

<b>Indicator</b>	
5	Pressure for coastal and marine recreation.
<b>Measurement</b>	
5.1	Number of berths and moorings and dry-stack storage capacity for recreational boating.
<b>What should the measurement tell us?</b>	
<p>This indicator should give us information on the pressure exerted by the recreational boats along the coast, which is more significant in areas close to marinas, harbours with recreational berths and other mooring sites. What is expected is that the higher the number of mooring sites, the higher the impact of recreational boating and also the more significant the related impact becomes (water pollution and seabed disturbance).</p> <p>With this measurement, we want to 1) monitor the trend on the demand for recreational boating and infrastructure in each region and 2) know where the largest concentrations of berths and moorings occur and for which a relative value must be obtained.</p>	
<b>Parameters</b>	
(i)	Number of “active” berths, moorings and dry-stack storage capacity for recreational boating for each year.
(ii)	Number of “active” berths, moorings and dry-stack storage capacity for recreational boating per km of coastline for each year.
<b>Coverage</b>	
Spatial	Temporal
Shoreline and estuaries up to 10km inland with direct access to the sea.	1995 and 2005
<b>Data sources</b>	
<p>Data on the number of berths and moorings for recreational boats in harbours and marinas can be obtained from the competent national or regional authorities responsible for the ports. These authorities may also provide data on the existence and capacity of dry-stack boat storage sites <sup>(1)</sup>.</p> <p>Marinas and other mooring sites located upstream in estuaries or further ‘inland’ and with direct access to the sea should be also considered if they shelter yachts and recreational boats that <i>do</i> travel along the coast and seawards and thus exert pressure on coastal zones. This is the case for regions where most ports and marinas are located inland because they provide better protection than the open sea.</p> <p>In addition, the regional government should provide data on seasonal or permanent moorings such as floating docks, quays or buoys fitted out on beaches, bays and natural harbours. Here, we will only consider legal moorings, which are those registered by the competent authority and are commonly managed by a yacht club, although some might be illegal.</p> <p>Counting all berths and moorings available at each marina, mooring site or dry-stack-storage</p>	

<p>sites is not a real measure of the pressure exerted by recreational boating, since not all mooring sites are always fully occupied. Consequently, the number of berths and moorings should be corrected by the mean percentage of occupation of each marina, port, mooring site or dry-stack boat storage site, so obtaining what we will call the “active” number of berths and moorings. This will also minimize the double-counts of boats that spend part of the year on a berth and the other part in dry-stacking. This data can be obtained by contacting ports, marinas and yacht clubs individually.</p>		
<b>Methodology</b>		
<b>Steps</b>	<b>Products</b>	
1	<p>Collect information on the name and location of marinas, harbours, dry-stack boat storage sites <sup>(1)</sup> and yacht clubs that manage other permanent or seasonal mooring sites existing in your region (docks, quays, buoys and other moorings fitted out on beaches, bays and natural harbours).</p>	<p>List of mooring or dry-storage sites for recreational boats.</p>
2	<p>Classify each mooring or dry-storage site into one of the following categories: (1) marinas and harbours, (2) dry-storage and (3) other mooring sites (seasonal beach moorings, etc.) and collect information on the number of berths and moorings (or storage capacity in the case of dry-stacking boat storage sites) on each mooring site <sup>(2)</sup> and their mean level of occupation.</p>	<p>List of mooring or dry-storage sites with their corresponding number of berths and moorings, classified into (1) marinas and harbours, (2) dry-storage and (3) other mooring sites.</p> <p>Mean level of occupation (%) on each mooring site .</p>
3	<p>Multiply the number of berths and moorings from each mooring site by its mean level of occupation.</p>	<p>Number of “active” berths and moorings on each mooring site: a number that estimates the number of recreational boats in each mooring site.</p>
4	<p>Add up the number of “active” berths and moorings obtained in step 3 for each category of mooring site defined in step 2.</p>	<p><u>Number of “active” recreational berths and moorings in (1) marinas and harbours, (2) dry-storage and (3) other mooring sites.</u></p>
5	<p>Obtain the coastline length of the region <sup>(3)</sup>.</p>	<p>Total coastline length (km).</p>
6	<p>Divide the product of step 4 by the product of step 5.</p>	<p><u>Number of “active” recreational berths and moorings in (1) marinas and harbours, (2) dry-storage and (3) other mooring sites, per km of coastline.</u></p>
<b>Presentation of the data</b>		
Map 1	<p>For the latest year, represent the relative importance of each individual mooring site or dry-storage site by symbols proportional to the total number of berths and moorings of the category to which it belongs. Use the following symbols for each category of mooring site: (1) marinas and harbours, a circle (2) dry-storage, a</p>	

	triangle and (3) other mooring sites, a square.																
Graph 1	Bar chart showing the trend in the number of “active” berths and moorings from (1) marinas and harbours, (2) dry-storage and (3) other mooring sites	<table border="1"> <caption>Trend in the number of "active" berths and moorings</caption> <thead> <tr> <th>Year</th> <th>Marinas and Harbours</th> <th>Dry marinas</th> <th>Other mooring sites</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1995</td> <td>~1,200</td> <td>~100</td> <td>~200</td> <td>~1,500</td> </tr> <tr> <td>2005</td> <td>~9,500</td> <td>~1,000</td> <td>~1,000</td> <td>~11,500</td> </tr> </tbody> </table>	Year	Marinas and Harbours	Dry marinas	Other mooring sites	Total	1995	~1,200	~100	~200	~1,500	2005	~9,500	~1,000	~1,000	~11,500
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Graph 2	Bar chart showing the trend in the number of “active” berths and moorings from (1) marinas and harbours, (2) dry-storage and (3) other mooring sites per km of coastline	<table border="1"> <caption>Trend in the number of "active" berths and moorings per km of coastline</caption> <thead> <tr> <th>Year</th> <th>Marinas and Harbours</th> <th>Dry marinas</th> <th>Other mooring sites</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1995</td> <td>~40</td> <td>~2</td> <td>~3</td> <td>~45</td> </tr> <tr> <td>2005</td> <td>~80</td> <td>~5</td> <td>~10</td> <td>~95</td> </tr> </tbody> </table>	Year	Marinas and Harbours	Dry marinas	Other mooring sites	Total	1995	~40	~2	~3	~45	2005	~80	~5	~10	~95
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<b>Adding value to the data</b>																	
<u>Trends in ship length</u>																	
National/regional data can also be used to illustrate long term trends in the length of recreational boats. Most datasets contain additional information on berths and moorings classified by ship length which can help explain such trends.																	
<u>Trends on the number of sailing/motor vessels</u>																	
On the other hand, it would also be interesting to illustrate the trend in the number of sailing vessels versus motor vessels. However, this information might be more difficult to obtain and it might only be available from the mooring site itself, since berths and moorings are not different for sailing boats than for motor vessels.																	
<b>Aggregation and disaggregation</b>																	
Statistics on the number of berths and moorings for recreational boats can be aggregated-disaggregated at any geographic scale required, from NUTS 5 to body of surface water <sup>(4)</sup> to province to country to regional sea or to the whole of Europe.																	

## Notes

- <sup>(1)</sup> Consider only dry-stack boat storage sites located in harbours, marinas or areas close enough to the shoreline where the boats can be launched directly to the water from a fork-lift truck without the need of transporting them by road. This prevents counting dry boat storage sites that are for boat hibernation (mainly located in the hinterland), since for those

boats we cannot relate the place of storage site to the place where they are launched or where they mainly navigate.

- (2) From now on, the terms berths and moorings will also include dry-stacking boat storage seats. The term mooring site includes all kinds of managed shelters/places with berths, moorings or dry-stacking boat storage.
- (3) See step 1 from Methodology of SIF 26.1 for more details on calculating the coastline length (notes 2 and 3 from this SIF do not apply in the present measurement). This indicator, though, does not require the inclusion of artificial structures in the calculation of the coastline length.
- (4) The Water Framework Directive 2000/60/EC defines the "Body of surface water". It means a discrete and significant element of surface water such as a lake, a reservoir, a stream, river or canal, part of a stream, river or canal, a transitional waterway or a stretch of coastal water. Therefore, the necessary implementation of the Directive divides the coast into stretches of uniform coastal water masses according to the criteria of Annex II of the Directive and the guidance document COAST.

**Changes agreed by NMG:**

- Omit the factor of % of occupation
- All kinds of marina will be considered for the calculation (also dry marinas for winter storage) and they will be specified on the graphs. The SIF will more clearly define each kind of marina.