The shingle hinterland at Hythe Ranges is used as a military training range. The area is protected by armour rock and the beach is retained by a dense timber groyne field.

Survey outcome:

RBMP design levels have not been calculated for Hythe Ranges, so the Cross Sectional Area (CSA) cannot be assessed in relation to Standard of Protection (SoP). Profile ranges have been plotted to show the current CSA in relation to historic levels.

<table>
<thead>
<tr>
<th>Survey type</th>
<th>Survey dates</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Most recent survey: Autumn 2018</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autumn to Spring</td>
<td>12/11/2017</td>
<td>Low level changes through the majority of the unit. The eastern end shows larger gains and losses; the most eastern profile, 4c00348, gained 21m² (14%) and three neighbouring profiles lost between 10% and 14%.</td>
</tr>
<tr>
<td>Spring to Spring</td>
<td>12/11/2017</td>
<td>During the last year, this beach has demonstrated erosion across the majority of the frontage. Three profiles to the east show larger losses, with Profile 4c00359 indicating a loss of 21m² (12%) of beach material. Profile 4c00348 is the only profile that has shown a significant gain of material, gaining 20m² (14%).</td>
</tr>
<tr>
<td>Summer to Spring</td>
<td>10/05/2017</td>
<td>Low level changes on most western profiles, with one accretive profile; Profile 4c00396 gained 12m² (7%). Four of the six most eastern profiles show significant changes, two erosive and two accretive. Profile 4c00359 lost 17m² (10%) and Profile 4c00348 gained 28m² (20%). The difference model illustrates the volumetric changes across the unit. The majority of groyne bays are showing gains against the southern side of the groynes suggesting a south to north longshore drift direction. The largest changes occur at the west and eastern ends of the unit; the furthest polygon west, HR01 shows a gain of 1,535m³ and in the east the largest overall recorded loss is in Polygon HR28 of -1,488m³. There is a total volume change of -6,923m³.</td>
</tr>
<tr>
<td>Survey type</td>
<td>Survey dates</td>
<td>Comments</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Baseline to Spring</td>
<td>14/09/2003</td>
<td>The CSA chart shows the majority of profiles to be in the middle of their recorded ranges. The western profiles are generally towards the lower end of their CSA range whereas some of the central Profiles (4c00372, 4c00374 and 4c00375) are the highest recorded values.</td>
</tr>
<tr>
<td></td>
<td>15/04/2018</td>
<td>Low level changes are observed along the majority of profiles, which is due to the extensive timber groyne field.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The western profiles indicate beach losses with the two most western recording significant changes; Profiles 4c00402 and 4c00400 lost 42m² (14%) and 34m² (10%) respectively. An accretive trend dominates central and eastern profiles, although many changes are negligible; Profile 4c00364 gained 21m² (11%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The difference model shows a general trend of erosion in the western and eastern ends of the unit and accretion in the centre. There is a total volume change of -13,189m³.</td>
</tr>
<tr>
<td>Spring to Autumn</td>
<td>15/04/2018</td>
<td>Low level changes through the unit with all except one, changing by less than +/-5%. The only profile to show a significant gain was Profile 4c00345, which gained 5m² (8%).</td>
</tr>
<tr>
<td></td>
<td>24/11/2018</td>
<td></td>
</tr>
</tbody>
</table>
South East Regional Coastal Monitoring Programme
Profile Change Summary for Spring 2017 to Spring 2018

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Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>Location</th>
<th>Annual Change</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>4c00396_t</td>
<td>±5%</td>
<td>(9)</td>
</tr>
<tr>
<td>4c00402_t</td>
<td>-3%</td>
<td>(-7)</td>
</tr>
<tr>
<td>4c00400_t</td>
<td>-2%</td>
<td>(-7)</td>
</tr>
<tr>
<td>4c00391_t</td>
<td>-1%</td>
<td>(-2)</td>
</tr>
<tr>
<td>4c00386_t</td>
<td>-9%</td>
<td>(-20)</td>
</tr>
<tr>
<td>4c00380_t</td>
<td>-1%</td>
<td>(-3)</td>
</tr>
</tbody>
</table>

Meters

ACCUMULATION

- >30%
- 15-30%
- 5-15%
- Less than 5% (no change)

EROSION

- 5-15%
- 15-30%
- >30%
### Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>Station</th>
<th>Change</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4c00364_t</td>
<td>-2%</td>
<td>(4)</td>
</tr>
<tr>
<td>4c00375_t</td>
<td>5%</td>
<td>(12)</td>
</tr>
<tr>
<td>4c00380_t</td>
<td>-1%</td>
<td>(-3)</td>
</tr>
<tr>
<td>4c00354_t</td>
<td>-7%</td>
<td>(-5)</td>
</tr>
<tr>
<td>4c00386_t</td>
<td>-9%</td>
<td>(-20)</td>
</tr>
<tr>
<td>4c00370_t</td>
<td>-6%</td>
<td>(-15)</td>
</tr>
<tr>
<td>4c00348_t</td>
<td>14%</td>
<td>(20)</td>
</tr>
<tr>
<td>4c00359_t</td>
<td>-12%</td>
<td>(-21)</td>
</tr>
</tbody>
</table>

**Legend**

- **ACCRETION**
  - >30%
  - 15-30%
  - 5-15%
  - Less than 5% (no change)

- **EROSION**
  - 5-15%
  - 15-30%
  - >30%
## South East Regional Coastal Monitoring Programme
Profile Change Summary for Baseline 2003 to Spring 2018

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### Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>Location</th>
<th>Change (%)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4c00396_t</td>
<td>-4% (9)</td>
<td></td>
</tr>
<tr>
<td>4c00386_t</td>
<td>1% (1)</td>
<td></td>
</tr>
<tr>
<td>4c00402_t</td>
<td>-14% (42)</td>
<td></td>
</tr>
<tr>
<td>4c00391_t</td>
<td>-5% (10)</td>
<td></td>
</tr>
<tr>
<td>4c00400_t</td>
<td>-10% (34)</td>
<td></td>
</tr>
<tr>
<td>4c00380_t</td>
<td>5% (12)</td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**

- **ACCRETION**
  - >30%
  - 15-30%
  - 5-15%
  - Less than 5% (no change)

- **EROSION**
  - 5-15%
  - 15-30%
  - >30%
### Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>CHANGE</th>
<th>COUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4c00386</td>
<td>1%</td>
<td>1</td>
</tr>
<tr>
<td>4c00348</td>
<td>4%</td>
<td>7</td>
</tr>
<tr>
<td>4c00380</td>
<td>5%</td>
<td>12</td>
</tr>
<tr>
<td>4c00375</td>
<td>8%</td>
<td>19</td>
</tr>
<tr>
<td>4c00370</td>
<td>5%</td>
<td>11</td>
</tr>
<tr>
<td>4c00359</td>
<td>-2%</td>
<td>-3</td>
</tr>
<tr>
<td>4c00364</td>
<td>11%</td>
<td>21</td>
</tr>
<tr>
<td>4c00354</td>
<td>-3%</td>
<td>-2</td>
</tr>
</tbody>
</table>

**Legend:**
- **ACCRETION**
  - >30%
  - 15-30%
  - 5-15%
  - Less than 5% (no change)
- **EROSION**
  - 5-15%
  - 15-30%
  - >30%

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South East Regional Coastal Monitoring Programme
Difference Model 2003 - 2018

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Change in Elevation (m)

- Volume change (m³)
  - < -1.5
  - -1.0 to -1.5
  - -0.5 to -1.0
  - -0.25 to -0.5
  - 0.25 to 0.5
  - 0.5 to 1.0
  - 1.0 to 1.5
  - > 1.5

Area boundary
South East Regional Coastal Monitoring Programme
Difference Model 2003 - 2018

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Change in Elevation (m):
- < -1.5
- -1.0 to -1.5
- -0.5 to -1.0
- -0.25 to -0.5
- 0.25 to 0.5
- 0.5 to 1.0
- 1.0 to 1.5
- > 1.5

Volume change (m³)

Meters
South East Regional Coastal Monitoring Programme
Profile Change Summary for Summer 2017 to Spring 2018

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### Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>Section</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4c00402_t</td>
<td>-2% (-5)</td>
</tr>
<tr>
<td>4c00400_t</td>
<td>-2% (-5)</td>
</tr>
<tr>
<td>4c00396_t</td>
<td>7% (12)</td>
</tr>
<tr>
<td>4c00391_t</td>
<td>-1% (-1)</td>
</tr>
<tr>
<td>4c00380_t</td>
<td>3% (7)</td>
</tr>
<tr>
<td>4c00386_t</td>
<td>-3% (-6)</td>
</tr>
</tbody>
</table>

### ACCLERATION

- >30%
- 15-30%
- 5-15%
- Less than 5% (no change)

### EROSION

- >30%
- 15-30%
- 5-15%

Meters
South East Regional Coastal Monitoring Programme
Profile Change Summary for Summer 2017 to Spring 2018

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Annual Change in Cross-Sectional Area (m2)

<table>
<thead>
<tr>
<th>Location</th>
<th>Change</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4c00386_t</td>
<td>-3 %</td>
<td>(-6)</td>
</tr>
<tr>
<td>4c00370_t</td>
<td>-7 %</td>
<td>(-16)</td>
</tr>
<tr>
<td>4c00348_t</td>
<td>20 %</td>
<td>(28)</td>
</tr>
<tr>
<td>4c00359_t</td>
<td>-10 %</td>
<td>(-17)</td>
</tr>
<tr>
<td>4c00375_t</td>
<td>7 %</td>
<td>(17)</td>
</tr>
<tr>
<td>4c00364_t</td>
<td>3 %</td>
<td>(7)</td>
</tr>
<tr>
<td>4c00380_t</td>
<td>7 %</td>
<td>(19)</td>
</tr>
</tbody>
</table>
### Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>Location</th>
<th>Change Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>4c00402_t</td>
<td>4% (7)</td>
</tr>
<tr>
<td>4c00396_t</td>
<td>0% (0)</td>
</tr>
<tr>
<td>4c00391_t</td>
<td>3% (6)</td>
</tr>
<tr>
<td>4c00400_t</td>
<td>-3% (-9)</td>
</tr>
<tr>
<td>4c00386_t</td>
<td>-3% (-5)</td>
</tr>
<tr>
<td>4c00380_t</td>
<td>-2% (-5)</td>
</tr>
</tbody>
</table>

### Notes:
- **Accretion**:
  - >30%
  - 15-30%
  - 5-15%
  - Less than 5% (no change)
- **Erosion**:
  - >30%
  - 15-30%
  - 5-15%

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South East Regional Coastal Monitoring Programme
Profile Change Summary for Spring 2018 to Autumn 2018

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Annual Change in Cross-Sectional Area (m²)

<table>
<thead>
<tr>
<th>Location</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>4c00375_t</td>
<td>1%</td>
</tr>
<tr>
<td>4c00370_t</td>
<td>3%</td>
</tr>
<tr>
<td>4c00359_t</td>
<td>5%</td>
</tr>
<tr>
<td>4c00354_t</td>
<td>8%</td>
</tr>
<tr>
<td>4c00380_t</td>
<td>-2%</td>
</tr>
<tr>
<td>4c00364_t</td>
<td>-3%</td>
</tr>
<tr>
<td>4c00386_t</td>
<td>-3%</td>
</tr>
<tr>
<td>4c00348_t</td>
<td>-5%</td>
</tr>
<tr>
<td>4c00391_t</td>
<td>3%</td>
</tr>
</tbody>
</table>

Note: Changes are categorized as follows:
- **>30%**
- **15-30%**
- **5-15%**
- **Less than 5% (no change)**
Appendix A: Explanation of the Historic Summary Chart

The historic changes in Cross-Sectional Area (CSA) for each profile are summarised by identifying the historic highest and lowest CSA alongside the current CSA for each profile:

FIGURE A1: PRESENTATION OF STANDARD OF PROTECTION AND TRIGGER LEVELS
(A) HISTORIC VARIATION OF BEACH LEVELS (CSA)
(B) SUMMARY OF DATA, PINK BAR – CURRENT BEACH LEVEL, BLACK BARS – HISTORIC HIGH AND LOW
Appendix B: Profile Change Summary

Changes along individual profiles for a range of timeframes are summarised in a series of thematic maps on the previous pages. The maps show the location of each beach profile, superimposed on aerial photography (note the lines have been extended for clarity). The name of the profile, the percentage change of beach material and the change in m² has been including upon the line, which is illustrated in Figure B1.

![FIGURE B1: PRESENTATION OF THE PROFILE CHANGE SUMMARY](image-url)