

Supplementary file

Updated list of all species of Cladocera with occurrence in the geographical areas of the new Checklist of the Italian Fauna and in the administrative regions of Italy.

Taxon	Authorship	WORMS AphiaID	Alien	Continental (S)									Peninsular (S)									Insular		Marine sectors								
				Ao	Pi	Lo	VT	V	FVG	Li	ER	To	Ma	Um	La	Abr	Mo	Cp	Pu	Bas	Cal	Si	Sa	1	2	3	4	5	6	7	8	9
Order CTENOPODA																																
Family Sidiidae																																
<i>Diaphanosoma brachyurum</i>	(Liévin, 1848)	234063	a	+	+	+	+	+	+		+	+	+	+	+			+	+	+	+											
<i>Diaphanosoma lacustris</i>	Kófišek, 1981	1302648					+					+		+	+			+		+	+											
<i>Latona setifera</i>	(O.F. Müller, 1776)	412860				+																										
<i>Latonopsis australis</i>	G.O. Sars, 1888	1302740										+																				
<i>Penilia avirostris</i>	Dana, 1849	106272							+													+	+	+	+	+	+	+	+	+	+	
<i>Sida crystallina</i>	(O.F. Müller, 1776)	410029				+	+	+				+				+	+	+														
Family Holopediidae																																
<i>Holopedium gibberum</i>	Zaddach, 1855	160273				+	+																									
Order ANOMOPODA																																
Family Bosminidae																																
<i>Bosmina (Bosmina) longirostris</i>	(O.F. Müller, 1785)	148379		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+											
<i>Bosmina (Eubosmina) coregoni</i>	Baird, 1857	106271			+	+	+					+																				
<i>Bosmina (Eubosmina) longispina</i>	Leydig, 1860	247977		+	+	+	+	+	+	+	+									+												
Family Daphniidae																																
Subfamily Daphniinae																																
<i>Ceriodaphnia affinis</i>	Lilljeborg, 1900	1303427	a																		+											
<i>Ceriodaphnia dubia</i>	Richard, 1894	1302376					+	+					+					+	+			+										
<i>Ceriodaphnia laticaudata</i>	P.E. Müller, 1867	148394		+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+									
<i>Ceriodaphnia megops</i>	G.O. Sars, 1862	1302380									+		+				+			+	+											
<i>Ceriodaphnia pulchella</i>	G.O. Sars, 1862	148395		+	+	+	+	+	+	+		+	+	+	+	+		+		+	+	+	+									
<i>Ceriodaphnia quadrangula</i>	O. F. Müller, 1785	148408		+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+									
<i>Ceriodaphnia reticulata</i>	(Jurine, 1820)	148400		+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+									
<i>Ceriodaphnia rotunda</i>	(Straus, 1820)	1302996					+			+																						
<i>Ceriodaphnia setosa</i>	Matile, 1890	1302390				+	+					+					+															
<i>Ceriodaphnia smirnovi</i>	Alonso, Neretina & Ventura, 2021																				+											
<i>Daphnia (Ctenodaphnia) atkinsoni</i>	Baird, 1859	1302467																+	+	+		+	+									
<i>Daphnia (Ctenodaphnia) bolivari</i>	Richard, 1888	1302469																	+			+										
<i>Daphnia (Ctenodaphnia) chevreauxi</i>	Richard, 1896	1302473															+			+		+	+									
<i>Daphnia (Ctenodaphnia) magna</i>	Straus, 1820	1302486											+	+			+			+	+	+	+									
<i>Daphnia (Ctenodaphnia) mediterranea</i>	Alonso, 1985	1302488																	+			+	+									
<i>Daphnia (Ctenodaphnia) similis</i>	Claus, 1876	1302496																	+													
<i>Daphnia (Daphnia) ambigua</i>	Scourfield, 1947	157608				+	+						+	+			+					+										
<i>Daphnia (Daphnia) cucullata</i>	G.O. Sars, 1862	148371				+	+	+	+	+	+	+	+	+	+	+			+			+										
<i>Daphnia (Daphnia) curvirostris</i>	Eylmann, 1887	1302516					+			+		+	+	+	+	+	+	+	+	+	+	+	+									
<i>Daphnia (Daphnia) galeata</i>	G.O. Sars, 1863	1302523				+	+	+	+	+		+	+	+	+	+		+	+	+	+	+	+									
<i>Daphnia (Daphnia) hyalina</i>	Leydig, 1860	148374		+	+	+	+	+			+	+	+	+	+			+	+	+	+	+										
<i>Daphnia (Daphnia) longispina</i>	O.F. Müller, 1776	148373		+	+	+	+	+	+	+	+	+	+	+	+			+	+	+	+	+										
<i>Daphnia (Daphnia) obtusa</i>	Kurz, 1875	1302544			+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+										
<i>Daphnia (Daphnia) parvula</i>	Fordyce, 1901	1302547			+									+				+			+	+										
<i>Daphnia (Daphnia) pulex</i>	Leydig, 1860	148375			+	+		+	+		+	+				+	+	+	+	+	+	+										
<i>Daphnia (Daphnia) pulicaria</i>	Forbes, 1893	1302553		+	+		+		+	+					+	+					+	+										
<i>Daphnia (Daphnia) rosea</i>	G.O. Sars, 1862	1302557		+		+	+	+	+	+		+	+	+	+	+		+			+	+										
<i>Daphnia (Daphnia) zschokkei</i>	Stingelin, 1894	1302571		+	+	+									+	+					+	+										

[illegible]

[illegible]

Taxonomic and distribution notes to the species of Cladocera occurring in the administrative regions of Italy. The data source of every regional occurrence not listed in the CKmap database (Margaritora 2005) and/or in the online version of the new Checklist of the Italian Fauna (Margaritora et al., 2021) are reported.

Taxon	Taxonomic notes	Distributional notes
Order CTENOPODA		
Family Sididae		
<i>Diaphanosoma brachyurum</i>		Sa: Coll. Margaritora; Bas: Alfonso (2007)
<i>Diaphanosoma lacustris</i>		
<i>Latona setifera</i>		
<i>Latonopsis australis</i>		Origin: Southeast Asia, Australia, or neighboring regions
<i>Penilia avirostris</i>		
<i>Sida crystallina</i>	Including ssp. <i>crystallina</i> reported in Margaritora (2005) and ssp. <i>limnetica</i> (Burckhardt, 1899)	La: Coll. Margaritora
Family Holopediidae		
<i>Holopedium gibberum</i>		
Order ANOMOPODA		
Family Bosminidae		
<i>Bosmina</i> (<i>Bosmina</i>) <i>longirostris</i>	Including ssp. <i>kessleri</i> Uljanin, 1874 reported in Margaritora (2005)	Mo, Cp: Coll. Margaritora; Pu: Marrone et al. (2007)
<i>Bosmina</i> (<i>Eubosmina</i>) <i>coregoni</i>		
<i>Bosmina</i> (<i>Eubosmina</i>) <i>longispina</i>		VT: Monti & Stella (1934) confirmed in 2007 (Coll. Margaritora); Sa: the single record (Cioglia et al., 1969) is doubtful
Family Daphniidae		
Subfamily Daphniinae		
<i>Ceriodaphnia affinis</i>	In Margaritora (2005) it was considered junior synonym of <i>C. dubia</i>	Reported for Italy by Błędzki & Rybak (2010) without indicating a precise locality
<i>Ceriodaphnia dubia</i>		Lo: Rossi et al. (2014); Pu: coll. Margaritora; Bas: Alfonso (2007)
<i>Ceriodaphnia laticaudata</i>		Ao, To, Abr, Mo, Cp, Bas: Coll. Margaritora; Pi: Piscia et al. (2006); Pu: Alfonso et al. (2012)
<i>Ceriodaphnia megops</i>		
<i>Ceriodaphnia pulchella</i>		Sa: Fadda et al., 2011; Cp: Coll. Margaritora; Cal: Alfonso (2007)
<i>Ceriodaphnia quadrangula</i>	Including ssp. <i>hamata</i> Sars, 1890 reported in Margaritora (2005); populations from the Mediterranean ecoregion need to be re-examined after the description of <i>C. smirnovi</i> (Alonso et al., 2021)	Um: Taticchi (1968); Mo, Bas: Coll. Margaritora; Pu: Alfonso et al. (2016)
<i>Ceriodaphnia reticulata</i>	Including ssp. <i>kurzii</i> Stingelin, 1895 and ssp. <i>serrata</i> Stingelin, 1895, both reported in Margaritora (2005)	Ao, Cp: Coll. Margaritora
<i>Ceriodaphnia rotunda</i>		
<i>Ceriodaphnia setosa</i>		Pi: Bonacina & Pasteris (2001)
<i>Ceriodaphnia smirnovi</i>	Not reported in Margaritora (2005)	Si: Alonso et al. (2021)
<i>Daphnia</i> (<i>Ctenodaphnia</i>) <i>atkinsoni</i>		Pu: Alfonso et al. (2012); Bas: Coll. Margaritora
<i>Daphnia</i> (<i>Ctenodaphnia</i>) <i>bolivari</i>	Not reported in Margaritora (2005); reported in Margaritora (1972) sub <i>Daphnia atkinsoni</i> Baird, 1859	Pu: Alfonso et al. (2012); Sa: Margaritora (1972) sub <i>Daphnia atkinsoni</i> (Coll. Margaritora)
<i>Daphnia</i> (<i>Ctenodaphnia</i>) <i>chevreuxi</i>		Pu: Alfonso et al. (2012)
<i>Daphnia</i> (<i>Ctenodaphnia</i>) <i>magna</i>		To, La, Cp, Bas: Coll. Margaritora; Pu: Alfonso et al. (2012)
<i>Daphnia</i> (<i>Ctenodaphnia</i>) <i>mediterranea</i>	In Margaritora (1985) reported sub <i>D. (C.) dolichocephala</i> Sars, 1895; identification corrected in Margaritora (2005)	Pu: Alfonso et al. (2012)
<i>Daphnia</i> (<i>Ctenodaphnia</i>) <i>similis</i>	Not reported in Margaritora (2005); a comparison with <i>Daphnia sinensis</i> Gu et al., 2013 is required	Pu: Alfonso et al. (2012)
<i>Daphnia</i> (<i>Daphnia</i>) <i>ambigua</i>		Origin: North America
<i>Daphnia</i> (<i>Daphnia</i>) <i>cucullata</i>		Um: Taticchi (1979); Bas: Alfonso (2007) as hybrid, not reported in Margaritora et al. (2021)
<i>Daphnia</i> (<i>Daphnia</i>) <i>curvirostris</i>		Abr, Mo, Cp, Bas: Coll. Margaritora
<i>Daphnia</i> (<i>Daphnia</i>) <i>galeata</i>		Si: Marrone & Vecchioni (2020); Sa, Abr: Coll. Margaritora; Pu: Alfonso et al. (2016) as hybrid, not present in Margaritora et al. (2021); Cal: Alfonso (2007)
<i>Daphnia</i> (<i>Daphnia</i>) <i>hyalina</i>	Synonym of <i>D. longispina</i> based on the 12S rDNA marker according to Petrussek et al. (2008); however, given the presence of cryptic species in Italian <i>D. longispina</i> , and the possibility of introgression of mtDNA, the status of the Italian populations needs to be re-examined (Marková et al., 2017); the species is considered as valid in the checklist by Kotov et al. (2013)	Pu: Marrone et al. (2007)

<i>Daphnia (Daphnia) longispina</i>	Including ssp. <i>littoralis</i> Sars, 1890; ssp. <i>rectifrons</i> Stingelin, 1895; ssp. <i>frigidolimnetica</i> Ekman, 1904, all reported in Margaritora (2005)	
<i>Daphnia (Daphnia) obtusa</i>		Um, Cp: Coll. Margaritora; Pu: Alfonso et. al. (2016)
<i>Daphnia (Daphnia) parvula</i>		La: Coll. Margaritora; Bas: Alfonso (2007); origin: North and South America
<i>Daphnia (Daphnia) pulex</i>	Molecular studies showed the presence of North American strains in N and Sa (Marková et al., 2017)	Sa, Pi: Marková et al., 2013; Um, Cp: Coll. Margaritora; Pu: Marrone et al. (2007)
	Molecular taxonomy is needed to confirm the distribution of the species in Italy; moreover, hybrids of <i>D. pulicaria</i> x <i>D. pulex</i> are present in N and Sa; finally the populations ascribed in Margaritora (2005) to <i>D. middendorffiana</i> Fischer, 1851 from the Italian Alps should be attributed to <i>D. pulicaria</i> (see the review in Marková et al., 2013)	
<i>Daphnia (Daphnia) pulicaria</i>		Sa, Pi: Marková et al., 2013; Ao: Tiberti (2011); Mo, Cp: Coll. Margaritora
	Synonym of <i>D. longispina</i> based on the 12S rDNA marker according to Petrusek et al. (2008); however, given the presence of cryptic species in Italian <i>D. longispina</i> , and the possibility of introgression of mtDNA, the status of the Italian populations needs to be re-examined (Marková et al., 2017); the species is considered as species inquirenda in the checklist by Kotov et al. (2013)	Um, Cp: Coll. Margaritora; Bas: Alfonso (2007)
<i>Daphnia (Daphnia) rosea</i>		
	Synonym of <i>D. longispina</i> based on morphology (according to Benzie, 2005) and on the 12S rDNA marker according to Petrusek et al. (2008); however, given the presence of cryptic species in Italian <i>D. longispina</i> , and the possibility of introgression of mtDNA, the status of the Italian populations needs to be re-examined (Marková et al., 2017); the species is considered as species inquirenda in the checklist by Kotov et al. (2013)	
<i>Daphnia (Daphnia) zschokkei</i>		
<i>Simocephalus (Aquipiculus) heilongjiangensis</i>	Subgeneric status introduced by Orlova-Bienkowskaja (1998)	Origin: China
<i>Simocephalus (Croronocephalus) serrulatus</i>		V: Coll. Margaritora; Ma: Moroni & Bellavere (2001)
<i>Simocephalus (Echinocaudus) congener</i>		Sa, Cp: Coll. Margaritora
<i>Simocephalus (Echinocaudus) exspinosus</i>		Cp: Coll. Margaritora
<i>Simocephalus (Simocephalus) vetulus</i>		Mo: Coll. Margaritora
Subfamily Scapholeberinae		
<i>Megafenestra aurita</i>		To: Coll. Margaritora
<i>Scapholeberis mucronata</i>		La, Cp: Coll. Margaritora
<i>Scapholeberis rammneri</i>		V: Coll. Margaritora
Family Moinidae		
<i>Moina (Moina) affinis</i>		Origin: North America
<i>Moina (Moina) brachiata</i>		Um: Coll. Margaritora; Pu: Alfonso et al. (2016)
<i>Moina (Exomoina) macrocopa</i>		V, Abr: Coll. Margaritora
<i>Moina (Moina) micrura</i>		Sa, To: Coll. Margaritora; Pu: Alfonso et al. (2016); Bas, Cal: Alfonso (2007)
<i>Moina (Moina) salina</i>	In Margaritora (1985) reported sub <i>M. mongolica</i> Daday, 1901; identification corrected Margaritora (2005)	
<i>Moina (Moina) weismanni</i>		Origin: Japan
Family Ilyocryptidae		
<i>Ilyocryptus acutifrons</i>		
<i>Ilyocryptus agilis</i>		
<i>Ilyocryptus cuneatus</i>	Not reported in Margaritora (2005)	FVG: Coll. Margaritora; Pi: erroneously reported in Margaritora et al. (2021), deleted
<i>Ilyocryptus sordidus</i>		
Family Macrothricidae		
<i>Drepanothrix dentata</i>		
<i>Lathonura rectirostris</i>		
<i>Macrothrix hirsuticornis</i>	Italian records attributed to <i>M. groenlandica</i> Lilljeborg, 1900 are included according to Błędzki & Rybak (2010)	Mo, Cp: Coll. Margaritora; Pu: Alfonso et al. (2016)
<i>Macrothrix laticornis</i>		Abr: Coll. Margaritoira; Bas: Alfonso (2007)
<i>Macrothrix rosea</i>	Syn. <i>Echinisca rosea</i> (Liévin, 1848)	
<i>Streblocerus serricaudatus</i>		
<i>Wlassicsia pannonica</i>		ER: Coll. Margaritora
Family Eurycercidae		
<i>Eurycercus (Eurycercus) lamellatus</i>		Si: Moniez (1889), never confirmed; V, Cp: Coll. Margaritora
Family Chydoridae		

Subfamily Chydorinae			
<i>Alonella (Alonella) excisa</i>			Ma, Pu: Coll. Margaritora
<i>Alonella (Alonella) exigua</i>			Si: Moniez (1889), never confirmed; VT: Coll. Margaritora
<i>Alonella (Nanoalonella) nana</i>			Si: Moniez (1889), never confirmed, and not reported in Margaritora et al. (2021); VT: Coll. Margaritora
<i>Anchistropus emarginatus</i>			
<i>Chydorus gibbus</i>			
<i>Chydorus latus</i>			
<i>Chydorus ovalis</i>			
<i>Chydorus sphaericus</i>			
<i>Disparalona leei</i>	Not reported in Margaritora (2005); first citation from Italy: Rossetti et al. (2009) sub <i>Phrixura</i> P. E. Müller, 1867		Mo: Coll. Margaritora
<i>Disparalona rostrata</i>			Lo: Rossetti et al. (2009); Pu: Coll. Margaritora; both regional records not reported in Margaritora et al. (2021); origin: North America
<i>Dunhevedia crassa</i>			Ma: Coll. Margaritora; Bas, Cal: Alfonso (2007)
<i>Ephemeroporus phintonicus</i>			To, Abr: Coll. Margaritora
<i>Estatheroporus gauthieri</i>			
<i>Paralona pigra</i>			Si: Troia et al. (2016)
<i>Pleuroxus aduncus</i>			Lo: Leoni et al., 2021; Pu: Alfonso et al. (2016); both recors not reported in Margaritora et al. (2021)
<i>Pleuroxus denticulatus</i>			Li, Ma, Mo, Cp: Coll. Margaritora
<i>Pleuroxus laevis</i>			Li, Ma, Um: Coll. Margaritora
<i>Pleuroxus letourneuxi</i>			
<i>Pleuroxus striatus</i>			Pu: Alfonso et al. (2012); Bas: Coll. Margaritora
<i>Pleuroxus trigonellus</i>			Pi: Bonacina & Pasteris (2001)
<i>Pleuroxus truncatus</i>			Lo: Leoni et al. (2021)
<i>Pleuroxus uncinatus</i>			
<i>Pseudochydorus globosus</i>			Li: Coll. Margaritora
Subfamily Aloninae			Sa: Coll. Margaritora
<i>Acroperus angustatus</i>			
<i>Acroperus harpae</i>			
<i>Alona intermedia</i>	Reported in Margaritora (2005) sub <i>Biapertura intermedia</i> Smirnov, 1971		Ma, Cp: Coll. Margaritora
<i>Alona quadrangularis</i>			Lo: Leoni et al. (2021), not reported in Margaritora et al. (2021)
<i>Alonopsis elongata</i>			Abr, Cp, Cal: Coll. Margaritora
<i>Biapertura affinis</i>			
<i>Camptocercus rectirostris</i>			Cp: Coll. Margaritora; Pu: Alfonso et al. (2012)
<i>Camptocercus uncinatus</i>			V: Ferrari et al. (1982); Cp: Coll. Margaritora
<i>Coronatella (Coronatella) rectangula rectangula</i>	Reported in Margaritora (2005) sub <i>Alona</i> Baird 1843; including ssp. <i>pulchra</i> (Behning, 1941) and ssp. <i>richardi</i> Stingelin, 1895; see Sinev (2020b)		Mo: Coll. Margaritora; Pu: Marrone et al. (2007)
<i>Coronatella (Ephemerazona) elegans elegans</i>	Reported in Margaritora (2005) sub <i>Alona</i> Baird 1843; including ssp. <i>arcuata</i> Herbst, 1964; see Sinev (2020b)		La, To, Um, Bas: Coll. Margaritora, not reported for La in Margaritora et al. (2021); Pu: Alfonso et al. (2016)
<i>Flavalona costata</i>	Reported in Margaritora (2005) sub <i>Alona</i> Baird 1843; see Sinev & Dumont (2016)		
<i>Flavalona rustica</i>	Reported in Margaritora (2005) sub <i>Alona</i> Baird 1843; see Sinev & Dumont (2016)		VT, La: Coll. Margaritora; ER: Coll. Museo di Trento
<i>Graptoleberis testudinaria</i>			Si: Moniez (1889) conf. 2008 Coll. Margaritora, V: Ferrari et al. (1982); Cp: Coll. Margaritora
<i>Kurzia latissima</i>			Si: Moniez (1889), never confirmed
<i>Leberis diaphanus</i>	Reported in Margaritora (2005) sub <i>Alona</i> Baird 1843; syn. <i>Alona davidi</i> , Richard, 1895; see Sinev et al. (2005)		
<i>Leydigia (Leydigia) leydigi</i>			Abr, Cal: Coll. Margaritora
<i>Leydigia (Neoleydigia) acanthocercoides</i>			Pu: Alfonso et al. (2016), not reported in Margaritora et al. (2021)
<i>Leydigia (Neoleydigia) korovchinskiyi</i>	Not reported in Margaritora (2005)		Bagella et al., 2016
<i>Monospilus dispar</i>			Lo: Leoni et al. (2021)
<i>Ovalona anastasia</i>	Reported in Margaritora (2005) sub <i>Alona azorica</i> Frenzel & Alonso, 1988; see Sinev (2015)		Si: Troia et al. (2016); Pu: Alfonso et al. (2016)
<i>Ovalona nuragica</i>	Reported in Margaritora (2005) sub <i>Alona</i> Baird 1843; see Sinev (2015)		Pu: Alfonso et al. (2012)

<i>Oxyurella tenuicaudis</i>		Lo: Leoni & Cotta Ramusino (1996); Abr: Coll. Margaritora; Pu: Marrone et al. (2007)
<i>Phreatalona protzi</i>	Reported in Margaritora (2005) sub <i>Alona</i> Baird 1843; see Van Damme et al. (2009)	
<i>Prendalona guttata</i>	Reported in Margaritora (2005) and Margaritora et al. (2021) sub <i>Alona</i> Baird 1843 and transferred to <i>Prendalona</i> Sousa, Elmoor-Loureiro & Santos, 2018 by Sinev et al. (2023); including ssp. <i>tuberculata</i> , Kurz, 1874	Cp: Coll. Margaritora
<i>Rhynchotalona falcata</i>		
<i>Tretocephala ambigua</i>		Cp, Bas: Coll. Margaritora
Order ONYCHOPODA		
Family Polyphemidae		
<i>Polyphemus pediculus</i>		V: Salmaso & Naselli-Flores (1999); Si: Faranda (1977); both records not reported in Margaritora et al. (2021)
Family Cercopagidae		
<i>Bythotrephes longimanus</i>		V: Salmaso & Naselli-Flores (1999), not reported in Margaritora et al. (2021)
Family Podonidae		
<i>Evadne nordmanni</i>		
<i>Evadne spinifera</i>		
<i>Pleopis polyphemoides</i>		
<i>Podon intermedius</i>		
<i>Pseudevadne tergestina</i>		V: Ferrari et al. (1982)
Order HAPLOPODA		
Family Leptodoridae		
<i>Leptodora kindtii</i>		Bas: Alfonso (2007)