

**Communities of Chironomidae (Diptera) from four ecological zones delimited by the Mediterranean coastal ecosystems of Morocco (Moroccan Rif). Updated list and faunal data from the last two decades**

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**Tab. S1.** List and distribution of species in the four ecological zones of the Mediterranean coastal region of Morocco (Moroccan Rif). Typology of the four ecological zones: 1, estuarine zone including pools and wet meadows (altitude 0-10 m); 2, Potamal (alt. 10-350 m); 3, lower basin of streams and wadi (alt. 350-1000 m); 4, upper basin of streams, springs, peat bogs (alt. >1000 m).

List of species	Record	Zone	Zone	Zone	Zone
		1	2	3	4
<b>Buchonomyinae: 1 genus ; 1 species</b>					
<i>Buchonomyia thienemanni</i> Fittkau, 1955	P		+	+	
<b>Tanypodinae: 12 ; 21</b>					
<i>Conchapelopia pallidula</i> (Meigen, 1818)	*		+	+	
<i>Larsia atrocincta</i> (Goetghebuer, 1942)	P		+	+	
<i>Macropelopia nebulosa</i> (Meigen, 1804)	P		+	+	
<i>Nilotanypus dubius</i> (Meigen, 1804)	P		+	+	
<i>Paramerina cingulata</i> (Walker, 1856)	P		+	+	
<i>P.</i> cf. "spec. Griechenland" (sensu Fittkau, 1962) **	P		+	+	
<i>Procladius (Holotanypus) choreus</i> (Meigen, 1804)	P	++	++		
<i>P. (H.) culiciformis</i> (Linnaeus, 1767)	*		(+)		
<i>P. (H.) sagittalis</i> (Kieffer, 1909)	P	(+)	(+)	(+)	
<i>Rheopelopia maculipennis</i> (Zetterstedt, 1838)	P	+	++		
<i>R. murrayi</i> Dowling, 1983 **	P		(+)	(+)	
<i>R. ornata</i> (Meigen, 1838)	P		+	+	
<i>Tanypus punctipennis</i> (Meigen, 1818)	P	+	+		
<i>Thienemannimyia berkaneae</i> Dowling, 1987 **	P			(+)	(+)
<i>T. laeta</i> (Meigen, 1818)	P		+	+	
<i>T. lentiginosa</i> (Fries, 1823)	P	+	+	+	
<i>Trissopelopia longimana</i> (Staeger, 1839)	P	+	+		
<i>Xenopelopia nigricans</i> (Goetghebuer, 1927)	P		+	+	
<i>Zavrelimyia barbatipes</i> (Kieffer, 1911) **	P				(+)
<i>Z. berberi</i> Fittkau, 1962 **	P				(+)
<i>Z. melanura</i> (Meigen, 1804) **	P			(+)	(+)
<b>Diamesinae: 4 ; 8</b>					
<i>Boreoheptagyia legeri</i> (Goetghebuer, 1933)	P			+	+
<i>Diamesa hamaticornis</i> Kieffer, 1924	P			(+)	
<i>D. insignipes</i> Kieffer, 1908 **	P			(+)	
<i>D. latitarsis</i> (Goetghebuer, 1921) **	P			?	(+)
<i>D. veletensis</i> Serra-Tosio, 1971 **	P			?	(+)
<i>Potthastia gaedii</i> (Meigen, 1838)	P		++	++	
<i>P. pastoris</i> (Edwards, 1933) **	*		(+)	(+)	
<i>Sympotthastia zavreli</i> Pagast 1947 **	P		(+)	(+)	
<b>Prodiamesinae: 1 ; 1</b>					
<i>Prodiamesa olivacea</i> (Meigen, 1818)	P	+	+	+	
<b>Orthocladiinae: 30 ; 143</b>					
<i>Acricotopus lucens</i> (Zetterstedt, 1850)	*	+	+		
<i>Brillia bifida</i> (Kieffer, 1909)	P	+	++	+	
<i>Bryophaenocladus aestivus</i> (Brundin, 1947) **	*			(+)	(+)
<i>B. flexidens</i> (Brundin, 1947)	*			(+)	(+)
<i>B.</i> cf. <i>furcatus</i> Thienemann & Strenzke, 1940	*			(+)	(+)
<i>B. illimbatus</i> (Edwards, 1929) **	*			(+)	(+)
<i>B. muscicola</i> (Kieffer, 1906)	*			(+)	(+)
<i>B. nidorum</i> (Edwards, 1929)	*			(+)	(+)
<i>B. subvernalis</i> (Edwards, 1929) **	P			(+)	(+)

List of species	Record	Zone 1	Zone 2	Zone 3	Zone 4
<i>B. tuberculatus</i> (Edwards, 1929)	*	(+)	+		
<i>B. sp. 1</i> **	***			(+)	(+)
<i>B. sp. 2</i> **	***			(+)	(+)
<i>B. sp. 3</i> (known from S-France) **	*			(+)	
<i>Camptocladius stercorarius</i> (De Geer, 1976)	*	++			++
<i>Cardiocladius capucinus</i> (Zetterstedt, 1850)	P	+	++		
<i>C. fuscus</i> Kieffer, 1924	P			(+)	(+)
<i>Chaetocladius acuticornis</i> Kieffer, 1914 *	P			(+)	(+)
<i>C. dentiforceps</i> (Edwards, 1929) *	*			(+)	(+)
<i>C. melaleucus</i> (Meigen, 1818)	P			(+)	(+)
<i>C. piger</i> (Goetghebuer, 1913) **	*			(+)	(+)
<i>Corynoneura cariana</i> Edwards, 1924	P		+	+	
<i>C. celtica</i> Edwards, 1924	P				+
<i>C. lacustris</i> Edwards, 1924	P		+	+	
<i>C. lobata</i> Edwards, 1924	P		+	+	
<i>C. scutellata</i> Winnertz, 1846	*		++	+	
<i>Corynoneurella paludosa</i> Brundin, 1949 **	P		(+)	(+)	
<i>Cricotopus (Cricotopus) albiforceps</i> (Kieffer in Thienemann & Kieffer, 1916)	P	+	+		
<i>C. (C.) annulator</i> Goetghebuer, 1927	P		++	++	
<i>C. (C.) beckeri</i> Hirvenoja, 1973	P		+	+	
<i>C. (C.) bicinctus</i> (Meigen, 1818)	P	++	++		
<i>C. (C.) caducus</i> Hirvenoja, 1973	*	++	+		
<i>C. (C.) ephippium</i> (Zetterstedt, 1838)	*	+	+		
<i>C. (C.) pallidipes</i> Edwards, 1929	P	+	+		
<i>C. (C.) pulchripes</i> Verrall, 1912	*			+	
<i>C. (C.) similis</i> Goetghebuer, 1921	P		(+)	(+)	
<i>C. (C.) tremulus</i> (Linnaeus, 1758) **	P		(+)	(+)	
<i>C. (C.) triannulatus</i> (Macquart, 1826)	P	+	+		
<i>C. (C.) trifascia</i> Edwards, 1929	P		++	+	
<i>C. (C.) vierriensis</i> Goetghebuer, 1935	P	+	+	+	
<i>C. (Isocladius) sylvestris</i> (Fabricius, 1794)	P	++	++		
<i>C. (I.) tricinctus</i> (Meigen, 1818)	*	+	+		
<i>C. (Paratrichocladius) micans</i> (Kieffer, 1918)	P	+	++	(+)	
<i>C. (P.) osellai</i> Rossaro, 1990 **	*			(+)	(+)
<i>C. (P.) rufiventris</i> (Meigen, 1830)	P		+	(+)	
<i>C. (P.) skirwithensis</i> (Edwards, 1929) **	P			(+)	
<i>C. (P.) sp. 1</i> (near <i>lanzavechiae</i> Rossaro, 1990) **	***			(+)	
<i>C. (P.) sp. 2</i> (known from W-Corsica)	***			(+)	
<i>Eukiefferiella bedmari</i> Vilchez-Quero & Laville, 1988	P		(+)	++	
<i>E. brevicealcar</i> (Kieffer, 1911)	P			+	+
<i>E. claripennis</i> (Lundbeck, 1898)	P	+	++	+	
<i>E. clypeata</i> (Thienemann, 1919)	P		+	+	
<i>E. coeruleascens</i> (Kieffer in Zavřel, 1926)	P			+	+
<i>E. cyanea</i> Thienemann, 1936	P			+	+
<i>E. devonica</i> (Edwards, 1929)	P		++	+	+
<i>E. dittmari</i> Lehmann, 1972	P		+	+	
<i>E. fuldensis</i> Lehmann, 1972	P		+	+	+
<i>E. ilkleyensis</i> (Edwards, 1929)	P		+	+	+
<i>E. pseudomontana</i> Goetghebuer, 1935	P			+	(+)
<i>E. similis</i> Goetghebuer, 1939	P		+	+	
<i>E. tirolensis</i> Goetghebuer, 1938	P			++	+
<i>E. sp. 1</i> **	***			(+)	(+)
<i>E. sp. 2</i> (near <i>gracei</i> Edwards, 1929) **	***			(+)	?

List of species	Record	Zone 1	Zone 2	Zone 3	Zone 4
<i>Hydrobaenus conformis</i> (Holmgren, 1869) **	*	(+)			
<i>H. sp. 1</i> (cf. <i>cranstoni</i> Langton & Cobo, 1992) **	*		(+)		
<i>Hydrosmittia oxoniana</i> (Edwards, 1929) **	P			(+)	(+)
<i>H. ruttneri</i> (Strenzke & Thienemann, 1942) **	*			(+)	
<i>Krenosmittia camptophleps</i> (Edwards, 1929)	P		(+)	(+)	(+)
<i>Limnophyes difficilis</i> Brundin, 1947	*			+	+
<i>L. gelasinus</i> Saether, 1990 **	*			(+)	(+)
<i>L. habilis</i> (Walker, 1856)	*	(+)		(+)	(+)
<i>L. madeirae</i> Sæther, 1985	*	(+)		(+)	
<i>L. minimus</i> (Meigen, 1818)	P	+		(+)	
<i>L. natalensis</i> (Kieffer, 1914)	*	+	+		
<i>L. ninae</i> Sæther, 1975	P			(+)	(+)
<i>L. pentaplastus</i> (Kieffer, 1921)	*			(+)	(+)
<i>L. pumilio</i> (Holmgren, 1869)	*			(+)	(+)
<i>L. sp. 1</i> (near <i>algerinus</i> Marcuzzi, 1950) **	***			(+)	(+)
<i>L. sp. 2</i> **	***			(+)	(+)
<i>L. sp. 3</i> **	***			(+)	(+)
<i>Metriocnemus (Metriocnemus) albolineatus</i> Meigen, 1818	*			(+)	(+)
<i>M. (M.) eurynotus</i> (Holmgren, 1883) **	P			(+)	(+)
<i>M. (M.) fuscipes</i> (Meigen, 1818) **	P			(+)	(+)
<i>M. (M.) hirticollis</i> (Staeger, 1839)	*			(+)	(+)
<i>M. (M.) ursinus</i> Holmgren, 1869 **	*			(+)	(+)
<i>Nanocladius balticus</i> (Palmén, 1959)	P		+	+	
<i>N. dichromus</i> (Kieffer 1906)	*	+	+		
<i>N. parvulus</i> (Kieffer 1909)	*		++	+	
<i>N. rectinervis</i> (Kieffer, 1911)	P		++	+	
<i>Orthocladius (Eudactylocladius) fuscimanus</i> (Kieffer, 1908)	P			++	+
<i>O. (Euorthocladius) ashei</i> Sopenis, 1990	P		(+)	(+)	(+)
<i>O. (Eo.) rivulorum</i> Kieffer, 1909	P			(+)	(+)
<i>O. (Eo.) thienemanni</i> Kieffer, 1906	P		(+)	(+)	
<i>O. (Mesorthocladius) frigidus</i> (Zetterstedt, 1838)	P			(+)	(+)
<i>O. (Orthocladius) oblidens</i> (Walker, 1856)	P	+	++	+	
<i>O. (O.) pedestris</i> Kieffer, 1909	P		(+)	(+)	
<i>O. (O.) rubicundus</i> (Meigen, 1818)	P	+	++	+	
<i>O. (O.) vaillanti</i> Langton & Cranston, 1991**	*		(+)	(+)	
<i>O. (O.) sp. 1</i> **	***			+	
<i>Paracricotopus niger</i> (Kieffer, 1913)	P		++	++	
<i>Parametriocnemus stylatus</i> (Spärck, 1923)	P		++	++	+
<i>P. valescurensis</i> Moubayed & Langton, 1999	P			(+)	
<i>Paraphaenocladius exagitans</i> ssp. 1**	***			(+)	
<i>P. impensus impensus</i> (Walker, 1856)	*			(+)	+
<i>P. irritus</i> Walker, 1856	*		(+)	(+)	
<i>P. pseudirritus</i> Strenzke, 1950 *	*			(+)	+
<i>Paratrissocladius excerptus excerptus</i> (Walker, 1856)	P			(+)	(+)
<i>Parorthocladius nudipennis</i> (Kieffer in Kieffer & Thienemann, 1908)	P			(+)	(+)
<i>Psectrocladius (Allopsectrocladius) obvius</i> (Walker, 1856)	P	+	+		
<i>P. (A.) platypus</i> (Edwards, 1929)	*			+	
<i>P. (Psectrocladius) limbatellus</i> (Holmgren, 1869)	P		+	+	
<i>P. (P.) octomaculatus</i> Wülker, 1956	P			+	
<i>P. (P.) sordidellus</i> (Zetterstedt, 1838)	P		+	+	
<i>Pseudosmittia albipennis</i> (Goetghebuer, 1921)	*			(+)	(+)
<i>P. baueri</i> Strenzke, 1960	*			(+)	(+)
<i>P. danconai</i> (Marcuzzi, 1947)	*			(+)	(+)

List of species	Record	Zone 1	Zone 2	Zone 3	Zone 4
<i>P. holsata</i> Thienemann & Stenzke, 1940	*			(+)	(+)
<i>P. obtusa</i> Strenzke, 1960	*			(+)	(+)
<i>P. trilobata</i> Edwards, 1929	*			++	+
<i>P. sp. 1</i> **	***			(+)	(+)
<i>Rheocricotopus (Psilocricotopus) atripes</i> (Kieffer, 1913)	P	+	++		
<i>R. (P.) chalybeatus chalybeatus</i> (Edwards, 1929)	P		+	+	
<i>R. (P.) gallicus</i> Lehmann, 1969	*			(+)	(+)
<i>R. (P.) glabricollis</i> (Meigen, 1830)	P		+	+	
<i>R. (P.) meridionalis</i> Moubayed-Breil, 2016	*			(+)	(+)
<i>R. (P.) cf. tirolus</i> Lehmann, 1969	P			(+)	(+)
<i>R. (P.) sp. 1</i> **	***			(+)	(+)
<i>R. (P.) sp. 2</i> **	***			(+)	(+)
<i>R. (Rheocricotopus) effusus</i> (Walker, 1856)	P			(+)	(+)
<i>R. (R.) fuscipes</i> (Kieffer, 1909)	P		++	+	
<i>Synorthocladius semivirens</i> (Kieffer, 1909)	P	+	+	+	
<i>Smittia alpicola</i> Goetghebuer, 1941	*			(+)	(+)
<i>S. aterrima</i> Meigen, 1818	*			(+)	(+)
<i>S. contingens</i> Walker, 1856	*			(+)	(+)
<i>S. foliacea</i> (Kieffer, 1921)	*			(+)	(+)
<i>S. pratorum</i> Goetghebuer, 1927	*	+	+	+	
<i>S. sp. 1</i> **	***			(+)	(+)
<i>Thienemannia cf. fulvofasciata</i> (Kieffer, 1921) **	*			(+)	(+)
<i>T. gracilis</i> Kieffer, 1909 **	*			(+)	(+)
<i>Thienemanniella clavicornis</i> (Kieffer, 1911)	*		(+)	(+)	
<i>T. majuscula</i> (Edwards, 1924)	P		(+)	(+)	+
<i>T. vittata</i> (Edwards, 1924)	P		(+)	(+)	
<i>Tvetenia calvescens</i> (Edwards, 1929)	P	+	++	+	
<i>T. verralli</i> (Edwards, 1929)	P	+	++	(+)	
Orthocladiinae: new genus, new species **	***				(+)
<b>Chironominae: 23 ; 82</b>					
<b>Chironomini: 15 ; 40</b>					
<i>Chironomus (Baetendipes) noctivagus</i> (Kieffer, 1911)	P	+			
<i>Chironomus (Chironomus) annularius</i> Meigen, 1818	P	+	++	+	
<i>C. (C.) aprilius</i> Meigen, 1818	P	+			
<i>C. (C.) bernensis</i> Klötzli, 1973	P		+	+	
<i>C. (C.) calipterus</i> Kieffer, 1908	P	(+)	(+)		
<i>C. (C.) luridus</i> Strenzke, 1959	P	+	+		
<i>C. (C.) piger</i> (Strenzke, 1956)	P	+	+		
<i>C. (C.) plumosus</i> (Linnaeus, 1758)	P	+	+		
<i>C. (C.) riparius</i> Meigen, 1804	P	+	+		
<i>C. (C.) salinarius</i> Kieffer, 1915	P	+	+		
<i>Cladopelma virescens</i> (Meigen, 1818)	*	+	+		
<i>Cryptochironomus rostratus</i> Kieffer, 1921	P	+	+		
<i>C. suplicans</i> (Meigen, 1830)	*	+	+		
<i>Demicryptochironomus (Irmakia) neglectus</i> Reiss, 1988 **	*			(+)	
<i>Dicotendipes fusconotatus</i> (Kieffer, 1922)	P	+	+		
<i>D. nervosus</i> (Staeger, 1839)	P		+	+	
<i>D. notatus</i> (Meigen, 1818)	*	(+)	(+)	(+)	
<i>D. pallidicornis</i> (Goetghebuer, 1934)	P	(+)	(+)		
<i>Harnischia curtilamellata</i> (Malloch, 1915)	P	(+)	(+)	(+)	
<i>H. fuscimanus</i> Kieffer, 1921	P	(+)	(+)		
<i>Kiefferulus (Kiefferulus) tendipediformis</i> (Goetghebuer, 1921)	P	+	(+)	(+)	
<i>Microtendipes pedellus</i> (De Geer, 1776)	P		(+)	(+)	

List of species	Record	Zone 1	Zone 2	Zone 3	Zone 4
<i>Nubensia nubens</i> (Edwards, 1929)	P	(+)	(+)		
<i>Paracladopelma camptolabis</i> (Kieffer, 1913)	P	(+)	(+)		
<i>P. laminatum</i> (Kieffer, 1921) **	P		(+)	(+)	
<i>P. mikianum</i> (Goetghebuer, 1937) **	P		(+)	(+)	
<i>Paratendipes albimanus</i> (Meigen, 1818)	P		(+)	(+)	
<i>P. nudisquama</i> (Edwards, 1929)	*		(+)	(+)	
<i>P. sp. 1</i> (cf. <i>striatus</i> Kieffer, 1925) **	***		(+)	(+)	
<i>Phaenopsectra flavipes</i> (Meigen, 1818)	P	(+)	(+)		
<i>Polypedilum</i> ( <i>Pentapedilum</i> ) <i>sordens</i> (van der Wulp, 1875)	P	(+)	++	+	
<i>P. (Polypedilum) albicorne</i> (Meigen, 1838)	P		(+)	(+)	
<i>P. (P.) laetum</i> (Meigen, 1818)	P	(+)	(+)		
<i>P. (P.) nubeculosum</i> (Meigen, 1804)	P	(+)	(+)		
<i>P. (P.) nubifer</i> (Skuse, 1889)	P		+		
<i>P. (P.) pedestre</i> Meigen, 1830	P		(+)	(+)	
<i>P. (Uresipedilum) convictum</i> (Walker, 1856)	P	(+)	(+)		
<i>Stenochironomus gibbus</i> Fabricius, 1794	*	(+)	(+)		
<i>Stictochironomus maculipennis</i> (Meigen, 1818)	P	(+)	(+)		
<i>S. rosenschoeldi</i> Zetterstedt, 1838 **	*	(+)	(+)		
<b>Tanytarsini: 8 ; 42</b>					
<i>Cladotanytarsus atridorsum</i> Kieffer, 1924	P	(+)	(+)		
<i>C. mancus</i> (Walker, 1856)	P	(+)	(+)		
<i>C. vanderwulpi</i> (Edwards, 1929)	P	(+)	(+)	(+)	
<i>Lithotanytarsus dadesi</i> Reiss, 1991 **	P				(+)
<i>Micropsectra andalusiaca</i> Marcuzzi, 1950 **	*		(+)	(+)	
<i>M. apposita</i> (Walker, 1856)	P	(+)	+	(+)	
<i>M. atrofasciata</i> (Kieffer, 1911)	P				
<i>M. junci</i> (Meigen, 1818)	P			(+)	(+)
<i>M. lindrothi</i> Goetghebuer, 1931	P	++	++	(+)	
<i>M. notescens</i> (Walker, 1856)	P			(+)	(+)
<i>M. pallidula</i> (Meigen, 1830)	*		++	(+)	
<i>M. schrankelae</i> Stur & Ekrem, 2006	*		++	(+)	
<i>M. zernyi</i> Marcuzzi, 1950 **	*		(+)	(+)	
<i>M. sp. 1</i> ( <i>atrofasciata</i> -group)	***		++		
<i>Paratanytarsus dissimilis</i> (Johannsen, 1905)	P	+	+		
<i>P. inopertus</i> (Walker, 1856)	P	(+)	(+)		
<i>Rheotanytarsus curtistylus</i> (Goetghebuer, 1921)	P		(+)	(+)	
<i>R. distinctissimus</i> (Brundin, 1947)	P			(+)	
<i>R. muscicola</i> Thienemann, 1929	P		(+)	(+)	
<i>R. nigricauda</i> Fittkau, 1960	*				
<i>R. pentapoda</i> (Kieffer, 1909)	P		(+)	(+)	
<i>R. procerus</i> Reiss, 1991 **	P			(+)	(+)
<i>R. reissi</i> Lehmann, 1970 **	P			(+)	
<i>R. rhenanus</i> Klink, 1983	*		(+)	(+)	
<i>R. ringei</i> Lehmann, 1970	P		(+)	(+)	
<i>R. sp. 1</i> **	***			(+)	(+)
<i>Stempellina bausei</i> (Kieffer, 1911)	P		(+)	(+)	(+)
<i>Tanytarsus brundini</i> Lindeberg, 1963	P	(+)	(+)	(+)	
<i>T. chinyensis</i> Goetghebuer, 1934	P	(+)	(+)		
<i>T. ejuncidus</i> (Walker, 1856)	*	+	++		
<i>T. eminulus</i> (Walker, 1856)	P		(+)	+	
<i>T. formosanus</i> Kieffer, 1912	P	++			
<i>T. heusdensis</i> Goetghebuer, 1923	P		(+)	+	
<i>T. medius</i> Reiss & Fittkau, 1971	P	(+)	(+)		

List of species	Record	Zone 1	Zone 2	Zone 3	Zone 4
<i>T. mendax</i> Kieffer, 1925	*	(+)	(+)		
<i>T. palettaris</i> Verneaux, 1969	P		(+)	(+)	
<i>T. signatus</i> (van der Wulp, 1859)	P	(+)	(+)		
<i>T. volgensis</i> Miseiko, 1967	P	(+)	(+)		
<i>Virgatanytarsus albisutus</i> (Santos Abreu, 1918)	P		(+)	(+)	
<i>V. arduennensis</i> (Goetghebuer, 1922)	P		++	++	
<i>V. sp. 1</i> **	***			(+)	(+)
Tanytarsini: new genus, new species **	***				(+)
<b>Total species = 256</b>	-	<b>80</b>	<b>152</b>	<b>188</b>	<b>88</b>
%	-	31	59	73	34

P, previous record; ?, queried record; \*new record for Morocco [72 (28%): 2 Tanypodinae, 1 Diamesinae, 54 (21%) Orthoclaadiinae, 15 (6%) Chironominae]; \*\*threatened species [59 (23%): 6 Tanypodinae, 5 Diamesinae, 35 Orthoclaadiinae, 13 Chironominae]; \*\*\*undescribed species [21 (8%): 0 Tanypodinae, 0 Diamesinae, 16 Orthoclaadiinae, 5 Chironominae]. Abundance of species: (+), rare (< 3 ind.); +, frequent; ++, abundant; +++, very abundant.