**Life below water**
Conserve and sustainably use the oceans, seas and marine resources for sustainable development

**Industrial fishing takes place in more than half the world’s ocean area, about four times the area of land-based agriculture.**

Vessel-hours of fishing activity, 2016 (per sq. km)

This recently published dataset uses radio transmissions, emitted for collision avoidance, to track fishing vessels. It excludes small vessels and, probably, illegal fishing.

<table>
<thead>
<tr>
<th>0</th>
<th>8.76</th>
<th>87.6</th>
<th>876 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>equivalent to 0.1%</td>
<td>1%</td>
<td>10% of a year</td>
<td></td>
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</tbody>
</table>

Each square kilometer of the most heavily fished regions of Europe and East Asia had activity equivalent to more than 10 percent of the 8,760 hours in a year.

These holes show vessels avoiding restricted areas.

**And 75 percent of fish catch is industrial.**

Global fish catch (millions of metric tons)

Note: “Other” includes subsistence, recreational, and artisanal sectors.


**Fish stocks are increasingly overfished.**

State of global fish stocks (% of total stocks)

Source: FAO via UNSD Global SDG Indicators Database (14.4.1).

Note: Pauly and Zeller 2016. http://doi.org/10.1038/ncomms10244
Activity on land can also damage seas. Hundreds of marine dead zones exist, with oxygen concentrations too low to support most life.

*Marine dead zones, 2017 (count by hexagonal area)*

Dead zones occur primarily when fertilizer runoff enters the water. This promotes the growth of algae, which depletes the water of oxygen that more complex organisms need to live.


Only about 7 percent of the world’s ocean area is designated as marine protected area, officially reserved for long-term conservation.

*Marine protected areas, 2018*

Marine protected area is a broad designation. For example, in Chile the Nazca-Desventuradas Marine Park has a strict “no take” rule, whereas the Mar de Juan Fernández area operates with looser restrictions.

Note: Excludes countries with less than 50,000 sq. km of protected area.

Source: UNEP–World Conservation Monitoring Centre Database on Protected Areas. WDI (ER.MRN.PTMR.ZS) and https://protectedplanet.net
Oceans are warmer because of climate change: sea surface temperature has increased in most places since 1901.

Change in sea surface temperature, 1901–2015 (degrees Celsius)

Warmer seas lead to coral bleaching or death, an outcome already observed in parts of Australia’s Great Barrier Reef.

Average global sea surface temperature anomaly, relative to 1971–2000 average (degrees Celsius)

Average sea surface temperature anomaly, Great Barrier Reef, relative to 1961–90 average (degrees Celsius)


Marine organisms are also affected directly by atmospheric carbon dioxide, which dissolves in the oceans, raising acidity beyond safe levels.

Aragonite is a mineral used in constructing the shells of marine organisms at the bottom of the food chain. When oceans acidify, aragonite cannot form and dissolves, threatening ecosystems and fisheries.

Surface aragonite saturation state (Ω_{ar})

<table>
<thead>
<tr>
<th>2018</th>
<th>2100, projected under RCP8.5 (high emissions) climate scenario (see page 51)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shells and coral skeletons begin to dissolve.</td>
<td>In the high emissions scenario, aragonite-using marine organisms would become stressed, if not worse, in all parts of the world’s oceans.</td>
</tr>
<tr>
<td>Organisms are stressed and may struggle to survive and reproduce.</td>
<td></td>
</tr>
<tr>
<td>Organisms can more easily build shells and skeletons. Above 4 is considered optimal.</td>
<td></td>
</tr>
<tr>
<td>Up to 1</td>
<td>1–2</td>
</tr>
</tbody>
</table>

Source: Friedrich, T. http://iprc.soest.hawaii.edu/users/tobiasf/Outreach/OA/Ocean_Acidification.html