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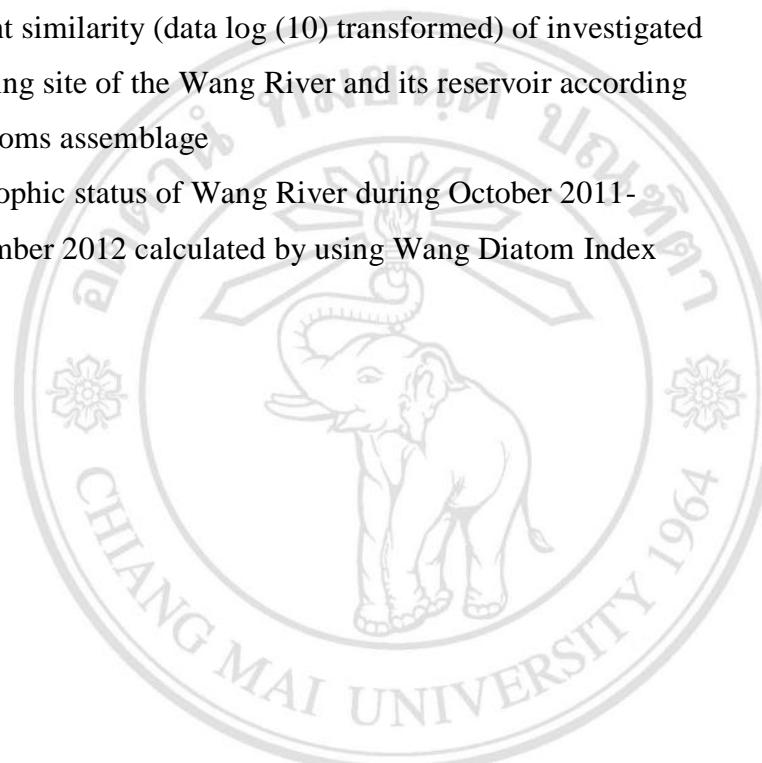
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## ABBREVIATIONS AND SYMBOLS

### Abbreviation of diatoms species checklist

<b>Species</b>	<b>Code</b>
<i>Auracoseira granulata</i> (Ehrenberg) Simonsen	Augra
<i>Cyclotella meneghiniana</i> Kützing	Cymen
<i>Cyclotella shanxiensis</i> Xie & Qi	Cysha
<i>Discostella stelligeroides</i> (Hustedt) Houk & Klee	Diste
<i>Achnanthes inflata</i> (Kützing) Grunow	Acinf
<i>Achnanthes oblongella</i> Østrup	Acobl
<i>Achnanthes pusilla</i> Grunow in Cleve & Grunow	Acpus
<i>Achnanthidium exiguum</i> (Grunow) D.B.Czarnecki	Acexm
<i>Achnanthidium exile</i> (Kützing) Heiberg	Acexi
<i>Achnanthidium jackii</i> Rabenhorst	Acjak
<i>Achnanthidium latecephalum</i> H.Kobayasi	Aclat
<i>Achnanthidium minutissimum</i> (Kützing) Czarnecki	Acmim
<i>Achnanthidium straubianum</i> Lange- Bertalot	Acsta
<i>Achnanthidium subhudsonis</i> (Hustedt) H.Kobayasi	Acsub
<i>Achnanthidium</i> sp.1	Acsp1
<i>Achnanthidium</i> sp.2	Acsp2
<i>Adlafia bryophila</i> (J.B.Petersen) Gerd Moser, Lange-Bertalot & D.Metzeltin	Adbry
<i>Amphora liriope</i> Nagumo	Amlir
<i>Aneumastus</i> sp.1	Ansp1
<i>Bacillaria paxillifera</i> (O.F.Müller) Hendey	Bapax
<i>Branchysira neoxelis</i> Lange-Bertalot	Brneo
<i>Branchysira microclava</i> H. Lange-Bertalot & G. Moser	Bamic
<i>Caloneis bacillum</i> (Grunow) Cleve	Cabac
<i>Caloneis silicula</i> f. <i>alpina</i> Cleve	Caalp
<i>Caloneis silicula</i> f. <i>peisonis</i> Hustedt	Capei
<i>Caloneis ventricosa</i> (Ehrenberg) F.Meister	Caven
<i>Caloneis</i> cf. <i>tenuis</i> (W.Gregory) Krammer in Krammer & Lange-Bertalot	Caten
<i>Caloneis</i> sp.1	Casp1
<i>Caloneis</i> sp.2	Casp2
<i>Cocconeis placentula</i> Ehrenberg	Copla
<i>Craticula riparia</i> var. <i>mollenhaueri</i> Lange-Bertalot	Crmoi
<i>Craticula molestiformis</i> (Hustedt) Mayama	Crmos

## Abbreviation of diatoms species checklist

Species	Code
<i>Craticula vixnegligenda</i> Lange-Bertalot	Crvix
<i>Craticula ambigua</i> (Ehrenberg) D.G. Mann	Cramb
<i>Cymbella affinis</i> Kützing	Cyaff
<i>Cymbella cf. bifurcumstigma</i> nov spec.	Cybif
<i>Cymbella parva</i> (W.Smith) Kirchner	Cypar
<i>Cymbella subleptoceros</i> Krammer	Cysub
<i>Cymbella sumatraensis</i> Hustedt	Cysum
<i>Cymbella tumida</i> (Brébisson) Van Heurck	Cytum
<i>Cymbella turgidula</i> Grunow	Cytur
<i>Cymbella geddiana</i> Krammer & Lange- Bertalot in Krammer	Cyged
<i>Cymbella</i> sp.1	Cysp1
<i>Cymbella</i> sp.2	Cysp2
<i>Diadesmis confervacea</i> Kützing	Dicon
<i>Delicata</i> cf. <i>sparsistriata</i> Krammer	Despa
<i>Delicata deliculata</i> (Kützing) Krammer	Dedel
<i>Diploneis oblongella</i> (Brebisson) Cleve	Diobl
<i>Diploneis oculata</i> (Nägeli ex Kützing) Cleve-Euler in Cleve-Euler & Osvald	Diocu
<i>Diploneis smithii</i> Cleve	Dipse
<i>Encyonema elginense</i>	Enelg
<i>Encyonema gaeumannii</i> (Meister) Krammer	Engae
<i>Encyonema malaysianum</i> Krammer	Enmal
<i>Encyonema mesianum</i> (Cholnoky) D.G.Mann in F.E.Round, R.M.Crawford & D.G.Mann	Enmes
<i>Encyonema minutum</i> (Hilse in Rabenhorst) D.G.Mann in Round, Crawford & Mann	Enmin
<i>Encyonema prostratum</i> (Berkeley) Kützing	Enpro
<i>Encyonema</i> sp.1	Ensp1
<i>Encyonopsis leei</i> Krammer	Enlee
<i>Encyonopsis microcephala</i> (Grunow) Krammer	Enmic
<i>Eolimna minima</i> (Grunow) Lange-Bertalot	Eomin
<i>Epithemia cistula</i> (Ehrenberg) Ralfs in Pritch	Epcis
<i>Eunotia bilunaris</i> (Ehrenberg) Schaarschmidt	Eubil
<i>Eunotia curvata</i> (Kützing) Lagerstedt	Eucur
<i>Eunotia minor</i> (Kützing) Grunow in van Heurck	Eumin
<i>Fallacia pygmaea</i> (Kützing) A.J. Stickle & D.G. Mann	Fapyg
<i>Fragilaria capucina</i> Desmazières	Frcap

## Abbreviation of diatoms species checklist

Species	Code
<i>Fragilaria rumpens</i> (Kützing) G.W.F.Carlson	Frrum
<i>Fragilaria vaucheriae</i> (Kützing) J.B.Petersen	Frvau
<i>Frustulia vulgaris</i> (Thwaites) De Toni	Frvul
<i>Halamphora veneta</i> (Kützing) Levkov	Haven
<i>Halamphora montana</i> (Krasske) Levkov	Hamon
<i>Halamphora bullatoides</i> (Hohn & Hellerman) Levkov	Habul
<i>Hippodonta pseudoacceptata</i> Kobayashi	Hipse
<i>Hippodonta avittata</i> Cholnoky	Hiavi
<i>Geissleria cummerowi</i> (L.Kalbe) Lange-Bertalot	Gecum
<i>Geissleria decussis</i> (Østrup) Lange Bertalot&Metzeltin	Gedec
<i>Geissleria punctiferera</i> (Hustedt) Metzeltin,Lange- Bertalot&Garcia-Rodriguez	Gepun
<i>Gomphonema affine</i> Kützing	Goaff
<i>Gomphonema auritum</i> A.Braun ex Kützing	Goaur
<i>Gomphonema bohemicum</i> Hustedt	Goboh
<i>Gomphonema gracile</i> Ehrenberg	Gogra
<i>Gomphonema javanicum</i> Hustedt	Gojav
<i>Gomphonema lanceolatum</i> Kützing	Golan
<i>Gomphonema micropus</i> Kützing	Gomic
<i>Gomphonema minutum</i> C.Agardh	Gomin
<i>Gomphonema obscurum</i> Krasske	Goobs
<i>Gomphonema truncatum</i> E.Reichardt	Gotru
<i>Gomphonema parvulum</i> (Kützing) Kützing	Gopar
<i>Gomphonema lagenula</i> Kützing	Golag
<i>Gomphonema pumilum</i> (Grunow) E.Reichardt & Lange-Bertalot	Gopum
<i>Gomphonema productum</i> (Grunow) Lange-Bertalot & Reichardt in Lange-Bertalot	Gopro
<i>Gomphonema pseudoaugur</i> Lange-Bertalot	Gopse
<i>Gomphonema turris</i> Ehrenberg	Gotur
<i>Gyrosigma obscurum</i> (W. Smith) J.W. Griffith & Henfrey	Gyobs
<i>Gyrosigma scalpoides</i> (Rabenhorst) Cleve	Gysca
<i>Gyrosigma spencerii</i> (Bailey ex Quekett) Griffith & Henfrey	Gyspe
<i>Kobayasiella</i> spp.1	Kosp1
<i>Luticola mitigata</i> (Hustedt) D.G.Mann	Lumit
<i>Luticola mutica</i> var. <i>lanceolata</i> (Frenguelli) M.Aboal	Lulan
<i>Luticola saxophila</i> (Bock ex Hustedt) D.G. Mann	Lusax

## Abbreviation of diatoms species checklist

Species	Code
<i>Luticola simplex</i> D.Metzeltin, Lange-Bertalot & Rodriquez	Lusim
<i>Luticola tropica</i> (Hustedt) J.R.Johansen	Luter
<i>Luticola</i> cf. <i>pseudokotschyti</i> (Lange-Bertalot) Lange-Bertalot	Lupse
<i>Luticola</i> sp.1	Lusp1
<i>Mayamaea agrestis</i> (Kützing) H. Lange-Bertalot	Myagr
<i>Naviculadicta nanogomphonema</i> Lange-Bertalot & U.Rumrich	Nanan
<i>Navicula amphiceropsis</i> Lange-Bertalot & Rumrich in Rumrich, Lange-Bertalot & Rumrich	Naamp
<i>Navicula antonii</i> Lange-Bertalot in Rumrich <i>et al.</i>	Naant
<i>Navicula capitatoradiata</i> Germain	Nacap
<i>Navicula cataracta-rheni</i> Lange-Bertalot	Narhe
<i>Navicula caterva</i> Hohn & Hellermann	Nacat
<i>Navicula cryptotenella</i> Lange-Bertalot	Nacry
<i>Navicula escambia</i> (Patrick) D.Metzeltin & Lange-Bertalot	Naesc
<i>Navicula cinctaeformis</i> Hustedt	Nacin
<i>Navicula erifuga</i> Lange-Bertalot in Krammer & Lange-Bertalot	Naeri
<i>Navicula heimansioides</i> Lange-Bertalot	Nahei
<i>Navicula hintzii</i> Lange-Bertalot	Nahin
<i>Navicula jacobii</i> Manguin	Najac
<i>Navicula radiosafallax</i> Lange-Bertalot	Narad
<i>Navicula germainii</i> J. H. Wallace	Nager
<i>Navicula pseudostauropterooides</i> Fritsch	Napse
<i>Navicula reichardtiana</i> Lange-Bertalot in Lange- Bertalot & Krammer	Narei
<i>Navicula rostellata</i> Kützing	Naros
<i>Navicula simulata</i> Manguin	Nasim
<i>Navicula suprinii</i> Gerd Moser	Nasup
<i>Navicula vandamii</i> Schoeman & Archibald	Navan
<i>Navicula</i> cf. <i>vandamii</i> var. <i>mertensiae</i> Lange- Bertalot in Witkowski, Lange-Bertalot & Metzeltin	Namer
<i>Navicula</i> cf. <i>vekhovii</i> Lange-Bertalot & Genkal	Navek
<i>Navicula viridulacalcis</i> Lange-Bertalot in Rumrich <i>et al</i>	Navir
<i>Navicula viridula</i> (Kützing) Ehrenberg	Nairi
<i>Navicula</i> cf. <i>bella</i> Hustedt	Nabel
<i>Navicula</i> cf. <i>aquaedurae</i> Lange-Bertalot	Naaqu
<i>Navicula</i> cf. <i>leistikowii</i> Lange-Bertalot	Nalei

## Abbreviation of diatoms species checklist

Species	Code
<i>Navicula</i> cf. <i>parabilis</i> M.H.Hohn & Hellerman	Napar
<i>Navicula</i> sp.1	Nasp1
<i>Navicula</i> sp.2	Nasp2
<i>Neidium affine</i> var. <i>longiceps</i> (W.Greg) R. Ross	Neaff
<i>Neidium affine</i> (Ehrenberg) Pfizer	Nesev
<i>Neidium binodeforme</i> Krammer	Nebin
<i>Neidium dubium</i> (Ehrbg) Cleve	Nedub
<i>Neidium gracile</i> Hustedt	Negra
<i>Nitzschia amphibia</i> Grunow	Niamp
<i>Nitzschia angustata</i> (W.Smith) Grunow	Niang
<i>Nitzschia clausii</i> Hantzsch	Nicla
<i>Nitzschia commutata</i> Grunow in Cleve & Grunow	Nicom
<i>Nitzschia compressa</i> var. <i>balatonis</i> (Grunow) Lange-Bertalot in Lange-Bertalot & Krammer	Nibal
<i>Nitzschia filiformis</i> var. <i>conferta</i> (Richt) Lange-Bertalot	Nifil
<i>Nitzschia desertorum</i> Hustedt	Nides
<i>Nitzschia dissipata</i> (Kützing) Grunow	Nidis
<i>Nitzschia frequens</i> Hustedt	Nifre
<i>Nitzschia frustulum</i> (Kützing) Grunow in Cleve & Grunow	Nifru
<i>Nitzschia gracilis</i> Hantzsch	Nigra
<i>Nitzschia hantzschiana</i> Rabenhorst	Nihan
<i>Nitzschia hoehnki</i> Hustedt	Nihoe
<i>Nitzschia intermedia</i> Hantzsch	Niint
<i>Nitzschia lanceolata</i> var. <i>minutula</i> Grunow	Nilan
<i>Nitzschia linearis</i> Agardh	Nilin
<i>Nitzschia lorenziana</i> Grunow in Cleve & Möller	Nilor
<i>Nitzschia palea</i> (Kützing) W. Smith	Nipal
<i>Nitzschia palea</i> var. <i>debilis</i> (Kützing) Grunow	Nideb
<i>Nitzschia parvula</i> W.Smith	Nipar
<i>Nitzschia persuadens</i> Cholnoky	Niper
<i>Nitzschia pumila</i> Hustedt	Nipum
<i>Nitzschia reversa</i> W.Smith	Nirev
<i>Nitzschia recta</i> Hantzsch ex Rabenhorst	Nirec
<i>Nitzschia salinicola</i> Aleem & Hustedt	Nisal
<i>Nitzschia scalpelliformis</i> Grunow in Cleve & Grunow	Nisca

## Abbreviation of diatoms species checklist

Species	Code
<i>Nitzschia sinuata</i> var. <i>tabellaria</i> Grunow	Nisin
<i>Nitzschia solgensis</i> Cleve-Euler	Nisol
<i>Nitzschia</i> cf. <i>ruttneri</i> Hustedt	Nirut
<i>Tryblionella salinarum</i> (Grunow) Pantocsek	Trsal
<i>Hantzschia amphioxys</i> (Ehrenberg) Grunow Haamp	Haamp
<i>Pinnularia acidojaponica</i> Idei & H. Kobayashi	Piaci
<i>Pinnularia biceps</i> Gregory	Pibic
<i>Pinnularia oominensis</i> H. Kobayashi	Pioom
<i>Pinnularia substomatophora</i> Hustedt	Pisub
<i>Pinnularia</i> cf. <i>interrupta</i> W.Smith	Piint
<i>Placoneis exigua</i> var. <i>capitata</i> Cox	Plcap
<i>Placoneis witkowskii</i> Metzeltin, Lange-Bertalot & García-Rodríguez	Plwit
<i>Placoneis</i> cf. <i>elegans</i> Metzeltin, Lange-Bertalot & García-Rodríguez	Plele
<i>Plagiotropis lepidoptera</i> var. <i>proboscidea</i> (Cleve) Reimer in Patrick and Reime	Plpro
<i>Planotidium frequentissimum</i> (Lange-Bertalot) Round & L.Bukhtiyarova	Plfre
<i>Planotidium rostratum</i> (Østrup) Lange- Bertalot	Plros
<i>Planotidium</i> sp.1	Plsp1
<i>Pleurosigma negoroi</i> T.Gotoh in J.H.Lee, J.Chung & T.	Plneg
<i>Reimeria uniseriata</i> S.E.Sala, J.M.Guerrero & M.E.Ferrario	Reuni
<i>Rhopalodia contorta</i> Hustedt	Rhcon
<i>Rhopalodia gibba</i> (Ehrenberg) O. Müller	Rhgib
<i>Rhopalodia musculus</i> (Kützing) Otto Müller	Rhmus
<i>Stauroneis anceps</i> Ehrenberg	Stanc
<i>Stauroneis kriegeri</i> Patrick	Stkri
<i>Stauroneis smithii</i> Grunow	Stsmi
<i>Staurosira</i> sp.1	Stsp1
<i>Seminavis strigosa</i> (Hustedt) Danielidis et D.G.Mann	Sestr
<i>Sellaphora capitata</i> D.G. Mann et S.M. Mcdonal	Secap
<i>Sellaphora obesa</i> D.G.Mann et M.M. Bager	Selse
<i>Sellaphora lanceolata</i> D.G.Mann & S.Droop	Sella
<i>Sellaphora papula</i> (Kützing) Mereschkovsky	Selpa
<i>Sellaphora seminulum</i> (Gronow) D.G. Mann	Seobe
<i>Sellaphora stroemii</i> Hustedt	Selst

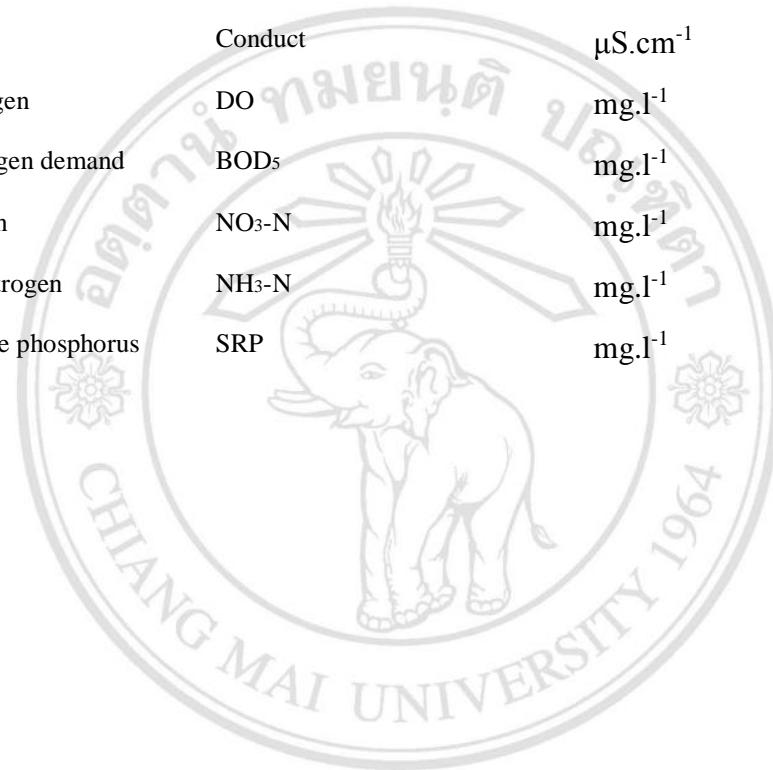
## Abbreviation of diatoms species checklist

Species	Code
<i>Sellaphora bacillum</i>	Selba
<i>Sellaphora blackfordensis</i> D.G.Mamet & S.Droop	Selbl
<i>Sellaphora subbacillum</i> (Hustedt) E. Falasco & L. Ectorin Falasco	Selsu
<i>Sellaphora</i> sp.1	Sesp1
<i>Sellaphora</i> sp.2	Sesp2
<i>Surirella angusta</i> Kützing	Suang
<i>Surirella fonticola</i> F.Hustedt	Sufon
<i>Surirella ostentata</i> B.J.Cholnoky	Suost
<i>Surirella linearis</i> W.Smith	Sulin
<i>Surirella tenera</i> W.Gregory	Suten
<i>Surirella tenera</i> var. <i>nervosa</i> A.Schmidt	Suner
<i>Surirella splendida</i> Kützing	Suspl
<i>Surirella angusta</i> Suang	Suang
<i>Surirella</i> sp.1	Susp1
<i>Surirella</i> sp.2	Susp2
<i>Surirella</i> sp.3	Susp3
<i>Surirella</i> sp.4	Susp4
<i>Ulnaria arcus</i> (Kützing) M.Aboal	Ularc
<i>Ulnaria lanceolata</i> (Kützing) P.Compère	Ullan
<i>Ulnaria ramesii</i> (Héribaud) T. Ohtsuka in Ohtsuka	Ulram
<i>Ulnaria ulna</i> (Nitzsch) P. Compère	Ulull

ຄົບສິດທິນຫາວິທຍາລ້ຽນເຊື່ອໂທນ  
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## **Environmental variable abbreviations**

<b>Environmental variable</b>	<b>Abbreviations</b>	<b>Unit</b>
Air temperature	Air temp.	°C
Water temperature	Water temp.	°C
Alkalinity	Alkali.	mg.l <sup>-1</sup> as CaCO <sub>3</sub>
Turbidity	Turb.	NTU
Conductivity	Conduct	µS.cm <sup>-1</sup>
Dissolved oxygen	DO	mg.l <sup>-1</sup>
Biological oxygen demand	BOD <sub>5</sub>	mg.l <sup>-1</sup>
Nitrate nitrogen	NO <sub>3</sub> -N	mg.l <sup>-1</sup>
Ammonium nitrogen	NH <sub>3</sub> -N	mg.l <sup>-1</sup>
Soluble reactive phosphorus	SRP	mg.l <sup>-1</sup>



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