Supplementary Materials for

Climate impacts on global hot spots of marine biodiversity

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fig. S1. Significance and magnitudes of observed environmental changes. Long term trends in sea surface temperature (SST, 1983–2014), chlorophyll a concentration (CHL, 1979–2014) and the eastern and northern component of water speed (1980–2014). Colors represent the slope of derived least-squares linear regressions for each single pixel; white pixels indicate no data and gridded areas include those water masses in which observed trends were not significant (p-value > 0.05).
| Country, MFA | Country | Fishing captures (tonnes) | Cumulative % |
|-------------|---------|--------------------------|--------------|
| Pacific, Eastern Central MFA 77 | Mexico | 962,723.4 | 61.8 |
| | Panama | 155,137.3 | 71.8 |
| | USA | 136,875.9 | 80.6 |
| | Others | 302,971.3 | 100 |
| Pacific, Southwest MFA 81 | New Zealand | 418,192.8 | 73.7 |
| | Australia | 62,201 | 84.7 |
| | Others | 87,687.6 | 100 |
| Pacific, Southeast MFA 87 | Perú | 7,013,396.1 | 62.8 |
| | Chile | 3,344,109.1 | 92.7 |
| | Ecuador | 418,287.8 | 96.4 |
| | Others | 398,236.9 | 100 |
| Atlantic, Southwest MFA 41 | Argentina | 615,552.6 | 47.1 |
| | Brazil | 458,650.1 | 82.2 |
| | Uruguay | 86,813.6 | 88.9 |
| | Spain | 71,457.3 | 94.4 |
| | Others | 73,593 | 100 |
| Atlantic, Southeast MFA 47 | Sóth Africa | 658,576.5 | 45.1 |
| | Namibia | 491,099.5 | 78.7 |
| | Angola | 239,899.6 | 95.1 |
| | Others | 71,151.1 | 100 |
| Indian Ocean, Western MFA 51 | India | 1,688,476.4 | 44.3 |
| | Pakistan | 331,067.3 | 53 |
| | Iran | 329,393.9 | 61.6 |
| | Yemen | 174,535.9 | 66.2 |
| | Spain | 150,252.6 | 70.2 |
| | Oman | 146,678.7 | 74 |
| | Maldives | 141,404.5 | 77.7 |
| | Others | 849,019.8 | 100 |
| Indian Ocean, Eastern MFA 57 | Myanmar | 1,521,985.4 | 29.3 |
| | Indonesia | 1,090,430.3 | 50.2 |
| | India | 859,186.2 | 66.7 |
| | Thailand | 560,752.5 | 77.5 |
| | Malaysia | 499,108.9 | 87.1 |
| | Others | 670,804.8 | 100 |
| Pacific, Northwest MFA 61 | China | 8,532,664.1 | 58.5 |
| | Japan | 2,658,153.5 | 76.8 |
| | Russia | 1,855,706.7 | 89.5 |
| | Others | 1,527,230.7 | 100 |
| Pacific, Western Central MFA 71 | Indonesia | 2,951,187.8 | 30.5 |
| | Philippines | 1,983,863.3 | 50.9 |
| | Vietnam | 1,445,675.4 | 65.9 |
| | Thailand | 1,233,662.9 | 78.6 |
| | Malaysia | 632,644.1 | 85.1 |
| | Others | 1,440,805.1 | 100 |
**fig. S2. Major contributors to fishing pressure.** Top-ranked countries mostly contributing to fishing captures within Major Fishing Areas (MFA, according to FAO categorization) enclosing hotspots of marine biodiversity. The upper map shows the spatial distribution of the world’s MFA, the Exclusive Economic Zones (EEZ) and the hotspots of marine biodiversity. The lower Table provides detailed information on the average fishing captures (raw values in tonnes and the percentage of accumulated captures with respect total captures) for those countries (sorted as a function of fishing captures) that mainly contribute to current human fisheries (since 2000) within MFAs with high biodiversity.
**fig. S3. Identifying hot spots of marine biodiversity.** Marine areas encompassing 0.5 degree pixels with values of species richness over the upper 85, 90, 95 and 98 percentiles. The upper 95 percentile include marine hotspots from main ocean basins (Indian, Pacific and Atlantic Oceans) while minimizing their extend (surface), thus providing a more realistic picture of potential areas to be protected. Background represents a dimensionless index of biodiversity ranging from 0 (absence of species) to 1 (maximum species richness).

**table S1. Long-term, remote-sensing records of oceanographic features.** Oceanographic features used for tracing the impact of global change on the marine ecosystems, accessed on 2015/04/20.

| Oceanographic feature | Coverage | Resolution |
|-----------------------|----------|------------|
| Chlorophyll-a concentration | 90N - 90S, 0E - 360E | 0.08333 annual |
| Coastal Zone Color Scanner (CZCS) | 1979-1986 | annual |
| SeaWiFS | 90N - 90S, 0E - 360E | 0.08333 annual |
| MODIS | 90N - 90S, 0E - 360E | 2002-2014 |
| Sea Surface Temperature | | 0.08333 annual |
| NOAA Optimimum Interpolation (OI) | 89.5N - 89.5S, 0.5E - 359.5E | 1982-2014 |
| NOAA Sea Surface Temperature (SST) V2 | | 1 monthly |
| Marine currents | | 0.333 lat x 1 long |
| NCEP Global Ocean Data Assimilation System (GODAS) | 74.5S - 64.5N, 0.5E - 359.5E | 1980-2014 |

1OceanColor: http://oceancolor.gsfc.nasa.gov/cms/

2NOAA: http://www.esrl.noaa.gov/psd/data/gridded/data.noaa.oisst.v2.html