| *Orchomenella* sp*.* | 5 | ES | **0,998** | 0,002 | 0,000 | 0,000 | 0,000 | IV | IV | I | I |
| *Owenia fusiformis* | 32 | MT | 0,000 | 0,011 | **0,989** | 0,000 | 0,000 | V | IV | II | III |
| *Paradorippe granulata* | 18 | MT | 0,000 | 0,003 | **0,796** | 0,201 | 0,000 | IV | III | I | III |
| *Paranaitis polynoides* | 24 | S | 0,207 | **0,793** | 0,000 | 0,000 | 0,000 | IV | V | I | I |
| *Pherusa plumosa* | 32 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | VII | III | III | III |
| *Philine argentata* | 25 | T | 0,000 | 0,000 | 0,000 | **0,927** | 0,073 | III | III | III | III |
| *Philine orientalis* | 45 | T | 0,000 | 0,000 | 0,004 | **0,996** | 0,000 | V | III | II | III |
| *Philine* sp*.* | 30 | S | 0,065 | **0,935** | 0,000 | 0,000 | 0,000 | V | II | I | III |
| *Philinopsis giglioli* | 16 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | VII | III | I | I |
| *Pholoe minuta* | 32 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | III | III | II |
| *Phoronopsis harmeri* | 45 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | VI | III | II | III |
| *Phyllodoce groenlandica* | 40 | MT | 0,000 | 0,030 | **0,848** | 0,122 | 0,000 | V | VII | I | III |
| *Pinnixa rathbuni* | 28 | T | 0,000 | 0,000 | 0,135 | **0,865** | 0,000 | IV | III | II | III |
| Polynoidae gen. sp. | 5 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | IV | I | I |
| Polynoidae gen. sp. 4 | 5 | ET | 0,000 | 0,000 | 0,000 | 0,312 | **0,688** | IV | III | I | II |
| *Pontogeneia rostrata* | 5 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | IV | IV | I | I |

Окончание табл. 3

Table 3 finished

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Таксон | *Fq\** | Кластер | Кластер | | | | | Тип модели | | Бионтность | |
| ES | S | MT | T | ET | *A* | *Fq* | *A* | *Fq* |
| *Pontogeneia* sp*.* | 6 | ES | **0,946** | 0,054 | 0,000 | 0,000 | 0,000 | IV | IV | I | I |
| *Potamilla reniformis* | 7 | T | 0,000 | 0,006 | 0,350 | **0,644** | 0,000 | IV | V | I | II |
| *Potamocorbula amurensis* | 11 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | IV | I | I |
| *Praxillella gracilis* | 28 | ES | **0,969** | 0,031 | 0,000 | 0,000 | 0,000 | III | II | I | III |
| *Praxillella praetermissa* | 21 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | V | IV | I | III |
| *Praxillella* sp*.* | 56 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | V | II | I | II |
| *Priapulus caudatus* | 29 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | VII | IV | I | III |
| *Prionospio malmgreni* | 6 | ET | 0,000 | 0,000 | 0,000 | 0,000 | **1,000** | II | II | I | III |
| *Prionospio nova* | 7 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | III | IV | I | I |
| *Prionospio* sp*.* | 17 | S | 0,000 | **0,952** | 0,047 | 0,000 | 0,000 | IV | IV | I | III |
| *Protocallithaca adamsi* | 41 | MT | 0,000 | 0,454 | **0,545** | 0,000 | 0,000 | V | III | I | III |
| *Protomedeia epimerata* | 10 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | IV | I | II |
| *Protomedeia microdactyla* | 5 | ES | **0,745** | 0,255 | 0,000 | 0,000 | 0,000 | III | III | I | I |
| *Protomedeia popovi* | 5 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | IV | V | I | I |
| *Protomedeia* sp*.* | 20 | S | 0,000 | **0,988** | 0,011 | 0,000 | 0,000 | V | VII | I | I |
| *Protothaca jedoyensis* | 6 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | V | I | II |
| *Pseudopotamilla* sp*.* | 6 | ET | 0,000 | 0,001 | 0,007 | 0,145 | **0,847** | II | IV | III | I |
| *Raeta pulchella* | 50 | S | 0,012 | **0,988** | 0,000 | 0,000 | 0,000 | V | IV | II | III |
| Sabellidae gen. sp. | 20 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | V | III | III | II |
| *Scalibregma inflatum* | 98 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | V | V | III | III |
| *Schistomeringos japonica* | 74 | ET | 0,000 | 0,000 | 0,000 | 0,000 | **1,000** | II | II | I | III |
| *Scolelepis* sp*.* | 20 | S | 0,000 | **0,871** | 0,129 | 0,000 | 0,000 | IV | V | II | III |
| *Scoloplos armiger* | 153 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | III | III | III | III |
| *Serripes groenlandicus* | 7 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | IV | IV | I | I |
| *Sigambra bassi* | 105 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | IV | V | III | III |
| *Siliqua alta* | 8 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | IV | II | I | I |
| Sipuncula fam. gen. sp. | 25 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | V | III | II | II |
| *Solen krusensterni* | 5 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | II | II | I | I |
| Solenogastres fam. gen. sp. | 14 | ES | **1,000** | 0,000 | 0,000 | 0,000 | 0,000 | III | II | I | II |
| *Sphaerodoridium minutum* | 5 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | IV | IV | I | I |
| Spionidae gen. sp. | 63 | S | 0,000 | **0,895** | 0,105 | 0,000 | 0,000 | V | IV | II | III |
| *Spiophanes berkeleyorum* | 14 | S | 0,000 | **0,849** | 0,151 | 0,000 | 0,000 | IV | IV | I | II |
| *Spiophanes bombyx* | 84 | ES | **0,999** | 0,001 | 0,000 | 0,000 | 0,000 | II | II | III | III |
| *Sternaspis scutata* | 16 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | III | III | II | I |
| Syllidae gen. sp. | 6 | S | 0,014 | **0,986** | 0,000 | 0,000 | 0,000 | IV | V | I | I |
| *Synandwakia* sp*.* | 8 | MT | 0,000 | 0,000 | **1,000** | 0,000 | 0,000 | IV | IV | I | I |
| *Synidotea cinerea* | 5 | T | 0,000 | 0,000 | 0,000 | **0,994** | 0,006 | IV | V | II | II |
| *Synidotea epimerata* | 7 | ES | **0,983** | 0,017 | 0,000 | 0,000 | 0,000 | IV | III | I | I |
| Terebellidae gen. sp. | 19 | S | 0,000 | **0,926** | 0,074 | 0,000 | 0,000 | V | III | I | II |
| *Theora lubrica* | 49 | T | 0,000 | 0,000 | 0,028 | **0,972** | 0,000 | VI | III | II | III |
| *Westwoodilla rectangulata* | 6 | S | 0,000 | **1,000** | 0,000 | 0,000 | 0,000 | IV | V | I | II |
| *Westwoodilla* sp*.* | 5 | T | 0,000 | 0,000 | 0,000 | **1,000** | 0,000 | IV | V | I | I |
| *Yoldia johanni* | 27 | ES | **0,957** | 0,043 | 0,000 | 0,000 | 0,000 | V | V | I | I |
| *Yoldia keppeliana* | 6 | MT | 0,000 | 0,001 | **0,999** | 0,000 | 0,000 | IV | IV | I | I |
| *Yoldia* sp*.* | 13 | MT | 0,000 | 0,003 | **0,997** | 0,000 | 0,000 | IV | III | I | II |

\* Абсолютная.

*Примечание.* Жирным красным шрифтом выделены экспоненциальные веса для таксонов основного кластера; *A* – плотность; *Fq* – встречаемость. Бионтность: I, II и III – соответственно стенобионты, стено-эврибионты и эврибионты.