Table 3 Selected values of some species and the parameters of equations with the significance levels

| Families – Species – Collecting sites and years | Increasing or decreasing catch | Height of tropopause (km) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ≤ 9 | 9.5 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.5 | 13.0 | 13.5 | 14.0 | 14 ≤ |
| | | Parameters of equations and significance level | | | | | | | | | | | |
| Rhyacophilidae | | | | | | | | | | | | | |
| *Rhyacophila nubila* Zetterstedt, 1840 | Increasing | 0.65 | | 0.86 | 0.89 | 0.91 | 0.87 | 0.95 | 1.09 | 1.26 | 1.52 | | |
| Uppony, 1992 | | $y = 0.0323x^2 - 0.561x + 3.1217$ $R^2 = 0.9485$ $P < 0.001$ | | | | | | | | | | | |
| *Rhyacophila fasciata* Hagen, 1859 | Increasing | 0.56 | | 0.97 | 0.96 | 1.00 | 1.03 | | 1.04 | | | | |
| Szilvásvárad, 1980, Szarvaskő, 1989 | | $y = 0.037x^3 - 1.3151x^2 + 15.532x - 59.96$ $R^2 = 0.9424$ $P < 0.001$ | | | | | | | | | | | |
| *Rhyacophila obliterata* Mc Lachlan, 1867 | Increasing | 0.77 | | | 0.88 | 0.92 | 0.92 | 1.09 | | 1.86 | | | |
| Szilvásvárad, 1980 | | $y = 0.071x^2 - 1.4105x + 7.763$ $R^2 = 0.9504$ $P < 0.001$ | | | | | | | | | | | |
| Glossosomatidae | | | | | | | | | | | | | |
| *Glossosoma conformis* Neboiss, 1963 | Decreasing | 1.23 | | 1.19 | 1.06 | 1.04 | 0.88 | 0.87 | 0.88 | | | | 0.95 |
| Zemplén, 1998 | | $y = 0.0219x^2 - 0.5992x + 4.9601$ $R^2 = 0.8413$ $P < 0.01$ | | | | | | | | | | | |
| *Agapetus orchipes* Curtis, 1834 | Decreasing | 1.34 | | | 1.21 | 1.05 | 1,24 | 0.93 | 0.83 | | | | 0.46 |
| Szarvaskő, 1998 | | $y = -0.0133x^2 + 0.1625x + 0.9871$ $R^2 = 0.9156$ $P < 0.001$ | | | | | | | | | | | |
| Hydroptilidae | | | | | | | | | | | | | |
| *Agraylea sexmaculata* Curtis, 1834 | Decreasing | 1.38 | | 1.10 | 0.97 | 0.93 | 0.99 | 1.04 | 0.92 | | | | 0.81 |
| Szolnok, 2000 | | $y = 0.0178x^2 - 0.5183x + 4.584$ $R^2 = 0.7984$ $P < 0.01$ | | | | | | | | | | | |
| Ecnomidae | | | | | | | | | | | | | |
| *Ecnomus tenellus* Rambur, 1842 | Decreasing | 1.00 | | 1.00 | 1.21 | 1.12 | 0.98 | 0.82 | | | | 0.92 | |
| Szolnok, 2000 | | $y = 0.0189x^3 – 0.6611x^2 + 7.5423x – 27.12$ $R^2 = 0.5615$ $P < 0.05$ | | | | | | | | | | | |
| Polycentropodidae | | | | | | | | | | | | | |
| *Neureclipsis bimaculata* Linnaeus, 1758 | Decreasing | | 1.26 | 1.02 | 1.10 | 1.02 | 0.94 | 0.89 | | | | | 0.94 |
| Szolnok, 2000 | | $y = 0.0251x^2 - 0.6687x + 5.3362$ $R^2 = 0.8101$ $P < 0.01$ | | | | | | | | | | | |
| *Plectrocnemia conspersa* Curtis, 1834 | Decreasing | 1.23 | | 0.95 | 0.94 | 0.98 | 1.05 | 1.05 | 0.90 | | | | |
| Szarvaskő, 1989 | | $y = -0.0719x^3 + 2.44x^2 - 27.484x + 103.71$ $R^2 = 0.9965$ $P < 0.001$ | | | | | | | | | | | |

Table 3 Selected values of some species and the parameters of equations with the significance levels (continuation)

| Families – Species – Collecting sites and years | Increasing or decreasing catch | Height of tropopause (km) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ≤ 9 | 9.5 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.5 | 13.0 | 13.5 | 14.0 | 14 ≤ |
| | | Parameters of equations and significance level | | | | | | | | | | | |
| Hydropsychidae | | | | | | | | | | | | | |
| *Hydropsyche instabilis* Curtis, 1834 | Increasing | 0.59 | 0.83 | 0.99 | 0.99 | 1.05 | 1.00 | | 1.14 | | 1.35 | | |
| Szilvásvárad 1980, Bükk 1981, 1982, 1983, Dédestopolcsány 1988, Szarcaskő, 1989 | | $y = 0.0206x^3 - 0.7299x^2 + 8.6626x - 33.458$ $R^2 = 0.981$ $P < 0.001$ | | | | | | | | | | | |
| *Hydropsyche contubernalis* Mc Lachlan, 1865 | Increasing | 1.08 | | 1.04 | 0.96 | 0.92 | 0.90 | | 1.02 | | | 1.12 | |
| Szolnok, 2000 | | $y = 0.0039x^3 - 0.1147x^2 + 1.0789x - 2.1958$ $R^2 = 0.7514$ $P < 0.01$ | | | | | | | | | | | |
| *Hydropsyce bulgaromanorum* Malicky, 1977 | Decreasing | 1.54 | | 1.29 | 1.24 | 0.89 | 0.77 | 0.76 | | | | | 0.92 |
| Szolnok, 2000 | | $y = 0.0665x^2 - 1.7495x + 12.212$ $R^2 = 0.9214$ $P < 0.001$ | | | | | | | | | | | |
| Limnephilidae | | | | | | | | | | | | | |
| *Limnephilus affinis* Curtis, 1834 | Decreasing | 1.37 | | 1.20 | 1.13 | 1.03 | 0.97 | 0.77 | | | | 0.63 | |
| Szolnok, 2000 | | $y = 0.0153x^2 - 0.5164x + 4.8838$ $R^2 = 0.9652$ | | | | | | | | | | | |
| *Limnephilus flavicornis* Fabricius, 1787 | Decreasing | 1.30 | | | 0.96 | 1.11 | 1.06 | 1.03 | | 0.30 | | | |
| Szilvásvárad, 1980 | | $y = -0.0557x^2 + 0.997x - 3.052$ $R^2 = 0.7189$ $P < 0.05$ | | | | | | | | | | | |
| *Limnephilus rhombicus* Linaeus, 1758 | Decreasing | 1.44 | | 0.93 | 1.13 | 1.04 | 1.06 | 0.90 | | 0.89 | | | |
| Szilvásvárad, 1980 Bükk, 1982 | | $y = -0.0303x^3 + 1.0662x^2 - 12.482x + 49.659$ $R^2 = 0.7499$ $P < 0.05$ | | | | | | | | | | | |
| *Ecclisopteryx madida* Mc Lachlan, 1867 | Decreasing | | | | | | | | | | | | |
| Nagyvisnyó, 1984 Uppony, 1992 | | $y = -0.0119x^3 + 0.4411x^2 - 5.4833x + 23.753$ $R^2 = 0.9432$ $P < 0.001$ | | | | | | | | | | | |
| *Potamophylax nigricornis* Pictet 1834 | Decreasing | | 1.05 | 1.00 | 1.05 | 0.99 | 1.03 | 0.96 | 0.75 | | | | |
| Bükk, 1982, 1983 | | $y = -0.0385x^3 + 1.2435x^2 - 13.354x + 48.693$ $R^2 = 0.9486$ $P < 0.001$ | | | | | | | | | | | |
| *Halesus digitatus* Schrank, 1781 | Decreasing | 1.15 | | | 1.09 | 1.09 | 1.10 | 1.12 | | | 0.93 | | 0.20 |
| Szolnok, 2000 | | $y = -0.0359x^2 + 0.7437x - 2.6629$ $R^2 = 0.9414$ $P < 0.001$ | | | | | | | | | | | |
| Goeridae | | | | | | | | | | | | | |
| *Goera pilosa* Fabricius, 1775 | Increasing | | 0.72 | | 0.92 | 0.96 | 0.94 | 0.99 | 1.19 | | 1.57 | | |
| Uppony, 1992 | | $y = 0.0552x^2 - 1.0945x + 6.2083$ $R^2 = 0.9298$ $P < 0.001$ | | | | | | | | | | | |

Table 3 Selected values of some species and the parameters of equations with the significance levels (continuation)

| Families – Species – Collecting sites and years | Increasing or decreasing catch | Height of tropopause (km) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ≤ 9 | 9.5 | 10.0 | 10.5 | 11.0 | 11.5 | 12.0 | 12.5 | 13.0 | 13.5 | 14.0 | 14 ≤ |
| | | Parameters of equations and significance level | | | | | | | | | | | |
| Goeridae | | | | | | | | | | | | | |
| *Silo pallipes* Fabricius, 1781 | Increasing | 0.77 | 0.87 | 0.89 | 0.99 | 0.98 | 1.07 | 1.05 | 1.06 | 0.92 | | 0.99 | 1.38 |
| Szilvásvárad 1980, 1981, Nagyvisnyó 1984, Szarvaskő 1989, Zemplén 1998 | | $y = 0.0072x^3 - 0.261x^2 + 3.1637x - 11.751$ $R^2 = 0.8653$ $P < 0.001$ | | | | | | | | | | | |
| Sericostomatidae | | | | | | | | | | | | | |
| *Sericostoma personatum* Kirby & Spence, 1862 | Decreasing | 1.26 | 0.96 | 1.11 | 1.05 | 1.05 | 0.97 | 0.89 | 0.39 | | | | |
| Bükk, 1982, 1983 | | $y = -0.0583x^3 + 1.9446x^2 – 21.597x + 80.836$ $R^2 = 0.968$ $P < 0.001$ | | | | | | | | | | | |
| Odontoceridae | | | | | | | | | | | | | |
| *Odontocerum albicorne* Scopoli, 1763 | Increasing | 0.80 | | 0.70 | 0.99 | 1.05 | 1.08 | 1.00 | 0.90 | | 1.28 | | |
| Szilvásvárad, 1980, Bükk, 1982 Nagyvisnyó, 1984 | | $y = 0.0087x^3 - 0.2966x^2 + 3.4308x - 12.519$ $R^2 = 0.7088$ $P < 0.05$ | | | | | | | | | | | |
| Leptoceridae | | | | | | | | | | | | | |
| *Athripsodes albifrons* Linnaeus, 1758 | Decreasing | | 1.06 | 1.15 | 1.23 | 1.01 | 0.77 | 0.81 | | | | | 1.06 |
| Szolnok, 2000 | | $y = -0.0053x^2 + 0.0031x + 1.6521$ $R^2 = 0.9153$ $P < 0.05$ | | | | | | | | | | | |
| *Oecetis ochracea* Curtis, 1825 | Decreasing | 1.18 | | 1.16 | 1.04 | 0.97 | 1.01 | 0.92 | | 0.99 | | | |
| Data of Újhelyi (1971), Szolnok, 2000 | | $y = 0.0143x^3 - 0.4547x^2 + 4.712x - 14.763$ $R^2 = 0.8507$ $P < 0.001$ | | | | | | | | | | | |
| *Ceraclea dissimilis* Stephens 1836 | Decreasing | | 1.51 | 1.30 | 1.10 | 0.88 | 0.76 | 0.75 | | | | | 0.85 |
| Szolnok, 2000 | | $y = 0.071x^2 - 1.8694x + 12.971$ $R^2 = 0.9886$ $P < 0.00$ | | | | | | | | | | | |