



The Operational Land Imager on the Landsat 8 satellite captured this image of a phytoplankton bloom in the Sea of Marmara on May 17, 2015. The sea is surrounded on all sides by the nation of Turkey. Credit: NASA Earth Observatory

# June 2016



| SUNDAY  |    |    |    |    |    |    | MONDAY  |  |  |  |  |  |  | TUESDAY |   |   |   |   |   |   | WEDNESDAY             |   |   |   |   |   |   | THURSDAY              |   |    |    |    |    |    | FRIDAY |    |    |    |    |    |    | SATURDAY |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
|---|----|----|----|----|----|----|---|--|--|--|--|--|--|---------|---|---|---|---|---|---|-----------------------|---|---|---|---|---|---|-----------------------|---|----|----|----|----|----|--------|----|----|----|----|----|----|----------|----|----|----|----|----|----|----|----|----|--|--|--|--|---|--|--|--|--|--|--|------|--|--|--|--|--|--|---|---|---|---|---|---|---|--|--|--|--|--|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|---|--|--|--|--|--|--|---|--|--|--|--|--|--|---|--|--|--|--|--|--|
| <table border="1"> <tr><th colspan="7">MAY</th></tr> <tr><th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td></tr> <tr><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td></tr> <tr><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td></tr> <tr><td>29</td><td>30</td><td>31</td><td></td><td></td><td></td><td></td></tr> </table> |    |    |    |    |    |    | MAY   |  |  |  |  |  |  | S       | M | T | W | T | F | S | 1                     | 2 | 3 | 4 | 5 | 6 | 7 | 8                     | 9 | 10 | 11 | 12 | 13 | 14 | 15     | 16 | 17 | 18 | 19 | 20 | 21 | 22       | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |  |  |  |  | <table border="1"> <tr><th colspan="7">JULY</th></tr> <tr><th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th></tr> <tr><td></td><td></td><td></td><td></td><td></td><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr> <tr><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td></tr> <tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table> |  |  |  |  |  |  | JULY |  |  |  |  |  |  | S | M | T | W | T | F | S |  |  |  |  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |  |  |  |  |  |  | 2 |  |  |  |  |  |  | 3 |  |  |  |  |  |  | 4 |  |  |  |  |  |  |
| MAY   |    |    |    |    |    |    |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| S   | M  | T  | W  | T  | F  | S  |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 1   | 2  | 3  | 4  | 5  | 6  | 7  |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 8   | 9  | 10 | 11 | 12 | 13 | 14 |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 15  | 16 | 17 | 18 | 19 | 20 | 21 |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 22  | 23 | 24 | 25 | 26 | 27 | 28 |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 29  | 30 | 31 |    |    |    |    |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| JULY  |    |    |    |    |    |    |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| S   | M  | T  | W  | T  | F  | S  |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
|   |    |    |    |    | 1  | 2  |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 3   | 4  | 5  | 6  | 7  | 8  | 9  |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 10  | 11 | 12 | 13 | 14 | 15 | 16 |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 17  | 18 | 19 | 20 | 21 | 22 | 23 |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 24  | 25 | 26 | 27 | 28 | 29 | 30 |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 31  |    |    |    |    |    |    |   |  |  |  |  |  |  |         |   |   |   |   |   |   |                       |   |   |   |   |   |   |                       |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 5   |    |    |    |    |    |    | 6   |  |  |  |  |  |  | 7       |   |   |   |   |   |   | 8                     |   |   |   |   |   |   | 9                     |   |    |    |    |    |    | 10     |    |    |    |    |    |    | 11       |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
|   |    |    |    |    |    |    | 12  |  |  |  |  |  |  | 13      |   |   |   |   |   |   | 14                    |   |   |   |   |   |   | 15                    |   |    |    |    |    |    | 16     |    |    |    |    |    |    | 17       |    |    |    |    |    |    | 18 |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| Father's Day  |    |    |    |    |    |    | Summer Solstice   |  |  |  |  |  |  |         |   |   |   |   |   |   | GOES-3 launched, 1978 |   |   |   |   |   |   | GOES-2 launched, 1977 |   |    |    |    |    |    |        |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
| 19  |    |    |    |    |    |    |  |  |  |  |  |  |  | 20      |   |   |   |   |   |   | 21                    |   |   |   |   |   |   | 22                    |   |    |    |    |    |    | 23     |    |    |    |    |    |    | 24       |    |    |    |    |    |    | 25 |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |
|   |    |    |    |    |    |    | NOAA-6 launched, 1979<br>GOES-14 launched, 2009                                     |  |  |  |  |  |  | 27      |   |   |   |   |   |   | 28                    |   |   |   |   |   |   | 29                    |   |    |    |    |    |    | 30     |    |    |    |    |    |    |          |    |    |    |    |    |    |    |    |    |  |  |  |  |   |  |  |  |  |  |  |      |  |  |  |  |  |  |   |   |   |   |   |   |   |  |  |  |  |  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |   |  |  |  |  |  |  |

## An eye on healthy water

Not only does NOAA monitor ocean health, but also the health of rivers and lakes. NOAA, NASA, the Environmental Protection Agency and the U.S. Geological Survey developed an early warning system for detecting harmful and nuisance algal blooms in freshwater bodies such as the Great Lakes. A central part of this plan is the use of satellite remote sensing capabilities to identify algal blooms.

Massive algal bloom in Lake Erie as seen by the Suomi NPP satellite's VIIRS instrument on March 21, 2012.



Credit: NOAA Visualization Laboratory, NOAA/NASA Suomi NPP VIIRS