

**Table S1.** List of OTUs annotated as macrozoobenthic taxa.

| Kingdom   | Phylum        | Class        | Order           | Family            | Subfamily   | Tribe | Genus                  | Species                           |
|-----------|---------------|--------------|-----------------|-------------------|-------------|-------|------------------------|-----------------------------------|
| Eukaryota | Porifera      | Demospongiae | Tetractinellida | Scleritodermidae  |             |       | <i>Scleritoderma</i>   |                                   |
| Eukaryota | Mollusca      | Gastropoda   |                 | Acroloxidae       |             |       | <i>Acroloxus</i>       | <i>Acroloxus egirdirensis</i>     |
| Eukaryota | Mollusca      | Gastropoda   |                 | Acroloxidae       |             |       | <i>Acroloxus</i>       | <i>Acroloxus lacustris</i>        |
| Eukaryota | Mollusca      | Gastropoda   |                 | Lymnaeidae        |             |       | <i>Ampullaceana</i>    | <i>Ampullaceana balthica</i>      |
| Eukaryota | Mollusca      | Gastropoda   |                 | Ancylidae         |             |       | <i>Ancylus</i>         | <i>Ancylus fluviatilis</i>        |
| Eukaryota | Chordata      | Ascidiacea   | Aplousobranchia | Polyclinidae      |             |       | <i>Aplidium</i>        | <i>Aplidium conicum</i>           |
| Eukaryota | Echinodermata | Echinoidea   | Arbacioida      | Arbaciidae        |             |       | <i>Arbacia</i>         | <i>Arbacia lixula</i>             |
| Eukaryota | Mollusca      | Gastropoda   |                 | Planorbidae       |             |       | <i>Armiger</i>         | <i>Armiger crista</i>             |
| Eukaryota | Chordata      | Ascidiacea   | Phlebobranchia  | Ascidiidae        |             |       | <i>Asciidiella</i>     | <i>Asciidiella aspersa</i>        |
| Eukaryota | Gastrotricha  |              | Chaetonotida    | Chaetonotidae     |             |       | <i>Aspidiophorus</i>   |                                   |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha | Assimineidae      |             |       | <i>Assiminea</i>       |                                   |
| Eukaryota | Chordata      | Ascidiacea   | Stolidobranchia | Styelidae         |             |       | <i>Botrylloides</i>    | <i>Botrylloides leachii</i>       |
| Eukaryota | Mollusca      | Gastropoda   |                 | Planorbidae       |             |       | <i>Bulinus</i>         |                                   |
| Eukaryota | Mollusca      | Gastropoda   |                 | Planorbidae       |             |       | <i>Bulinus</i>         | <i>Bulinus truncatus</i>          |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha | Amnicolidae       |             |       | <i>Bythinella</i>      |                                   |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha | Amnicolidae       |             |       | <i>Bythinella</i>      | <i>Bythinella austriaca</i>       |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha | Amnicolidae       |             |       | <i>Bythinella</i>      | <i>Bythinella charpentieri</i>    |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha | Amnicolidae       |             |       | <i>Bythinella</i>      | <i>Bythinella dunkeri</i>         |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha | Amnicolidae       |             |       | <i>Bythinella</i>      | <i>Bythinella molcsany</i>        |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha | Amnicolidae       |             |       | <i>Bythinella</i>      | <i>Bythinella schmidtii</i>       |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha | Amnicolidae       |             |       | <i>Bythinella</i>      | <i>Bythinella turca</i>           |
| Eukaryota | Nemertea      | Enopla       | Monostilifera   | Carcinonemertidae |             |       | <i>Carcinonemertes</i> |                                   |
| Eukaryota | Gastrotricha  |              | Chaetonotida    | Chaetonotidae     |             |       | <i>Chaetonotus</i>     |                                   |
| Eukaryota | Annelida      | Clitellata   | Enchytraeida    | Enchytraeidae     |             |       | <i>Chamaedrillus</i>   | <i>Chamaedrillus sphagnetorum</i> |
| Eukaryota | Annelida      | Clitellata   | Crassicitellata | Lumbricidae       | Lumbricinae |       | <i>Dendrobaena</i>     | <i>Dendrobaena octaedra</i>       |
| Eukaryota | Annelida      | Clitellata   | Hirudinida      | Erpobdellidae     |             |       | <i>Dina</i>            | <i>Dina latestriata</i>           |
| Eukaryota | Annelida      | Clitellata   | Hirudinida      | Erpobdellidae     |             |       | <i>Dina</i>            | <i>Dina lineata</i>               |
| Eukaryota | Chordata      | Ascidiacea   | Stolidobranchia | Styelidae         |             |       | <i>Distomus</i>        | <i>Distomus variolosus</i>        |
| Eukaryota | Mollusca      | Gastropoda   | Nudibranchia    | Dotidae           |             |       | <i>Doto</i>            | <i>Doto coronata</i>              |
| Eukaryota | Mollusca      | Gastropoda   | Nudibranchia    | Dotidae           |             |       | <i>Doto</i>            | <i>Doto koenneckeri</i>           |
| Eukaryota | Cnidaria      | Anthozoa     | Zoantharia      | Epizoanthidae     |             |       | <i>Epizoanthus</i>     |                                   |
| Eukaryota | Mollusca      | Bivalvia     | Venerida        | Sphaeriidae       |             |       | <i>Pisidium</i>        | <i>Euglesa casertana</i>          |

|           |               |              |                   |                 |                |           |                       |                                 |
|-----------|---------------|--------------|-------------------|-----------------|----------------|-----------|-----------------------|---------------------------------|
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha   | Cochliopidae    |                |           | <i>Semisalsa</i>      | <i>Eupaludestrina aponensis</i> |
| Eukaryota | Arthropoda    | Malacostraca | Amphipoda         | Eusiridae       |                |           | <i>Eusirus</i>        | <i>Eusirus</i>                  |
| Eukaryota | Mollusca      | Gastropoda   |                   | Lymnaeidae      |                |           | <i>Galba</i>          | <i>Galba truncatula</i>         |
| Eukaryota | Arthropoda    | Malacostraca | Amphipoda         | Gammaridae      |                |           | <i>Gammarus</i>       | <i>Gammarus fossarum</i>        |
| Eukaryota | Arthropoda    | Malacostraca | Amphipoda         | Gammaridae      |                |           | <i>Gammarus</i>       | <i>Gammarus pulex</i>           |
| Eukaryota | Mollusca      | Gastropoda   |                   | Planorbidae     |                |           | <i>Gyraulus</i>       |                                 |
| Eukaryota | Mollusca      | Gastropoda   |                   | Planorbidae     |                |           | <i>Gyraulus</i>       | <i>Gyraulus rossmaessleri</i>   |
| Eukaryota | Porifera      | Demospongiae | Suberitida        | Halichondriidae |                |           | <i>Halichondria</i>   |                                 |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha   | Cochliopidae    |                |           | <i>Heleobia</i>       |                                 |
| Eukaryota | Mollusca      | Gastropoda   |                   | Planorbidae     |                |           | <i>Hippeutis</i>      |                                 |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha   | Hydrobiidae     | Pyrgulinae     |           | <i>Ginaia</i>         |                                 |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha   | Hydrobiidae     |                |           | <i>Ohridopyrgula</i>  |                                 |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha   | Hydrobiidae     | Hydrobiinae    |           | <i>Mercuria</i>       |                                 |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha   | Hydrobiidae     | Belgrandiinae  | Islamiini | <i>Boetersiella</i>   |                                 |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha   | Hydrobiidae     | Belgrandiinae  | Islamiini | <i>Iberhoratia</i>    |                                 |
| Eukaryota | Gastrotricha  |              | Chaetonotida      | Chaetonotidae   |                |           | <i>Ichthydium</i>     |                                 |
| Eukaryota | Mollusca      | Gastropoda   | Architaenioglossa | Viviparidae     |                |           | <i>Idiopoma</i>       |                                 |
| Eukaryota | Mollusca      | Gastropoda   | Architaenioglossa | Ampullariidae   |                |           | <i>Lanistes</i>       |                                 |
| Eukaryota | Gastrotricha  |              | Chaetonotida      | Chaetonotidae   |                |           | <i>Lepidodermella</i> |                                 |
| Eukaryota | Mollusca      | Gastropoda   | Littorinimorpha   | Littorinidae    |                |           | <i>Littorina</i>      | <i>Littorina obtusata</i>       |
| Eukaryota | Annelida      | Clitellata   | Hirudinida        | Piscicolidae    |                |           | <i>Malmiana</i>       | <i>Malmiana brunnea</i>         |
| Eukaryota | Echinodermata | Asteroidea   | Forcipulatida     | Asteriidae      |                |           | <i>Marthasterias</i>  | <i>Marthasterias glacialis</i>  |
| Eukaryota | Mollusca      | Gastropoda   | Architaenioglossa | Viviparidae     |                |           | <i>Mekongia</i>       |                                 |
| Eukaryota | Arthropoda    | Malacostraca | Decapoda          | Penaeidae       |                |           | <i>Metapenaeus</i>    |                                 |
| Eukaryota | Annelida      | Polychaeta   | Spionida          | Spionidae       |                |           | <i>Microspio</i>      | <i>Microspio granulata</i>      |
| Eukaryota | Annelida      | Clitellata   | Haplotaxida       | Naididae        |                |           |                       |                                 |
| Eukaryota | Annelida      | Clitellata   | Haplotaxida       | Naididae        | Naidinae       |           | <i>Nais</i>           |                                 |
| Eukaryota | Mollusca      | Cephalopoda  | Octopoda          | Octopodidae     |                |           |                       |                                 |
| Eukaryota | Annelida      | Clitellata   | Haplotaxida       | Naididae        | Phallodrilinae |           | <i>Olavius</i>        |                                 |
| Eukaryota | Arthropoda    | Malacostraca | Amphipoda         | Talitridae      |                |           | <i>Orchestia</i>      | <i>Orchestia mediterranea</i>   |
| Eukaryota | Arthropoda    | Malacostraca | Decapoda          | Palaemonidae    |                |           | <i>Palaemon</i>       |                                 |
| Eukaryota | Cnidaria      | Anthozoa     | Zoantharia        | Parazoanthidae  |                |           |                       |                                 |
| Eukaryota | Cnidaria      | Anthozoa     | Zoantharia        | Parazoanthidae  |                |           | <i>Parazoanthus</i>   | <i>Parazoanthus axinellae</i>   |
| Eukaryota | Arthropoda    | Malacostraca | Amphipoda         | Hyalidae        |                |           | <i>Parhyale</i>       | <i>Parhyale aquilina</i>        |
| Eukaryota | Mollusca      | Gastropoda   |                   | Lymnaeidae      |                |           | <i>Peregriana</i>     | <i>Peregriana labiata</i>       |

|           |            |              |                   |                  |             |  |                      |                                 |
|-----------|------------|--------------|-------------------|------------------|-------------|--|----------------------|---------------------------------|
| Eukaryota | Chordata   | Ascidiacea   | Phlebobranchia    | Ascidiidae       |             |  | <i>Phallusia</i>     | <i>Phallusia ingeria</i>        |
| Eukaryota | Annelida   | Clitellata   | Haplotaxida       | Phreodrilidae    |             |  |                      |                                 |
| Eukaryota | Mollusca   | Gastropoda   |                   | Physidae         |             |  | <i>Physa</i>         | <i>Physa fontinalis</i>         |
| Eukaryota | Mollusca   | Gastropoda   | Neogastropoda     | Buccinidae       |             |  | <i>Pisania</i>       | <i>Pisania striata</i>          |
| Eukaryota | Mollusca   | Bivalvia     | Venerida          | Sphaeriidae      |             |  | <i>Pisidium</i>      |                                 |
| Eukaryota | Mollusca   | Gastropoda   |                   | Planorbidae      |             |  |                      |                                 |
| Eukaryota | Mollusca   | Gastropoda   | Littorinimorpha   | Hydrobiidae      | Hydrobiinae |  | <i>Pseudamnicola</i> |                                 |
| Eukaryota | Mollusca   | Gastropoda   | Littorinimorpha   | Hydrobiidae      | Hydrobiinae |  | <i>Pseudamnicola</i> | <i>Pseudamnicola lucensis</i>   |
| Eukaryota | Chordata   | Ascidiacea   | Aplousobranchia   | Pseudodistomidae |             |  | <i>Pseudodistoma</i> | <i>Pseudodistoma cyrnusense</i> |
| Eukaryota | Chordata   | Ascidiacea   | Aplousobranchia   | Pycnoclavellidae |             |  | <i>Pycnoclavella</i> |                                 |
| Eukaryota | Chordata   | Ascidiacea   | Aplousobranchia   | Pycnoclavellidae |             |  | <i>Pycnoclavella</i> | <i>Pycnoclavella communis</i>   |
| Eukaryota | Chordata   | Ascidiacea   | Aplousobranchia   | Pycnoclavellidae |             |  | <i>Pycnoclavella</i> | <i>Pycnoclavella nana</i>       |
| Eukaryota | Chordata   | Ascidiacea   | Stolidobranchia   | Pyuridae         |             |  | <i>Pyura</i>         | <i>Pyura squamulosa</i>         |
| Eukaryota | Cnidaria   | Anthozoa     | Alcyonacea        | Chrysogorgiidae  |             |  | <i>Radicipes</i>     | <i>Radicipes stonei</i>         |
| Eukaryota | Mollusca   | Gastropoda   |                   | Lymnaeidae       |             |  | <i>Radix</i>         |                                 |
| Eukaryota | Mollusca   | Gastropoda   |                   | Lymnaeidae       |             |  | <i>Radix</i>         | <i>Radix auricularia</i>        |
| Eukaryota | Arthropoda | Hexanauplia  | Sessilia          | Archaeobalanidae |             |  | <i>Semibalanus</i>   | <i>Semibalanus balanoides</i>   |
| Eukaryota | Mollusca   | Cephalopoda  | Sepiida           |                  |             |  |                      |                                 |
| Eukaryota | Mollusca   | Cephalopoda  | Sepiida           | Sepiidae         |             |  | <i>Sepiella</i>      |                                 |
| Eukaryota | Arthropoda | Malacostraca | Stomatopoda       | Squillidae       |             |  | <i>Squilla</i>       | <i>Squilla mantis</i>           |
| Eukaryota | Mollusca   | Gastropoda   |                   | Lymnaeidae       |             |  | <i>Stagnicola</i>    |                                 |
| Eukaryota | Porifera   | Demospongiae | Dictyoceratida    | Irciniidae       |             |  | <i>Ircinia</i>       |                                 |
| Eukaryota | Mollusca   | Gastropoda   | Neogastropoda     | Muricidae        |             |  | <i>Stramonita</i>    | <i>Stramonita haemastoma</i>    |
| Eukaryota | Chordata   | Ascidiacea   | Stolidobranchia   | Styelidae        |             |  | <i>Styela</i>        | <i>Styela canopus</i>           |
| Eukaryota | Chordata   | Ascidiacea   | Stolidobranchia   | Styelidae        |             |  | <i>Styela</i>        | <i>Styela plicata</i>           |
| Eukaryota | Annelida   | Clitellata   | Lumbriculida      | Lumbriculidae    |             |  | <i>Stylodrilus</i>   |                                 |
| Eukaryota | Annelida   | Clitellata   | Lumbriculida      | Lumbriculidae    |             |  | <i>Stylodrilus</i>   | <i>Stylodrilus heringianus</i>  |
| Eukaryota | Annelida   | Clitellata   | Lumbriculida      | Lumbriculidae    |             |  | <i>Stylodrilus</i>   | <i>Stylodrilus lemani</i>       |
| Eukaryota | Annelida   | Clitellata   | Lumbriculida      | Lumbriculidae    |             |  | <i>Stylodrilus</i>   | <i>Stylodrilus mariae</i>       |
| Eukaryota | Annelida   | Clitellata   | Lumbriculida      | Lumbriculidae    |             |  | <i>Stylodrilus</i>   | <i>Stylodrilus parvus</i>       |
| Eukaryota | Mollusca   | Gastropoda   | Architaenioglossa | Viviparidae      |             |  | <i>Taia</i>          |                                 |
| Eukaryota | Arthropoda | Branchiopoda | Anostraca         | Branchipodidae   |             |  | <i>Tanyastix</i>     | <i>Tanyastix stagnalis</i>      |
| Eukaryota | Mollusca   | Gastropoda   | Cycloneritida     | Neritidae        |             |  | <i>Theodoxus</i>     |                                 |
| Eukaryota | Mollusca   | Gastropoda   | Cycloneritida     | Neritidae        |             |  | <i>Theodoxus</i>     | <i>Theodoxus fluviatilis</i>    |
| Eukaryota | Mollusca   | Gastropoda   | Cycloneritida     | Neritidae        |             |  | <i>Theodoxus</i>     | <i>Theodoxus meridionalis</i>   |

|           |            |              |                 |               |            |  |                       |                                  |
|-----------|------------|--------------|-----------------|---------------|------------|--|-----------------------|----------------------------------|
| Eukaryota | Mollusca   | Gastropoda   | Cycloneritida   | Neritidae     |            |  | <i>Theodoxus</i>      | <i>Theodoxus prevostianus</i>    |
| Eukaryota | Annelida   | Clitellata   | Lumbriculida    | Lumbriculidae |            |  | <i>Trichodrilus</i>   | <i>Trichodrilus strandi</i>      |
| Eukaryota | Arthropoda | Malacostraca | Amphipoda       | Gammaridae    |            |  | <i>Trichogammarus</i> | <i>Trichogammarus trichiatus</i> |
| Eukaryota | Mollusca   | Gastropoda   | Littorinimorpha | Pomatiopsidae | Triculinae |  |                       |                                  |
| Eukaryota | Mollusca   | Gastropoda   |                 | Valvatidae    |            |  | <i>Valvata</i>        |                                  |
| Eukaryota | Mollusca   | Gastropoda   |                 | Valvatidae    |            |  | <i>Valvata</i>        | <i>Valvata tricarinata</i>       |
| Eukaryota | Mollusca   | Gastropoda   | Littorinimorpha | Hydrobiidae   |            |  | <i>Ventrosia</i>      | <i>Ventrosia ventrosa</i>        |