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Littoral living Ostracoda from the Bracciano caldera-lake (Sabatini Volcanic Complex, central Italy)

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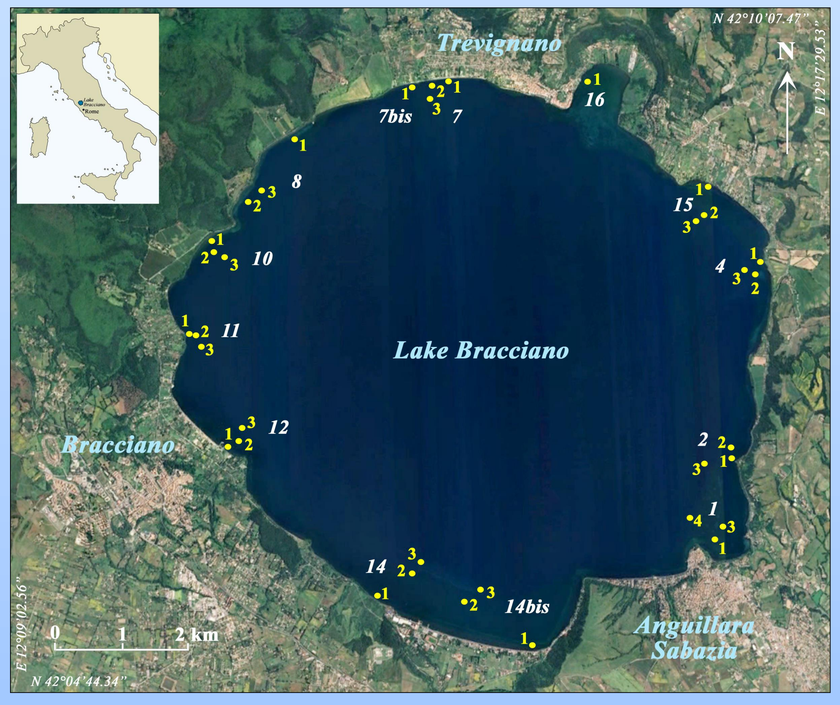
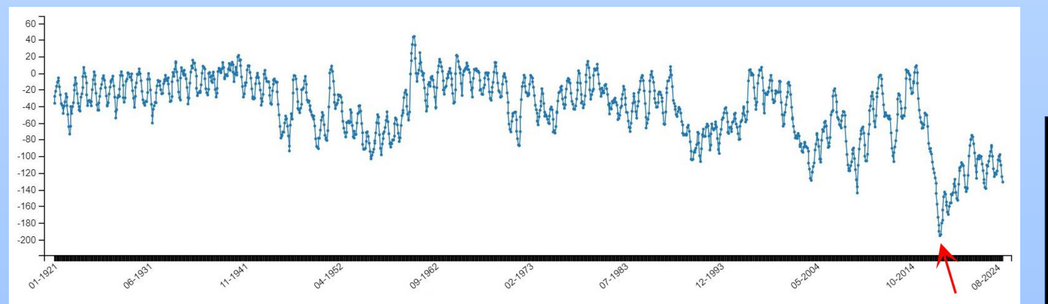
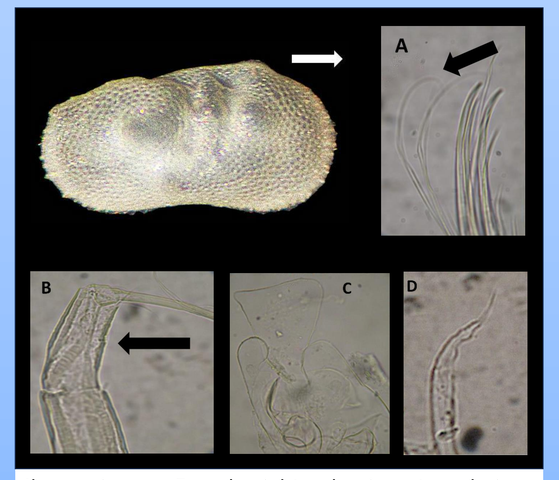
Bracciano Lake (site Natura 2000 – IT 6030010) occupies a volcano-tectonic depression in the Regional Natural Park of Bracciano-Martignano (Latium, central Italy). It has a surface area of about 57 km^2, a perimeter of about 31.5 km, and a maximum depth of 188 m below the hydrometric zero, located at 163 m a.s.l. Its water input is provided by precipitation, runoff waters, small ditches discharging as a result of meteoric events, and groundwater inflows. The natural outlet of Bracciano Lake is the Arrone River, whose discharge has gradually decreased over the last decades and has stopped since 2016. During November 2017, the lake level dropped at -198 cm, the maximum downdraw recorded in the last century. The lake is oligo-mesotrophic and warm monomictic, with a mixing phase from November to February (FERRARA *et al*., 2002).





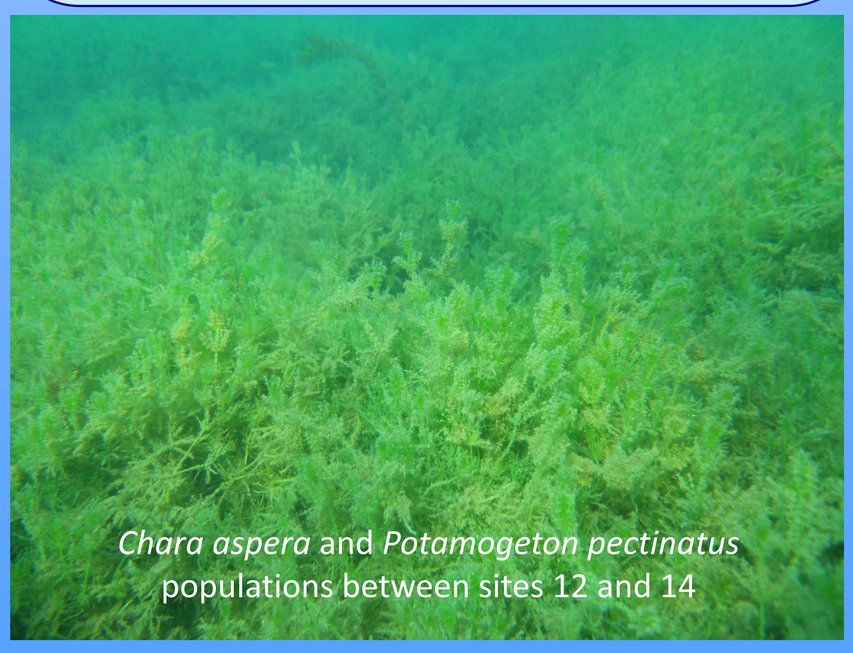
Lake level variations (cm), referred to the hydrometric zero, from 1st January 1921 to 4th September 2024. The red arrow indicates the severe drought occurred in November 2017.
source: https://www.parcobracciano.it/area-protetta/monitoraggio-acque/



Ilyocypris sp. - Female right valve in external view; A.-D., details of soft parts of an adult male: A. distal part of the antenna with swimming setae (arrow); B. penultimate segment of walking leg undivided (arrow); C. hemipenis; D. clasping organ.

During 2022-2023, four seasonal campaigns were carried out to collect ostracods from the littoral area of the lake (0.5-15 m of depth). Thirty-eight samples from 14 sampling sites located around the lake were collected each season using different sampling methods depending on the depths. At each sampling point, the main chemical and physical parameters of the water were measured, and the characteristics of the substratum, including grain size and the composition of aquatic macrophytes, were recorded for future evaluation on their impact on the ostracod distribution.

During summer and autumn surveys, eleven ostracod taxa were collected: *Darwinula stevensoni*, *Neglecandona angulata, Cyclocypris* sp., *Cypria* sp., *Ilyocypris* sp., *Herpetocypris* sp., *Heterocypris* sp., *Cypridopsis vidua*, *Limnocythere inopinata*, *Paralimnocythere* sp., and *Cyprideis torosa*. *Darwinula stevensoni* and *Cyprideis torosa* were the most commonly found species in most sampling sites (12 and 11 sites, respectively) at all the sampled depths. *Neglecandona angulata* mostly occurred in samples at -15 m, associated with *Cyprideis torosa* and often also with *Darwinula stevensoni* and *Ilyocypris* sp.
In previous studies, eight ostracod taxa were known from Lake Bracciano (ZSCHOKKE 1911; MASTRANTUONO 1995; MASTRANTUONO & MANCINELLI, 2005).



Chara aspera and *Potamogeton pectinatus* populations between sites 12 and 14

Extensive beds of Characeae were present at most of the sampling sites, especially at -7 m and to a lesser extent at -15 m. Few ostracod taxa were associated with dense macrophyte cover, namely *Darwinula stevensoni*, *Cyprideis torosa*, and *Ilyocypris* sp. The maximum number of ostracod taxa per sampling site was 9, collected at 0.5-1 m in the summer; two taxa (*Cyclocypris* sp. and *Herpetocypris* sp.) were exclusively found within the stands of *Ludwigia hexapetala*, an invasive alien macrophyte that was particularly widespread at site 1.

Zschokke, 1911; Mastrantuono, 1995; Mastrantuono & Mancinelli, 2005	Present work in progress (sampling 2022-2023)
Darwinula stevensoni	*Darwinula stevensoni*
Candona sp.	*Neglecandona neglecta*
Ilyocypris sp.	*Ilyocypris* sp.
Cypridopsis vidua	*Cypridopsis vidua*
Limnocythere sp.	*Limnocythere inopinata*
Cypria ophtalmica	*Cypria* sp.
Strandesia sp.	
Cytherissa lacustris	
	Cyclocypris sp.
	Herpetocypris sp.
	Heterocypris sp.
	Paralimnocythere sp.
	Cyprideis torosa

Ludwigia hexapetala in summer at site 1

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FERRARA O., VAGAGGINI D. & MARGARITORA F.G., 2002. *J. Limnol.*, 61(2): 169–175; **MASTRANTUONO L., 1995.** *Limnetica*, 11(2): 17-27; **MASTRANTUONO L. & MANCINELLI T., 2005.** *J. Limnol.*, 64(1): 43-53; **ZSCHOKKE F., 1911** Die Tiefseefauna der Seen Mitteleuropas. Dr. Werner Klinkhardt Verlag, Leipzig: 1-246.