*Supplement to*

**Only macroalgal detritus remains viable for months**

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**Figure 1**. Effect of confounding variables associated with incubation on light-saturated net seagrass photosynthesis (*P*max) per gram of blotted mass. Distributions are kernel density estimates of priors and posteriors for slopes of the multiple linear regression. *P*max, initial oxygen (O2) and temperature (T) are measured with error. Ellipses and violins are bi- and univariate posterior probability distributions for observations. Lines and intervals are means and the central 50, 80 and 90% of posterior probability for the mean prediction of *P*max.

**Table S1**. Species included in the meta-analysis. Phyla are given in bold and orders are underlined. Seaweeds are comprised of Chlorophyta and Heterokontophyta. Seagrasses are marked with an asterisk. All remaining Alismatales are freshwater plants and the rest of Streptophyta is terrestrial. The longest experimental durations and largest numbers of studies and observations in each non-taxonomic group are highlighted in bold.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Species** | **Days** | **Studies** | **Observations** |
| **Chlorophyta** |  |  |  |  |
| Ulvales |  |  |  |  |
| Ulvaceae | *Ulva clathrata* | 30 | 1 | 6 |
|  | *Ulva intestinalis* | 30 | 1 | 6 |
|  | *Ulva reticulata* | 30 | 1 | 6 |
| **Heterokontophyta** |  |  |  |  |
| Desmarestiales |  |  |  |  |
| Desmarestiaceae | *Desmarestia anceps* | **313** | 1 | 65 |
| Fucales |  |  |  |  |
| Durvillaeaceae | *Durvillaea antarctica* | 14 | 2 | 448 |
| Sargassaceae | *Sargassum fallax* | 14 | 1 | 84 |
|  | *Sargassum spinuligerum* | 14 | 1 | 159 |
| Seirococcaceae | *Scytothalia dorycarpa* | 14 | 1 | 48 |
| Laminariales |  |  |  |  |
| Laminariaceae | *Laminaria digitata* | 46 | 3 | 162 |
|  | *Laminaria hyperborea* | 168 | **6** | **533** |
|  | *Laminaria ochroleuca* | 56 | 4 | 416 |
|  | *Macrocystis pyrifera* | 55 | 3 | 363 |
|  | *Saccharina latissima* | 39 | 1 | 42 |
| Lessoniaceae | *Ecklonia radiata* | 119 | 2 | 117 |
| Tilopteridales |  |  |  |  |
| Phyllariaceae | *Saccorhiza polyschides* | 39 | 1 | 38 |
| **Streptophyta** |  |  |  |  |
| Alismatales |  |  |  |  |
| Cymodoceaceae | *Amphibolis antarctica*\* | 34 | **1** | 39 |
| Hydrocharitaceae | *Elodea densa* | 16 | 2 | 43 |
|  | *Halophila ovalis*\* | 34 | **1** | 42 |
|  | *Hydrilla verticillata* | 12 | **7** | **506** |
|  | *Thalassia testudinum*\* | 52 | **1** | 14 |
|  | *Vallisneria americana* | **104** | 1 | 5 |
|  | *Vallisneria spiralis* | 9 | 6 | 59 |
| Potamogetonaceae | *Potamogeton* sp. | **104** | 1 | 5 |
|  | *Stuckenia pectinata* | 9 | 5 | 55 |
| Zosteraceae | *Zostera marina*\* | **85** | **1** | 10 |
|  | *Zostera muelleri*\* | 16 | **1** | **58** |
| Apiales |  |  |  |  |
| Apiaceae | *Coriandrum sativum* | 9 | 1 | 24 |
|  | *Petroselinum crispum* | 7 | 1 | 7 |
| Asterales |  |  |  |  |
| Asteraceae | *Chrysanthemum × morifolium* | 12 | 1 | 30 |
|  | *Helianthus annuus* | 0.024 | 1 | 36 |
|  | *Helianthus tuberosus* | 0.026 | 1 | 36 |
|  | *Inula racemosa* | 0.025 | 1 | 36 |
|  | *Smallanthus connatus* | 0.026 | 1 | 36 |
| Brassicales |  |  |  |  |
| Brassicaceae | *Arabidopsis thaliana* | 6 | 2 | 60 |
|  | *Brassica napus* | 1.7 | 1 | 125 |
|  | *Brassica oleracea* | 10 | 1 | 22 |
|  | *Nasturtium officinale* | 5 | 2 | 39 |
|  | *Raphanus raphanistrum* | 6 | 1 | 20 |
|  | *Sinapis alba* | 6 | 1 | 20 |
| Tropaeolaceae | *Tropaeolum majus* | 8 | 2 | 27 |
| Caryophyllales |  |  |  |  |
| Amaranthaceae | *Amaranthus cruentus* | 0.026 | 1 | 36 |
|  | *Celosia argentea* | 0.024 | 1 | 36 |
|  | *Chenopodium berlandieri* | 0.27 | 1 | 26 |
|  | *Gomphrena serrata* | 0.024 | 1 | 36 |
|  | *Spinacia oleracea* | 10 | 3 | 85 |
| Polygonaceae | *Koenigia weyrichii* | 0.028 | 1 | 36 |
| Cucurbitales |  |  |  |  |
| Cucurbitaceae | *Cucumis sativus* | 13 | 2 | 13 |
|  | *Sicyos edulis* | 10 | 1 | 48 |
| Ericales |  |  |  |  |
| Theaceae | *Camellia sinensis* | 4 | 1 | 11 |
| Fabales |  |  |  |  |
| Fabaceae | *Cercis canadensis* | 0.0052 | 1 | 576 |
|  | *Lathyrus oleraceus* | 17 | 2 | 42 |
|  | *Phaseolus vulgaris* | 2.1 | 1 | 10 |
|  | *Trifolium subterraneum* | 7 | 2 | 25 |
|  | *Vigna unguiculata* | 4 | 1 | 170 |
| Fagales |  |  |  |  |
| Betulaceae | *Betula pendula* | 0.029 | 1 | 36 |
| Fagaceae | *Quercus alba* | 0.01 | 1 | 24 |
|  | *Quercus muehlenbergii* | 0.0052 | 1 | 192 |
|  | *Quercus robur* | 0.024 | 2 | 228 |
|  | *Quercus rubra* | 0.01 | 1 | 24 |
| Juglandaceae | *Juglans nigra* | 0.01 | 1 | 24 |
| Lamiales |  |  |  |  |
| Lamiaceae | *Salvia officinalis* | 11 | 1 | 8 |
| Laurales |  |  |  |  |
| Lauraceae | *Cinnamomum tamala* | 21 | 1 | 36 |
| Pinales |  |  |  |  |
| Pinaceae | *Larix sibirica* | 0.025 | 1 | 36 |
|  | *Pinus sibirica* | 0.023 | 1 | 33 |
|  | *Pinus sylvestris* | 0.022 | 1 | 33 |
| Poales |  |  |  |  |
| Cyperaceae | *Bolboschoenus fluviatilis* | **104** | 1 | 5 |
| Poaceae | *Avena sativa* | 8 | 8 | 161 |
|  | *Hordeum vulgare* | 11 | **13** | 466 |
|  | *Lolium multiflorum* | 5 | 1 | 44 |
|  | *Lolium pratense* | 7 | 5 | 112 |
|  | *Oryza sativa* | 27 | 11 | 327 |
|  | *Panicum miliaceum* | 5 | 2 | 69 |
|  | *Secale cereale* | 5 | 2 | 102 |
|  | *Triticum aestivum* | 10 | **13** | 646 |
|  | *Triticum turgidum* | 6 | 1 | 7 |
|  | *Triticum vulgare* | 6 | 1 | 48 |
|  | *Zea mays* | 6 | 3 | 58 |
| Typhaceae | *Typha angustifolia* | **104** | 1 | 5 |
| Polypodiales |  |  |  |  |
| Nephrolepidaceae | *Nephrolepis exaltata* | 10 | 1 | 24 |
| Rosales |  |  |  |  |
| Rosaceae | *Fragaria × ananassa* | 0.0056 | 1 | 663 |
|  | *Malus domestica* | 21 | 3 | 150 |
|  | *Malus hupehensis* | 15 | 1 | 18 |
| Sapindales |  |  |  |  |
| Rutaceae | *Citrus × aurantium* | 10 | 1 | 5 |
| Sapindaceae | *Acer saccharinum* | 0.25 | 1 | 36 |
|  | *Acer truncatum* | 0.0052 | 1 | 192 |
| Solanales |  |  |  |  |
| Convolvulaceae | *Ipomoea batatas* | 3 | 1 | 24 |
| Solanaceae | *Nicotiana rustica* | 10 | 1 | 180 |
|  | *Nicotiana tabacum* | 9 | 1 | 24 |
|  | *Solanum lycopersicum* | 5 | 1 | 192 |
|  | *Solanum melongena* | 16 | 1 | 24 |
|  | *Solanum tuberosum* | 0.026 | 1 | 36 |
| Vitales |  |  |  |  |
| Vitaceae | *Vitis vinifera* | 0.0052 | 1 | **1280** |

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