Water Clarity Assessments for Chesapeake Bay

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Water Clarity Assessments

Maryland and Virginia conduct biennial assessments of submerged aquatic vegetation (SAV) acreages in Chesapeake Bay for the preceding three-year period.

The Chesapeake is subdivided into assessment segments, each with a SAV goal.

A segment can pass if it meets or exceeds its SAV goal in any of those three years. SAV are mapped via annual aerial surveys.

If a segment does not meet its SAV goal, it can still pass if there is enough suitable habitat (water clarity) to exceed its goal by a factor of 2.5, and data are available for assessment.

Photo: Brooke Landry
Water Clarity Assessment

Areas that are assessed:

- Shallow areas of 2 meters or less
- Areas of existing SAV or those areas considered ‘no grow’ zones are excluded

Bathymetry (meters)

2004 SAV Coverage (green)

Assessable Area for Water Clarity (tan)
Water Clarity Assessment

Methods

- Co-occurring turbidity (NTU), chlorophyll, and Licor (Kd) measurements are made throughout space/time to develop regional models of Kd.

- DATAFLOW (intensive surface mapping) monthly (Apr-Oct) cruises are conducted to collect turbidity/chl

- Data are interpolated and models run in GIS to derive monthly Kd surface
Calibration Sites

Stations
- Long Term Fixed
- Continuous Monitoring
- Data Flow Calibration
- Nontidal Network
- CORE Trend
- Maryland Coastal Bays
West/Rhode Rivers - 2004

<table>
<thead>
<tr>
<th>2004 SAV Acres</th>
<th>SAV Goal</th>
<th>(SAV Acres&lt;Goal) * 2.5</th>
<th>Average Water Clarity Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>(WEST)</td>
<td>0</td>
<td>238</td>
<td>384.9</td>
</tr>
<tr>
<td>(Rhode)</td>
<td>0</td>
<td>60</td>
<td>178.4</td>
</tr>
</tbody>
</table>

- **SAV acreage**
- **Passes SAV light criteria**
- **Fails SAV light criteria for shallow water**

April 2004

May 2004

June 2004

July 2004

Aug 2004

Sept. 2004

Oct. 2004
### 2004 Results for West and Rhode Rivers

<table>
<thead>
<tr>
<th></th>
<th>RHDMH (WC acres)</th>
<th>% (Goal*2.5)</th>
<th>WSTMH (acres)</th>
<th>% (Goal*2.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>24.247</td>
<td>16.16</td>
<td>349.402</td>
<td>58.72</td>
</tr>
<tr>
<td>May</td>
<td>363.448</td>
<td>242.30</td>
<td>655.459</td>
<td>110.16</td>
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<tr>
<td>June</td>
<td>330.42</td>
<td>220.28</td>
<td>729.88</td>
<td>122.67</td>
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<tr>
<td>July</td>
<td>157.85</td>
<td>105.23</td>
<td>683.16</td>
<td>114.82</td>
</tr>
<tr>
<td>August</td>
<td>16.02</td>
<td>10.68</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Sept</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>October</td>
<td>356.6</td>
<td>237.73</td>
<td>276.13</td>
<td>46.41</td>
</tr>
<tr>
<td>Average</td>
<td>178.37</td>
<td>118.91</td>
<td>384.86</td>
<td>64.68</td>
</tr>
</tbody>
</table>

**Goal = 150 acres**  **Goal = 595 acres**

**RHDMH - PASS**  **WSTMH - PASS**