

Supplementary Material

Table S1. Morphometric features of the irrigation network fed by the Lake Occhito waters. Area: surface area (m²), Depth: mean depth (m), Volume (m³), Distance: distance from the lake (km), Time: average travelling time of the water from the lake to the tank (h), Velocity: average water velocity from the lake to the tank (km h⁻¹).

Tank	Area	Depth	Volume	Distance	Time	Velocity
Finocchito	3000	10.0	30000	16	2	8
Tavoliere	8000	8.0	24000	30	4	8
Tank D	13000	17.7	53000	38	6	6
Tank 3	24000	31.7	95000	37	4	9
Tank P1	100	0.3	1000	47	5	9
Tank 5	6500	0.6	1700	51	6	9

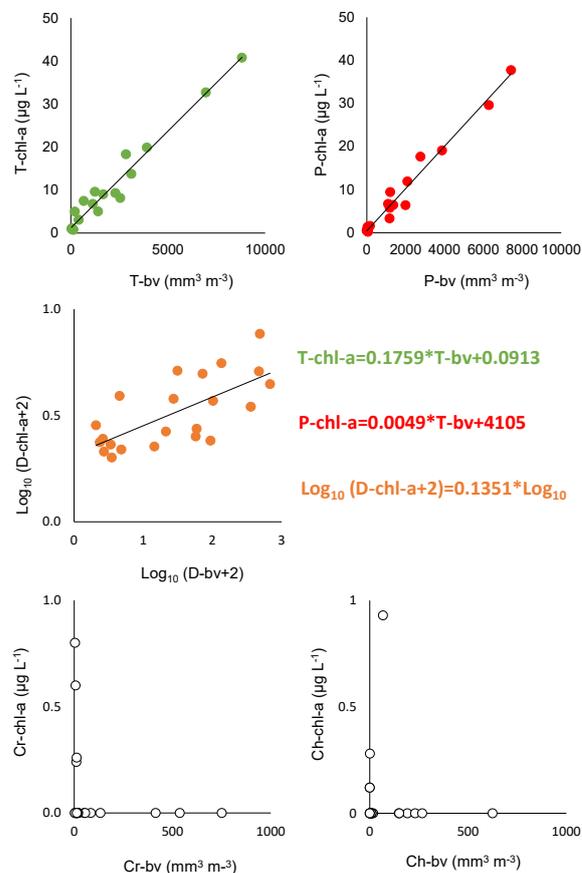


Figure S1. Relationships between biovolume and chlorophyll-a related to the total phytoplankton assemblage (upper left panel) and that related to specific FluoroProbe spectral classes: *P. rubescens* (upper right panel), diatoms (central panel), Cryptophyta (left lower panel), and Chlorophyta (right lower panel), measure between April 2009 and April 2010. See the manuscript text for explanation. Among the samples collected in the four field campaigns in the period April 2009–April 2010 a significant linear relationship was found between total biovolume (T-bv) and T-chl-a ($r = 0.98$; $N = 22$; p -value < 0.001 ; T-bv range = 32–8978 mm³ m⁻³) between the biovolume (P-bv) and the chlorophyll-a concentration of *P. rubescens* ($r = 0.99$; $N = 22$; p -value < 0.001 ; P-bv range = 3–7416 mm³ m⁻³) and between the biovolume (D-bv) and the chlorophyll-a concentration of Diatoms ($r = 0.69$, $N = 22$, p -value < 0.001 ; D-bv range = 0.1–680 mm³ m⁻³). Both D-chl-a and D-bv values were log transformed to meet the condition of normality distribution of the residuals (see section 2.4). No significant relationships were found for the other two classes, probably because of their very low contribution to the total biovolume (Fig. S1).

Table S2. List of species detected in Lake Occhito in the four field campaigns carried out between April 2009 and April 2010. In bold species that contributed significantly (>5% in a sample) to the phytoplankton population.

Species	Systematic group
<i>Aphanizomenon flos-aquae</i>	cyanobacteria
<i>Ceratium hirundinella</i>	dinophyceae
<i>Chrysocromulina parva</i>	chrysophyceae
<i>Closterium aciculare</i>	coniugate
<i>Closterium acutum</i>	coniugate
<i>Closterium acutum var. variabile</i>	coniugate
<i>Cosmarium sp.</i>	chlorophyceae
<i>Cryptomonas erosa</i>	cryptophyceae
<i>Cryptomonas marsonii</i>	cryptophyceae
<i>Cryptomonas ovata</i>	cryptophyceae
<i>Cryptomonas sp.</i>	cryptophyceae
<i>Cyclotella ocellata</i>	bacillariophyceae
<i>Cyclotella sp.</i>	bacillariophyceae
<i>Dinobryon divergens</i>	chrysophyceae
<i>Fragilaria acus</i>	bacillariophyceae
<i>Fragilaria crotonensis</i>	bacillariophyceae
<i>Fragilaria ulna</i>	bacillariophyceae
<i>Gymnodinium sp.</i>	dinophyceae
<i>Kathablepharis sp.</i>	cryptophyceae
<i>Mallomonas caudata</i>	chrysophyceae
<i>Mallomonas sp.</i>	chrysophyceae
<i>Microcystis aeruginosa</i>	cyanobacteria
<i>Monoraphidium contortum</i>	chlorophyceae
<i>Monoraphidium komarkovae</i>	chlorophyceae
<i>Monoraphidium sp.</i>	chlorophyceae
<i>Navicula sp.</i>	bacillariophyceae
<i>Oocystis lacustris</i>	chlorophyceae
<i>Phacus sp.</i>	dinophyceae
<i>Planktothrix rubescens</i>	cyanobacteria
<i>Rhodomonas lacustris</i>	cryptophyceae
<i>Rhodomonas lens</i>	cryptophyceae
<i>Rhodomonas minuta</i>	cryptophyceae
<i>Schroederia setigera</i>	chlorophyceae
<i>Snowella lacustris</i>	cyanobacteria
<i>Stephanodiscus minutulus</i>	bacillariophyceae

Table S3. Statistics of the *P. rubescens* cell density (10^6 cell L⁻¹) and microcystins concentrations (μ g L⁻¹) detected in the Finocchito tank monthly campaign (06 Apr 2009–13 Apr 2009) reporting minimum (Italic), median (bold), and maximum (normal) values. P-cd = *P. rubescens* cell density; E-mc = external microcystin concentrations; I-mc: intracellular microcystins concentrations; T-mc = total microcystin concentrations. T-mc is the sum of E-mc, and I-mc.

P-cd	E-mc	I-mc	T-mc
<i>0.1</i>	<i>0.1</i>	<i>0.3</i>	<i>0.4</i>
3.3	0.1	1.2	1.3
23	0.3	9.3	9.6

Table S4. Statistics of the microcystins concentrations ($\mu\text{g L}^{-1}$) detected in the synoptic campaign conducted on the main tanks (10 Jun 2009–23 Nov 2009), reporting minimum (Italic), median (bold), maximum (normal) values. E-mc = external microcystin concentrations; I-mc: internal microcystins concentrations; T-mc = total microcystin concentrations. T-mc is the sum of E-mc, and I-mc.

	E-mc	I-mc	T-mc
Finocchito	<i>0.1</i>	<i>0.3</i>	<i>0.5</i>
	0.1	2.3	2.4
	0.2	4.9	5.0
Tavoliere	<i>0.1</i>	<i>0.3</i>	<i>0.5</i>
	0.2	1.3	1.4
	0.2	3.2	3.4
Tank D	<i>0.1</i>	<i>0.3</i>	<i>0.4</i>
	0.1	1.1	1.2
	0.2	4.5	4.7
Tank 5	<i>0.1</i>	<i>0.3</i>	<i>0.4</i>
	0.3	0.4	0.6
	1.4	0.6	1.9
Tank P1	<i>0.1</i>	<i>0.3</i>	<i>0.4</i>
	0.1	0.4	0.5
	0.2	3.1	3.2
Tank 3	<i>0.1</i>	<i>0.3</i>	<i>0.4</i>
	0.2	0.3	0.5
	0.7	0.3	1.0