**Supplementary Material**

**Assessment of the invasion risks of phytoplankton as examined from growth in different media**

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Table S1. List of phytoplankton species in the ballast water of international commercial ships.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Phytoplankton / Ship number** | **1** | **2** | **3** | **4** | **5** | **6**  | **7**  | **8**  | **9**  | **10**  | **11**  | **12**  |
| **Marine species** |  |  |  |  |  |  |  |  |  |  |  |  |
| **BACILLARIOPHYCEAE** |  |  |  |  |  |  |  |  |  |  |  |  |
| *Actinocyclus octonarius* |  |  |  | **+** |  |  |  |  |  |  |  |  |
| *Actinoptychus senarius* |  |  |  |  |  |  | **+** |  |  |  |  |  |
| *Asterionella glacialis* |  | **+** |  |  |  |  |  |  |  |  |  |  |
| *Asteroplanus karianus* |  |  |  |  |  |  | **++** |  |  |  |  |  |
| *Bacteriastrum delicatulum* |  |  |  |  |  |  |  |  |  | **++** |  |  |
| *Cerataulina dentata* |  |  |  |  |  |  | **+++** |  |  |  |  |  |
| *Cerataulina pelagica* |  |  |  |  |  |  |  |  | **+** |  |  |  |
| *Chaetoceros affinis* |  |  |  |  |  |  |  |  |  | **+++** |  |  |
| *Chaetoceros borealis* |  |  |  |  |  |  |  |  |  | **+** |  |  |
| *Chaetoceros compressus* | **+** |  |  |  |  |  | **+** |  |  | **+++** |  |  |
| *Chaetoceros curvisetus* |  |  |  | **++** |  |  |  |  |  | **+** |  |  |
| *Chaetoceros danicus* | **+** | **++** |  |  |  |  |  |  |  |  |  | **+** |
| *Chaetoceros debilis* | **+** |  |  |  |  |  |  |  |  | **++** |  |  |
| *Chaetoceros decipiens* | **+** |  |  | **+** |  |  |  | **+** |  |  |  | **++** |
| *Chaetoceros diadema* |  |  |  |  |  |  | **+** |  |  |  |  |  |
| *Chaetoceros didymus* |  |  |  |  |  |  |  |  |  | **++** |  |  |
| *Chaetoceros eibenil* |  |  |  |  |  |  |  |  | **+** | **+** |  |  |
| *Chaetoceros lorenzianus* |  |  |  |  |  |  |  | **+** |  | **++** |  |  |
| *Chaetoceros pseudocurvisetus* |  | **++** |  |  |  |  | **++** |  |  | **++** |  |  |
| *Chaetoceros* spp. | **+** | **+++** |  |  |  |  | **+** |  |  |  |  |  |
| *Corethron criophilum* |  |  |  |  |  |  | **+** |  |  |  |  |  |
| *Coscinodiscus argus* |  |  |  |  |  |  |  |  | **+** |  |  |  |
| *Coscinodiscus pweforatas* |  |  |  |  |  |  | **+** | **+** |  |  |  |  |
| *Cylindrotheca closterium* | **+** |  |  |  |  |  |  |  |  | **+** | **+** |  |
| *Detonula pumila* |  | **++** |  |  |  |  | **+** |  |  | **+** |  |  |
| *Ditylum brightwellii* |  |  |  |  |  |  | **+** |  |  | **+** |  |  |
| *Eucampia zodiacus* |  | **++** |  |  |  |  |  |  |  | **++**  |  |  |
| *Guinardia delicatula* |  |  |  |  |  |  |  |  |  | **+** |  |  |
| *Lauderia annulata* |  | **+** |  | **+** |  |  | **++** |  |  | **+** |  |  |
| *Leptocylindrus danicus* |  |  |  | **+** |  | **+** | **++** | **+** |  | **+** |  |  |
| *Nitzschia* spp. |  | **+** |  |  |  |  |  |  |  |  |  |  |
| *Odentella aurita* |  |  |  |  |  |  | **++** |  |  |  |  |  |
| *Odontella sinensis* |  |  |  | **+** |  |  |  |  |  |  |  |  |
| *Paralia sulcata* |  |  | **+** |  |  | **+** |  |  |  |  |  |  |
| *Pleurosigma normanii* |  |  |  |  |  |  |  | **+** |  |  |  |  |
| *Pseudo-nitzschia delicatissima* |  |  | **+** |  |  |  |  |  |  |  |  |  |
| *Pseudonitzschia multiseries* |  |  |  |  |  |  |  |  |  | **+** |  |  |
| *Pseudonitzschia pseudodelicatissima* |  |  |  |  |  |  |  |  |  | **++** |  |  |
| *Pseudo-nitzschia pungens* |  | **+** | **+** | **+** |  |  |  |  |  |  |  |  |
| *Rhizosolenia imbricata var. schrubsoki* |  |  |  | **+** |  |  |  |  |  |  |  |  |
| *Rhizosolenia setigera* |  |  |  | **+** |  |  | **+** |  |  |  |  |  |
| *Rhizosolenia* spp. |  |  |  | **+** |  |  |  |  |  |  |  |  |
| *Skeletonema costatum* |  | **+++** | **++** |  |  |  | **++** |  | **++** | **++** | **++** |  |
| *Stephanopyxis palmeriana* |  |  |  |  |  |  | **++** |  |  | **+** |  |  |
| *Streptotheca tamesis* |  |  |  | **+** |  |  |  |  |  |  |  |  |
| *Striatella unipunctata* |  |  |  |  |  |  | **+** |  |  |  |  |  |
| *Synedra* sp. |  |  |  |  |  |  | **+** |  |  |  |  |  |
| *Thalasiosira baltica* |  |  |  |  |  |  |  |  | **+** |  |  |  |
| *Thalasiosira bulbosa* |  |  |  |  |  |  |  |  |  | **+** |  |  |
| *Thalasiosira nordenskioeldii* |  |  |  |  |  |  | **+** |  |  |  |  |  |
| *Thalasiosira pacifica* |  |  |  |  |  |  | **++** |  |  | **+** |  |  |
| *Thalasiosira rotula* |  |  |  |  |  |  | **+** |  |  |  |  |  |
| *Thalassiosira* spp. | **+** |  |  |  |  |  |  |  |  | **+** |  |  |
| *Thalassionema nitzschioides* |  |  |  |  |  |  |  | **+** |  | **+** | **+** |  |
| Unidentified Centric diatoms |  | **+** | **+** | **+** |  |  |  |  |  |  |  |  |
| Unidentified Penate diatoms |  |  | **+** | **+** |  |  |  |  |  |  |  |  |
| **DINOPHYCEAE** |  |  |  |  |  |  |  |  |  |  |  |  |
| *Ceratium fusus* |  |  |  | **+** |  |  |  |  |  | **+** |  |  |
| *Ceratium furca* |  |  |  |  |  |  |  |  |  | **+** |  |  |
| *Ceratium lineatum* |  |  |  |  |  |  |  |  | **+** |  |  |  |
| *Dinophysis caudata* |  |  |  | **+** |  |  |  |  |  |  |  |  |
| *Gonyaulax polygramma* |  |  |  |  |  |  |  |  | **+** |  |  |  |
| *Protoperidinium conicum* |  |  |  |  |  |  |  |  |  | **+** |  |  |
| *Protoperidinium pellucidum* |  |  |  | **+** |  |  |  | **+** |  |  |  |  |
| *Protoperidinium quarnerense* |  |  |  |  |  |  |  |  | **+** |  |  |  |
| *Protoperidinium* sp. |  |  |  |  |  |  |  |  | **+** |  |  |  |
| **CRYPTOPHYCEAE** |  |  |  |  |  |  |  |  |  |  |  |  |
| *Cryptomonas* sp. |  |  |  |  |  |  |  |  |  |  | **+** |  |
| **CRYSOPHYCEAE** |  |  |  |  |  |  |  |  |  |  |  |  |
| *Dictycha fibula* |  |  |  |  |  |  |  |  | **+** | **+** |  |  |
| *Dictyocha speculum* |  |  |  | **+** | **+** |  | **+** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Fresh water species** |  |  |  |  |  |  |  |  |  |  |  |  |
| **BACILLARIOPHYCEAE** |  |  |  |  |  |  |  |  |  |  |  |  |
| *Asterionella formosa* |  |  |  |  |  |  |  |  |  |  |  | **+++** |
| *Aulacoseira granulata* |  |  | **++** |  |  |  |  |  |  |  |  |  |
| *Synedra* spp. |  |  |  |  |  |  |  |  |  |  |  | **++** |
| **CYNANOBACTERIUM** |  |  |  |  |  |  |  |  |  |  |  |  |
| *Phormidium tenue* |  |  |  |  |  | **+** |  |  |  |  |  | **++** |
| **CHLOROPHYCEAE** |  |  |  |  |  |  |  |  |  |  |  |  |
| *Ankistrodesmus falcatus* |  |  |  |  |  |  |  |  |  |  |  | **+** |
| *Schroderia* sp. |  |  |  |  |  |  |  |  |  |  |  | **+** |
| *Scenedesmus* spp. |  |  |  |  |  |  |  |  |  |  |  | **+** |
| **Total (cells/L)** | **140**  | **7,881**  | **912**  | **726**  | **9**  | **100**  | **8,177**  | **193**  | **637**  | **15,718** | **408** | **8,572** |

Notes: +: < 200 cells L-1, ++: < 2,000 >200 cells L-1, +++: >2,000 cells L-1