

POSTER PRESENTATION

USING DOTUS (DIATOMS OF THE UNITED STATES) TO ENHANCE STUDENT ENGAGEMENT AT UNDERGRADUATE AND GRADUATE LEVELS

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Diatoms of the United States (DOTUS) is an on-line taxonomic and ecological resource for a variety of users from scientists to students to the public. The information provided on DOTUS pages contributes to our knowledge of diatoms including species distribution, ecology, and variation among populations. Since 2011, students and researchers in *Ecology and Systematics of Diatoms* at the Iowa Lakeside Lab have contributed over 50 species pages to DOTUS for their final project to solidify their understanding of nomenclature, typology, intraspecific morphological variability, and autecology through peer-reviewed e-publication.

The 2017 class at Iowa Lakeside Lab examined the size range and morphology of ten taxa collected from five states, and compared some species to historical populations archived in the Reimer Herbarium. The taxa examined were *Nitzschia sigmaidea*, *Epithemia alpestris*, *Luticola goeppertiana*, and *L. hlubikovae* from Iowa; *Placoneis amphibola* and *Placoneis paraelginensis* from Minnesota; *Neidium saccoense* from Pennsylvania and Wisconsin; and *L. ignorata* and *L. frenguelli* co-occurring with an undescribed *Luticola* species from Oklahoma. Preparation of these DOTUS pages led to several findings: 1) the basionym was incorrectly cited for *Luticola goeppertiana* (Bleisch) Mann 1990, which led to validating the name in Rarick et al. (2017, *Notulae Algarum* 29), 2) two populations of *Placoneis paraelginensis* had wide variation in morphology, challenging our concept of this species, 3) *Placoneis amphibola* was found to be sympatric with another undetermined large *Placoneis*, and 4) one novel *Luticola* species was found on turtles. Using DOTUS as a pedagogical tool engages students in the practices of science and dissemination of knowledge. Contributing to DOTUS species

pages can lead to new observations that challenge and advance our understanding of diatom classification and ecology.

Views expressed are the authors' and not views or policies of the U.S.EPA.