



# Chironomidae

ST-Ch5 (89–34 cm): Only few specimens of amphibious species (*Pseudosmittia* and *Limnophyes*) and few head capsules (hc) of aquatic taxa (*Paratanytarsus* type A, *Corynoneura* type A, *Procladius*, and *Macropelopia*) were collected.

ST-Ch4 (100–89 cm): In the initial part of the phase, the abundance of chironomids rapidly decreases. The species richness and hc concentration rapidly decline in ST-Ch4 to 12 morphotypes and 0–3.8 hc/g, respectively. The number of hc in upper ST-Ch4 is much below 50 per sample and very low for temperature reconstruction. Only warm stenotherms—*Glyptotendipes*-type *pallens* and *Endochironomus*-type *albipennis*—reveal high dominance.

ST-Ch3 (131–100 cm): The subfossil concentration varies from 50 to 7 hc/g. In this zone, warm stenotherm *Glyptotendipes*-type *pallens* increases to 52%, but other warm-adapted taxa—*Endochironomus*-type *albipennis*, *Paratanytarsus*-type *nubeculosum*, *Tanytarsus*-type *pallidicornis*, *Einfeldia*-type *dissidens*, and *Chironomus*-type *plumosus* gradually decrease and in the upper part they are replaced by cooler climate-related *Microtendipes*-type *pedellus*. Cool-adapted *Chironomus*-type *anthracinus* is also more frequent in this zone. *Thienemannimyia* group aggregates many cold-related species; however it also includes common *Conchapelopia melanops* which is eurytopic and present in a wide range of temperatures.

ST-Ch2 (146–131 cm): The concentration of Chironomidae subfossils ranges from 20 hc/g at the beginning to 34 hc/g at the end of the zone. The main dominants are *Glyptotendipes*-type *pallens* reaching 37%, and warm-adapted paleoindicators *Endochironomus*-type *albipennis* (up to 13%), *Endochironomus*-type *tendens* (up to 4.6%), and *Cladotanytarsus*-type *mancus* (up to 8.6%). *Einfeldia*-type *dissidens*, *Chironomus*-type *plumosus*, and *Paratendipes*-type *albimanus* also occur frequently.

ST-Ch1 (158–146 cm): The number of hc starts to increase from about 150 cm b.g.l. The subfossil concentration varies from 2 to 26 hc/g of sediment. Warm-adapted *Glyptotendipes*-type *pallens* mainly dominates. Among the subdominant warm-adapted morphotypes, *Polypedilum*-type *sordens*, *Polypedilum*-type *nubeculosum*, and *Tanytarsus*-type *pallidicornis* occur frequently. The cold stenotherm taxa appear sporadically.

# Pollen

Bad preservation of pollen content.

ST-P2 (100–80 cm): In the last zone, the values of trees and shrubs reach almost 100%. At a depth of 95 cm, the values of *Picea* and *Quercus* increase, while at the end of the zone *Picea* percentages increase reaching almost 50% and *Pinus* percentage increases up to 25%. Momentarily, the *Alnus* communities collapse. Meanwhile, *Alnus* greatly decreases after 90 cm reaching less than 10% and *Quercus* also decreases. Algal spores increase to the top of core to more than 40% (highest value in the assemblages). *Artemisia* and *Chenopodiaceae* occur occasionally. Coprophilous fungal spores are absent from the depth of 90 cm.

ST-P1d (117–100 cm): Tree and shrub pollen sum remains at 95%. *Pinus* percentage stays stable but *Picea* greatly increases at the end of this phase, reaching 20%. In the meantime, algal spores are quite stable around 30%. Poaceae slightly decrease but stay under 10% as in the entire core. *Ulmus*, *Quercus*, and *Corylus* tend to decrease a little. Tree and shrub pollen increase slowly. *Chenopodiaceae* reappear with very low percentages.

ST-P1c (128–117 cm): Tree and shrub pollen sum remains at ca. 90%. *Pinus* and *Picea* generally increase, while *Alnus* decreases. *Carpinus* and *Chenopodiaceae* are absent. Poaceae seem to increase slightly. Coprophilous fungal spores have quite low values.

ST-P1b (138–128 cm): The values of trees and shrubs decrease a little but are still close to 90–95%. A slight decrease in *Pinus*, *Picea*, *Alnus*, *Betula*, and *Carpinus* values is observed. The percentage of *Artemisia* is continuous, but *Chenopodiaceae* decrease and disappear at the end of the phase. At the beginning of this phase, algal spores are very low and greatly increase later to reach almost 30%. Coprophilous fungi are absent and reappear when algal spores increase.

ST-P1a (150–138 cm): It is a forested environment (95% of tree and shrub pollen), mainly represented by *Alnus*. The taxa of the mixed oak forest (*Quercus*, *Ulmus*, *Tillia*, *Fraxinus*, and *Acer*) are also present at values between 5% and 18%. *Picea* and *Pinus* are represented by 10% each in this sequence. Herbaceous taxa are mainly represented by Poaceae, Cyperaceae, *Artemisia*, and *Chenopodiaceae*. Coprophilous fungi appear in low quantities

Bad preservation of pollen content.

# Cladocera

ST-CI4 (44–34 cm): Pelagic taxa increase significantly. Littoral taxa dominate with *Alona affinis* and *Chydorus sphaericus*.

ST-CI3 (78–44 cm): Only three littoral and one pelagic taxa occur. At the end, Cladocera taxa disappear.

ST-CI2d (100–78 cm): Pelagic taxa increase, while *Daphnia pulex*-group appears for the first time. Littoral taxa *C. sphaericus*, *A. affinis*, and *Coronatella rectangula* dominate, but *Pleuroxus uncinatus* is also significant. At the end, Cladocera taxa disappear.

ST-CI2c (112–100 cm): Cladocera number significantly decrease. Remains of *Alona guttata* var. *tuberculata* increase, and the frequency of *C. rectangula* continues to decrease. Pelagic taxa occur sporadically.

ST-CI2b (134–112 cm): There is a decline in *C. rectangula*, *Eubosmina* sp., and *Bosmina longirostris*, as well as *Simocephalus* sp. remains. *Pleuroxus truncatus* and *Alonella nana* appear for the first time.

ST-CI2a (150–134 cm): Littoral taxa dominate with *C. sphaericus*, *C. rectangula*, and *A. affinis*. Remains of *Camptocercus rectirostris*, *Eurycercus lamellatus*, *Graptoleberis testudinaria*, *A. guttata* var. *tuberculata*, *Leydigia acanthocercoides*, and *Disparalona rostrata* appear for the first time. Pelagic forms, *Eubosmina* sp., *B. longirostris*, and *Simocephalus* sp. are recorded for the first time.

ST-CI1 (158–150 cm): There is relatively low abundance of cladocerans with the dominance of *C. sphaericus*, *A. affinis*, and *C. rectangula* remains.