

DIATOM GENUS *PLANOETHIDIUM* FROM STREAMS AND RIVERS IN CALIFORNIA (USA): DIVERSITY, DISTRIBUTION AND AUTECOLOGY

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Planothidium taxa are common component of the stream periphyton. This study is based on 208 algal samples containing *Planothidium*, obtained in 2015-2016 from perennial and non-perennial streams and rivers across California, using a multihabitat sampling protocol. At least 600 diatom valves were identified and quantified from each sample. Nineteen *Planothidium* taxa were recorded in total, ranging from 0.3 to 81% relative abundance per sample, including new to science *P. sheathii* Stancheva. The genus was distributed within wide range of water parameters: specific conductance (CON 13.6-10344 $\mu\text{S}/\text{cm}$), dissolved organic carbon (DOC 0-73.8 mg/L), chloride (CHL 0.09-3300 mg/L), total nitrogen (TN 0-46 mg/L) and total phosphorus (TP 0-5 mg/L). A comparison of species-weighted means of the untransformed environmental variables, using randomization tests to obtain p-values, showed statistically significant differences in preferences of *Planothidium* taxa for CON and DOC ($p < 0.05$), but not for CHL, TN, or TP. The mean and ranges of CON and DOC for the most common species were as follows: *P. frequentissimum* Lange-Bert. (n = 172, CON 1233.8 (43.8-10344), DOC 3.6 (0-15.9)), *P. lanceolatum* Lange-Bert. (n = 163, CON 945.1 (27.1-6319), DOC 3.4 (0-73.8)), *P. robustum* Simonsen (n = 61, CON 1421.3 (130-3619), DOC 7.8 (2.1-15.9)), *P. cryptolanceolatum* Jahn & Abarca (n = 57, CON 537.6 (43.8-4014), DOC 3.1 (0-73.8)), *P. victorii* Novis, Braidwood & Killroy (n = 57, CON 1231.7 (43.8-10344), DOC 5.2 (0-12.7)), *P. engelbrechtii* Krammer & Lange-Bert. (n = 41, CON 896.6 (130-10344), DOC 7.7 (1.0-11.8)), *P. amphibium* Wetzel, Ector & Pfister (n = 33, CON = 407.7 (43.8-1914), DOC 3.9 (0.61-11.8)). Statistically significant differences in CON were detected for *P. amphibium* vs. *P. frequentissimum*, *P. amphibium* vs. *P. robustum*, *P. cryptolanceolatum* vs. *P. frequentissimum*, *P. cryptolanceolatum* vs. *P. robustum*, and in DOC for *P. amphibium* vs. *P. engelbrechtii*, *P. frequentissimum* vs. *P. engelbrechtii*, *P. frequentissimum* vs. *P. robustum*.