South West Regional Coastal Monitoring Programme

Annual Survey Report
Isles of Scilly
2018

AR 78
September 2018
Cover Photograph: St Martin’s, Isles of Scilly, September 2018
Taken By: Plymouth Coastal Observatory
<table>
<thead>
<tr>
<th>Document Title</th>
<th>Annual Survey Report 2018 Isles of Scilly</th>
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<tr>
<td>Reference</td>
<td>AR 78</td>
</tr>
<tr>
<td>Status</td>
<td>Final</td>
</tr>
<tr>
<td>Date</td>
<td>September 2018</td>
</tr>
<tr>
<td>Project Name</td>
<td>South West Regional Coastal Monitoring Programme</td>
</tr>
<tr>
<td>Author</td>
<td>I M Kelly</td>
</tr>
<tr>
<td>Checked By</td>
<td>E A Siggery</td>
</tr>
</tbody>
</table>
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Summary

Over the past year, the majority of profiles on St Mary’s have displayed a trend for stability, with the exception of the profiles at Bar Point, where a combination of accretion and erosion has taken place, with up to 29% changes in cross-sectional area. No change or low level erosion has been observed on St Agnes or Bryher. On Tresco, most profiles have shown a trend for low level of accretion or stability, with up to 40m$^2$ of material gained on profile 6e01571A on Borough Beach. The south coast of St Martin’s has experienced a trend for accretion to the west of Higher Town Bay. At St Martin’s Flats, all profiles have gained material, increasing more so towards the west of the survey unit.

Similar to the year on year analysis, the longer term trend is for very little or no change on St Agnes and Bryher, with the only exception being the profiles in Rushy Bay, which have experienced erosion up to 90% cross-sectional area changes. On St Mary’s, dune front erosion and roll-back have affected the profiles at Bar Point, where the dunes have receded by ~10m in places, despite up to 52m$^2$ increases in cross-sectional area being observed along a few profiles. Low to medium level erosion and accretion has been observed at Porth Cressa whilst Porth Loo has experienced low level erosion. On Tresco, the majority of profiles on the northern coast have shown a trend for accretion, whilst the southern coast has displayed a mixture of erosion and accretion. Most profiles on St Martin’s have either accreted or remained stable since the 2007 baseline, with the exception of two profiles at Tean Sound and the Flats.

Five storms that exceeded the 4.5m threshold were recorded in 2017 by the St Mary’s Sound Wave Buoy, of which four were south-westerly and one southerly. The strongest storm event took place on 2nd February 2017, with a highest significant wave height of 6.72m.
South West Regional Coastal Monitoring Programme

Annual Survey Report 2018 – Isles of Scilly

Introduction

Analysis presented in this report provides an overview of beach changes and wave and tidal measurements since the commencement of the South West Regional Coastal Monitoring Programme. The first beach surveys (using LiDAR) took place during the autumn of 2007 and changes are reported until autumn 2018.

Data are presented at the following levels:

- **Process Cell**
  - Process cell summary of percentage and actual profile change from Autumn 2017 to Autumn 2018.
  - Process cell summary of percentage and actual profile change from Baseline 2007 to Autumn 2018.

- **Survey Unit**
  - Detailed beach profile change from Autumn 2017 to Autumn 2018.
  - Detailed beach profile change from Baseline 2007 to Autumn 2018.
  - Time series of beach profile graphs.
  - Trend analysis of beach cross-sectional area.

The process cell summary maps provide an at-a-glance summary of the changes during the past year and over the longer term. It is recommended that the user should use the maps to identify areas of interest and then examine the individual profile plots and trends. Colour-coded lines highlight areas of maximum change and identify profiles which might need closer examination.

Lines are colour-coded based on actual change; percentage change is displayed in brackets following the profile name on each line. Please note that lines on the map have been extended for clarity and therefore may not represent the actual distance surveyed.

Difference models have been produced where there are at least two baseline surveys to compare. Where available, the most recent LiDAR data has been used to extract the level of Mean High Water (MHW) for each survey unit, and where possible, sediment distribution maps are produced from the latest topographic baseline survey information.

It must be appreciated that the accuracies of each measurement system must be taken into account when drawing conclusions, particularly from the difference models. In the case of topographic difference models from RTK GPS surveys, the accuracy of each data point is ±0.03m and therefore differences of ±0.06m can generally be considered as "real", whilst smaller changes may be an artefact of the measuring system, and are considered to be "No Change". Difference plots show changes >±0.25m, which should be indicative of areas of genuinely measurable change. Smaller changes may also be present but these are filtered from the analysis to provide clarity. This report displays difference models only where
detailed analysis suggests that the changes are real but, nevertheless, the user should approach the results as indicative, unless reinforced overtime or with other information.

Where LiDAR has provided the source data sets, the modelling is less precise. Each LiDAR cell value has a plan position representative of a 1m$^2$ grid. It is not reasonable to expect to observe changes with positional accuracy of better than 1-2m therefore. Profiles of steep slopes may suggest that the changes “bounce” back and forth. This is an artefact of the accuracy of the source data. LiDAR is particularly ineffective at identifying sharp edges or steep slopes e.g. cliffs, seawalls. Despite these limitations in accuracy the changes shown indicate an overview of profile change, but to a lower precision than the RTK data. The location of the regularly surveyed profiles superimposed on the difference plots indicates how representative these profiles might be of overall changes.
St Mary’s Sound Directional Waverider Buoy

<table>
<thead>
<tr>
<th>Location</th>
<th>OS 90367 E 8029 N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latitude:</td>
<td>49° 53.53' N</td>
</tr>
<tr>
<td>Longitude:</td>
<td>06° 18.77' W</td>
</tr>
<tr>
<td>Instrument type</td>
<td>Datawell Directional Waverider Mk III</td>
</tr>
<tr>
<td>Water depth</td>
<td>~53m CD</td>
</tr>
<tr>
<td>Buoy in situ</td>
<td>in St Mary’s Sound. Photo courtesy of Fugro GB Marine Limited</td>
</tr>
<tr>
<td>Location of buoy</td>
<td>(Google mapping, image ©2016 Getmapping plc)</td>
</tr>
</tbody>
</table>

Data Quality

<table>
<thead>
<tr>
<th>Recovery rate (%)</th>
<th>Sample interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>30 minutes</td>
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</tbody>
</table>

Monthly averages - 2017

All times are GMT

<table>
<thead>
<tr>
<th>Month</th>
<th>$H_s$ (m)</th>
<th>$T_p$ (s)</th>
<th>$T_r$ (s)</th>
<th>Dir. (°)</th>
<th>SST (°C)</th>
<th>Bimodal seas (%)</th>
<th>No. of days</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>1.38</td>
<td>8.1</td>
<td>5.0</td>
<td>205</td>
<td>11.0</td>
<td>14</td>
<td>31</td>
</tr>
<tr>
<td>February</td>
<td>1.87</td>
<td>9.1</td>
<td>5.5</td>
<td>213</td>
<td>10.5</td>
<td>19</td>
<td>28</td>
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<tr>
<td>March</td>
<td>1.54</td>
<td>8.9</td>
<td>5.3</td>
<td>223</td>
<td>10.3</td>
<td>19</td>
<td>31</td>
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<tr>
<td>April</td>
<td>0.70</td>
<td>8.3</td>
<td>4.6</td>
<td>208</td>
<td>10.9</td>
<td>4</td>
<td>30</td>
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<tr>
<td>May</td>
<td>1.10</td>
<td>8.2</td>
<td>4.9</td>
<td>203</td>
<td>12.0</td>
<td>5</td>
<td>31</td>
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<tr>
<td>June</td>
<td>0.92</td>
<td>8.3</td>
<td>4.8</td>
<td>260</td>
<td>13.9</td>
<td>5</td>
<td>30</td>
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<tr>
<td>July</td>
<td>0.77</td>
<td>7.4</td>
<td>4.6</td>
<td>251</td>
<td>14.8</td>
<td>2</td>
<td>31</td>
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<tr>
<td>August</td>
<td>0.79</td>
<td>7.0</td>
<td>4.6</td>
<td>245</td>
<td>15.2</td>
<td>1</td>
<td>31</td>
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<tr>
<td>September</td>
<td>1.14</td>
<td>7.8</td>
<td>5.0</td>
<td>244</td>
<td>14.8</td>
<td>9</td>
<td>30</td>
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<tr>
<td>October</td>
<td>1.20</td>
<td>8.7</td>
<td>5.1</td>
<td>241</td>
<td>14.1</td>
<td>15</td>
<td>31</td>
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<tr>
<td>November</td>
<td>1.02</td>
<td>8.4</td>
<td>4.7</td>
<td>236</td>
<td>13.1</td>
<td>9</td>
<td>30</td>
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<tr>
<td>December</td>
<td>1.35</td>
<td>8.8</td>
<td>5.1</td>
<td>216</td>
<td>11.6</td>
<td>11</td>
<td>31</td>
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Storm Analysis

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Hs (m)</th>
<th>Tp (s)</th>
<th>Ts (s)</th>
<th>Dir. (°)</th>
<th>Water level elevation* (OD)</th>
<th>Tidal stage (hours re. HW)</th>
<th>Tidal range (m)</th>
<th>Tidal surge* (m)</th>
<th>Max. surge* (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>02-Feb-2017 16:00</td>
<td>6.72</td>
<td>12.5</td>
<td>8.5</td>
<td>201</td>
<td>-1.31</td>
<td>HW -4</td>
<td>4.00</td>
<td>-</td>
<td>-</td>
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<tr>
<td>16-Oct-2017 12:00</td>
<td>6.52</td>
<td>10.0</td>
<td>8.5</td>
<td>210</td>
<td>0.09</td>
<td>HW -3</td>
<td>3.70</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>26-Jan-2017 16:30</td>
<td>4.98</td>
<td>10.0</td>
<td>7.0</td>
<td>177</td>
<td>2.09</td>
<td>HW</td>
<td>3.80</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>21-Oct-2017 07:30</td>
<td>4.70</td>
<td>10.5</td>
<td>7.8</td>
<td>217</td>
<td>1.31</td>
<td>HW +2</td>
<td>5.00</td>
<td>0.27</td>
<td>0.32</td>
</tr>
<tr>
<td>31-Dec-2017 17:30</td>
<td>4.51</td>
<td>10.5</td>
<td>7.7</td>
<td>205</td>
<td>1.19</td>
<td>HW +2</td>
<td>4.60</td>
<td>-</td>
<td>-</td>
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</table>

* Tidal information is obtained from the National Network gauge at St Mary’s and/or estimated from the predicted tide levels (Admiralty Total Tide). The surge shown is the residual at the time of the highest Hs. The maximum tidal surge is the largest surge during the storm event.

Annual Statistics

<table>
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<tr>
<th>Year</th>
<th>Annual Hs exceedance** (m)</th>
<th>Annual Maximum Hs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.05% 0.5% 1% 2% 5% 10%</td>
<td>Date</td>
</tr>
<tr>
<td>2014</td>
<td>- - - 2.86 2.29 1.96</td>
<td>06-Oct-2014 02:30</td>
</tr>
<tr>
<td>2015</td>
<td>5.31 4.11 3.68 3.27 2.80 2.35</td>
<td>30-Dec-2015 06:00</td>
</tr>
<tr>
<td>2016</td>
<td>4.76 3.59 3.06 2.72 2.32 1.95</td>
<td>10-Apr-2016 14:30</td>
</tr>
<tr>
<td>2017</td>
<td>6.33 4.22 3.63 3.07 2.49 2.04</td>
<td>02-Feb-2017 16:00</td>
</tr>
</tbody>
</table>

** i.e. 5% of the Hs values measured in 2014 exceeded 2.29 m

Distribution plots

The distribution of wave parameters are shown in the accompanying graphs/tables of:

- Annual time series of Hs (red line is 4.59 m storm alert threshold)
- Incidence of storm waves for 2017. Storm events are defined using the Peaks-over-Threshold method. The highest Hs of each storm event is shown
- Wave height exceedance each year since deployment
- Percentage of occurrence of Hs, Tp, Ts and Direction for 2017
- Wave rose (percentage of occurrence of direction vs. Hs) for all measured data
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

General

The buoy, owned by Teignbridge District Council, was first deployed on 15 May 2014, at which time the magnetic declination at the site was 3.03° west, changing by 0.17° east per year.

Acknowledgements

The shore station is kindly hosted by the leaseholder of the Coastguard Tower.

Tidal data at St Mary’s were provided by the British Oceanographic Data Centre from the UK national tide gauge network, owned and operated by the Environment Agency.
St Mary's Sound - Significant Wave Height (Hs) during 2017

Day in month

January
February
March
April
May
June
July
August
September
October
November
December
St Mary's Sound 2017

Offshore Wave Hs (m)
St Mary's Sound WB: 15/05/2014 - 31/12/2017

% of occurrence

Hs (metres)

Tp (seconds)

Direction (degrees)

Tz (seconds)

% of occurrence

>= 6.00 < 958.00 (m)
>= 5.50 < 6.00 (m)
>= 5.00 < 5.50 (m)
>= 4.50 < 5.00 (m)
>= 4.00 < 4.50 (m)
>= 3.50 < 4.00 (m)
>= 3.00 < 3.50 (m)
>= 2.50 < 3.00 (m)
>= 2.00 < 2.50 (m)
>= 1.50 < 2.00 (m)
>= 1.00 < 1.50 (m)
>= 0.50 < 1.00 (m)
>= 0.00 < 0.50 (m)
St Mary's Sound 2014 to 2017 - Joint distribution (% of occurrence)
The table below gives the completion dates for beach surveys between Autumn 2007 and Autumn 2018.

|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|

Notes:
- Post Storm: 26/09/2007
- Overall: 26/09/2007
### Key
- **Completed on Time and Accepted**
- **Overdue**
- **Surveyed but Not Submitted / Accepted**
- **Survey Rejected**
- **Not Scheduled for Survey**

For the most recent survey schedules for each survey unit please see [http://www.coastalmonitoring.org/southwest/survey_programme_schedule/](http://www.coastalmonitoring.org/southwest/survey_programme_schedule/)
Topographic Survey Report

Profile Data

Analysis has been conducted for those sites where a minimum of three surveys have been recorded. In general, changes are measured relative to the Mean Low Water Springs (MLWS) level. In cases where none of these levels can be reached the master profile is placed at the most appropriate level for the survey unit in question.

A full time series of plotted beach profiles is shown superimposed on and relative to a Master Profile for each profile location. The Master Profile provides the basis for calculation of beach cross-sectional area changes. Where possible, identical depth boundaries have been used for all profiles within a survey unit. However, even where this has not been possible, direct comparisons can be made for the beach cross-sectional area at one profile over time, since the Master Profile is constant for each profile (Figure 1). In some instances, raising the lower depth of the Master Profile may reduce the overall cross-sectional area of the profile. This may cause small changes in the beach profile to have a large impact on the percentage change. This effect has been taken into account in the analysis of change to beach profiles. The trend in cross-sectional area (CSA) is presented as a graph for each profile (Figure 2).

![Figure 1: Example Master Profile with CSA Calculated from the Surveyed GPS Profile](image-url)
Process Cell

The Beach Change Summary maps contain an at-a-glance condition of the whole of the Scilly's archipelago with the lines representing the average accretion, no change or erosion for each survey unit where there is topographic data.

Survey Unit

Topographic changes within each survey unit are summarised on two maps:

- Beach change map (Autumn to Autumn).
- Beach change map (Baseline to Autumn).

Beach change maps show the location of each beach profile, superimposed on an aerial photograph (note that the line may be extended for clarity). Where possible, the annual change in cross-sectional area has been calculated from Autumn 2017 to Autumn 2018 and from Baseline 2007 to Autumn 2018. Please note that the 2007 baseline data was collected using LiDAR.

Survey Schedules

Beach surveys on the Isles of Scilly are conducted once a year in the Autumn usually between the end of August and the end of September depending on spring tidal windows.
The dates of individual surveys are given in the topographic survey record and with the analysis for each survey unit.

**OSTN15 Transformation**

As of January 2017, PCO have adopted the new OSGB36 OSTN15 transformation. Previous data was collected in OSGB36 transformed via OSTN02. As a ~0.37m difference in elevation is observed between OSTN02 and OSTN15 in the Isles of Scilly, all past data has been converted to OSTN15 for the purpose of the 2018 Annual Report.
EXPLANATORY NOTES

Change in Cross-sectional Area (CSA)

The annual change in cross-sectional area is calculated as the difference in CSA between two surveys, expressed as a percentage change compared to the earlier CSA.

\[
\frac{\text{CSA}_1 - \text{CSA}_2}{\text{CSA}_2} \times 100 \quad \text{eqn(1)}
\]

Where \( \text{CSA}_1 \) = most recent spring survey and \( \text{CSA}_2 \) = spring survey previous year. Therefore an annual change of \(-14\%\) represents erosion during the last year of 14\% of the area of last year’s survey.

Net Sediment Volume Calculation

This is the volume change in m\(^3\) across each individual survey unit over time. The initial volumes are derived from the Digital Terrain Models (DTM) made for consecutive baseline topographic surveys. Both models are clipped to cover the same area, and a volume above the MLWS plane is calculated for each DTM. The net sediment change is calculated as

\[
\text{Vol}_1 - \text{Vol}_2 \quad \text{eqn(2)}
\]

Where \( \text{Vol}_1 \) = most recent DTM model volume and \( \text{Vol}_2 \) = earlier DTM model volume. Therefore a net change of \(-19,730\text{m}^3\) represents erosion since the earlier survey.
South West Regional Coastal Monitoring Programme

Annual Survey Report 2018

Beach Change Summary - Autumn 2017 to Autumn 2018

CISCAG - Isles of Scilly

Survey Unit Boundary

Actual Change in Cross-sectional Area (Autumn 2017 to Autumn 2018)

- Accretion
  - > 30 m²
  - 15 - 30 m²
  - 5 - 15 m²
  - Less than 5 m²

- No Change
  - Less than 5 m²
  - 5 - 15 m²
  - 15 - 30 m²
  - > 30 m²

Accretion Scale:

- > 30 m²
- 15 - 30 m²
- 5 - 15 m²
- Less than 5 m²

Erosion Scale:

- > 30 m²
- 15 - 30 m²
- 5 - 15 m²
- Less than 5 m²
Beach Change Summary - Autumn 2017 to Autumn 2018

% Change in Cross-sectional Area (Autumn 2017 to Autumn 2018)

Survey Unit Boundary

- No Change
- Accretion
- Erosion

- St Martin's
- Bryher
- Tresco
- St Mary's
- St Agnes
South West Regional Coastal Monitoring Programme

Beach Change Summary - Baseline 2007 to Autumn 2018

CISCAG - Isles of Scilly

Actual Change in Cross-sectional Area (Baseline 2007 to Autumn 2018)

Survey Unit Boundary

Accretion
- > 30 m²
- 15 - 30 m²
- 5 - 15 m²
- Less than 5 m²

No Change
- 5 - 15 m²
- 15 - 30 m²
- > 30 m²

Erosion
- < 5 m²
- 5 - 15 m²
- 15 - 30 m²
- > 30 m²

Survey Unit Boundary

St Martin's
Tresco
Bryher
St Mary's
St Agnes
% Change in Cross-sectional Area (Baseline 2007 to Autumn 2018)

Survey Unit Boundary

Accretion
No Change
Erosion

Bryher
Tresco
St Mary's
St Agnes
St Martin's

0 km
1.5 km
3 km
## Survey Unit

**Survey Unit** 6eA4-2  
**Local Name** The Bar, St Agnes

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>23/09/2017 to 13/09/2018</td>
<td>Since last autumn, there has been minimal change in cross-sectional area within the survey unit. Sediment has, however been eroded at the peak of the crest, especially on the southern face of the tombolo.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>26/09/2007 to 13/09/2018</td>
<td>Over the longer term, 11.2m² of material have been lost from profile 6e02217A, resulting in a 5% decrease in cross-sectional area. The tombolo has become steeper since 2007, with loss of material to seaward ends and deposition on the north facing side of the crest as well as the mid-section of the beach.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6e02217A</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e02217A</td>
<td>-2.7</td>
<td>-1</td>
<td>-11.2</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)
Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m
15 - 30 m
5 - 15 m
5 - 15 m
15 - 30 m
> 30 m
< 5 m

6e02217A (-1%)
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

- Survey Unit Boundary

Accretion:
- > 30 m
- 15 - 30 m
- 5 - 15 m
- 5 - 15 m
- 15 - 30 m
- > 30 m
- < 5 m

CISCAG: Isles of Scilly
Survey Unit | 6eA8-1
Local Name | Periglis, St Agnes

Survey Type | Dates Surveyed | Observations
--- | --- | ---
Autumn-Autumn | Beach Change | 23/09/2017 - 13/09/2018
Over the past year, very little change has been observed within the survey unit. A 2% decrease in cross-sectional area has taken place along profile 6e02289, along the mid-section of the beach, whilst minor sediment gains have affected the remaining profiles.

Baseline-Autumn | Beach Change | 26/09/2007 - 13/09/2018
Longer term, profile 6e02289 has experienced a loss of 11.9m² of material, mainly from the mid to lower beach, equating to a 4% decrease in cross-sectional area. The remaining profiles have shown very little change.

| Profile | Autumn to Autumn | Baseline to Autumn | Master Profile Level (m) |
| | CSA Diff (m²) | % Change | CSA Diff (m²) | % Change |
| 6e02289 | -6.3 | -2 | -11.9 | -4 | -2.21 |
| 6e02290 | 0.7 | 0 | 2.0 | 1 | -2.21 |
| 6e02291 | 1.7 | 1 | 1.2 | 0 | -2.21 |
| 6e02292 | 3.2 | 1 | -2.3 | -1 | -2.21 |
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

- Survey Unit Boundary

CISCAG: Isles of Scilly
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

- **Survey Unit Boundary**

- **Accretion**
  - > 30 m²
  - 15 - 30 m²
  - 5 - 15 m²
  - 5 - 15 m²
  - 15 - 30 m²
  - > 30 m²

- **Erosion**
  - < 5 m²

- **No Change**
  - 2

6eA8-1: Uncle Tom's Quay - Beach Change

CISCAG: Isles of Scilly

FLYMOUTH COASTAL OBSERVATORY
Aerial Photography from 2017
### Survey Unit

<table>
<thead>
<tr>
<th>Local Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porth Coose, St Agnes</td>
</tr>
</tbody>
</table>

| Survey Unit  | 6eA8-2 |

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td>Sept 2007 to Sept 2018</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e02295</td>
<td>0.1</td>
<td>0</td>
<td>-3.0</td>
</tr>
<tr>
<td>6e02296</td>
<td>2.7</td>
<td>1</td>
<td>4.1</td>
</tr>
<tr>
<td>6e02297</td>
<td>-6.2</td>
<td>-2</td>
<td>-4.5</td>
</tr>
</tbody>
</table>

Since last autumn, profile 6e02297 has lost 6.2m² of material, resulting in a loss of the back of the berm and a 2% decrease in cross-sectional area. Whilst very little change is observed along the remaining profiles, material has been gained on the upper section of profile 6e02296.

The longer term analysis shows minimal cross-sectional area changes at Porth Coose. Profile 6e02295 has experienced a 1% loss; however the profile shows an increase in sediment at the top of the beach due to the difficulties of surveying over boulders. 4.5m² of material has been lost from the back of the beach as well as the mid and lower sections of profile 6e02297, while very low levels of accretion are observed along the remaining profile (6e02296).
South West Regional Coastal Monitoring Programme

Annual Survey Report 2018

Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

Accretion | Erosion | No Change
---|---|---
> 30 m | > 30 m | > 30 m
15 - 30 m | 5 - 15 m | 5 - 15 m
5 - 15 m | 5 - 15 m | 5 - 15 m
< 5 m | < 5 m | < 5 m

6eA8-2: Porth Coose - Beach Change

CISCAG: Isles of Scilly
Very little change has affected the profiles over the past year. 1.4m² of cross-sectional change occurs on profile 6e02205, but it should be noted that this beach consists of large boulders, and this change is therefore unlikely to be a decrease in sediment but rather due to the difficulties of surveying rock.

Since the 2007 baseline, accretion has taken place along all profiles in Porth Killier, mainly on the upper beach. Profile 6e02205 has gained 6.3m² of material, equating to a 6% increase in cross-sectional area.

Profiles 6e02203 and 6e02205 do not reach mean low water springs; the lower limit of the master profile has therefore been placed accordingly.

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn Beach Change</td>
<td>23/09/2017 - 13/09/2018</td>
<td>Very little change has affected the profiles over the past year. 1.4m² of cross-sectional change occurs on profile 6e02205, but it should be noted that this beach consists of large boulders, and this change is therefore unlikely to be a decrease in sediment but rather due to the difficulties of surveying rock.</td>
</tr>
<tr>
<td>Baseline-Autumn Beach Change</td>
<td>26/09/2007 - 13/09/2018</td>
<td>Since the 2007 baseline, accretion has taken place along all profiles in Porth Killier, mainly on the upper beach. Profile 6e02205 has gained 6.3m² of material, equating to a 6% increase in cross-sectional area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e02203</td>
<td>0.0</td>
<td>0</td>
<td>2.0</td>
</tr>
<tr>
<td>6e02205</td>
<td>-1.4</td>
<td>-1</td>
<td>6.3</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m
15 - 30 m
5 - 15 m
5 - 15 m
15 - 30 m
> 30 m
< 5 m

6eA8-4: Porth Killer - Beach Change
CISCAG: Isles of Scilly
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

- Survey Unit Boundary

- No Change
- Erosion
- Accretion

- > 30 m
- 15 - 30 m
- < 5 m
- < 5 m
- 5 - 15 m
- 5 - 15 m
- > 30 m

6eA8-4: Porth Killer - Beach Change

CISCAG: Isles of Scilly
Since last autumn, there has been minimal change at Great Porth. Over the longer term, low level accretion has been experienced along profile 6e01794, at the top of the beach. Conversely a small amount of erosion occurs along the top of profile 6e01789A.

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6e01789A</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td></td>
<td>-4.3</td>
<td>-1</td>
<td>-2.5</td>
</tr>
<tr>
<td>6e01794</td>
<td>-3.5</td>
<td>-1</td>
<td>0.8</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

Accretion

Erosion

No Change

> 30 m²

15 - 30 m²

5 - 15 m²

< 5 m²

6eB1-1: Great Porth-Beach Change

CISCAG: Isles of Scilly
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m²
15 - 30 m²
5 - 15 m²
< 5 m²

6eB1-1: Great Porth-Beach Change
CISCAG: Isles of Scilly
### Survey Unit
6eB1-4 & 6eB1-5

### Local Name
Great & Little Popplestones, Bryher

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn Beach</td>
<td>22/09/2017 -</td>
<td>The short term trend is erosion for profiles 6e01817A and 6e01823. Both profiles experience a loss of material from the lower beach, whereas profile 6e01820 has remained stable.</td>
</tr>
<tr>
<td></td>
<td>12/09/2018</td>
<td></td>
</tr>
<tr>
<td>Baseline-Autumn Beach</td>
<td>26/09/2007 -</td>
<td>Since the 2007 baseline, a small amount of sediment has been lost from profile 6e01817A, with material lost from the upper beach. Conversely, accretion has taken place along the mid-section of profile 6e01823, resulting in a 3% increase in cross-sectional area. As with the year on year analysis, profile 6e01820 has remained stable.</td>
</tr>
<tr>
<td></td>
<td>12/09/2018</td>
<td></td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td>Sept 2007 to Sept 2018</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e01817A</td>
<td>-7.2</td>
<td>-3</td>
<td>-8.9</td>
</tr>
<tr>
<td>6e01820</td>
<td>0.5</td>
<td>0</td>
<td>-0.1</td>
</tr>
<tr>
<td>6e01823</td>
<td>-5.3</td>
<td>-2</td>
<td>6.5</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

Accretion  Erosion
> 30 m  15 - 30 m  5 - 15 m  5 - 15 m  15 - 30 m  > 30 m  < 5 m

6eB1-4 & 6eB1-5 Great & Little Popplestone, Bryher - Beach Change

CISCAG - Isles of Scilly
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

- Accretion
- No Change
- Erosion

Survey Unit Boundary

Aerial Photography from 2017

6eB1-4 & 6eB1-5 Great & Little Popplesstone, Bryher - Beach Change

CISCAG - Isles of Scilly
### Survey Unit
- **Survey Unit**: 6eB3-1
- **Local Name**: The Town, Bryher

### Survey Type

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>22/09/2017 - 12/09/2018</td>
<td>Both profiles have experienced relatively small changes. Profile 6e01739 has experienced material loss on the mid-section of beach.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>26/09/2007 - 12/09/2018</td>
<td>The longer term trend is for erosion to the north of the survey unit, where profile 6e01739 has lost just under 23m² of material since the 2007 baseline, mostly due to dune roll-back. Conversely, profile 6e01475A has experienced slight accretion, with a 1% increase in cross-sectional area.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e01739</td>
<td>-4.0</td>
<td>-1</td>
<td>-22.9</td>
</tr>
<tr>
<td>6e01745A</td>
<td>-4.9</td>
<td>-1</td>
<td>4.6</td>
</tr>
</tbody>
</table>
**South West Regional Coastal Monitoring Programme**

**Annual Survey Report 2018**

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**6eB3-1: The Town - Beach Change**

**CISCAG: Isles of Scilly**

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![Image of aerial photography from 2017 showing actual change in cross-sectional area (Spring 2017 to Spring 2018).](image-url)

- **Survey Unit Boundary**
- **Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018):**
  - Accretion
  - Erosion
  - No Change

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**FLYMOUTH COASTAL OBSERVATORY**

Aerial Photography from 2017

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**Survey Unit Boundary**

**Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018):**

- > 30 m
- 15 - 30 m
- 5 - 15 m
- 5 - 15 m
- 15 - 30 m
- > 30 m
- < 5 m
South West Regional Coastal Monitoring Programme

Annual Survey Report 2018

CISCAG: Isles of Scilly

6eB3-1: The Town Beach Change

Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
No Change
Erosion

> 30 m
15 - 30 m
5 - 15 m
5 - 15 m
15 - 30 m
> 30 m
< 5 m

FLYING COASTAL OBSERVATORY
Aerial Photography from 2017

0 60 120 m
### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td>Sept 2007-09 to Sept 2018</td>
<td>Level (m)</td>
</tr>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6e01753</td>
<td>-4.1</td>
<td>-1</td>
<td>2.0</td>
</tr>
</tbody>
</table>

The short term trend is for very low level erosion in Green Bay. Over the longer term, the profile has gained 2m² of material, resulting in an increase in the mid to lower section of the profile.
6e01753 (0%) 
South West Regional Coastal Monitoring Programme 
South West Regional Coastal Monitoring Programme 
6eB3-2: Green Bay - Beach Change 
CISCAG: Isles of Scilly 

Aerial Photography from 2017

Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m
15 - 30 m
5 - 15 m
5 - 15 m
15 - 30 m
> 30 m
< 5 m

0 80 160 m
### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td>Sept 2007 to Sept 2018</td>
<td></td>
</tr>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6e01770A</td>
<td>10.8</td>
<td>4</td>
<td>78.1</td>
</tr>
<tr>
<td>6e01774</td>
<td>-14.7</td>
<td>-8</td>
<td>-90.3</td>
</tr>
</tbody>
</table>

Over the short term, accretion has been experienced along the length of profile 6e01770A, to the east of Rushy Bay. Conversely, profile 6e01774 has lost 14.7m² of material, again, across the length of the profile.

Similar to last year’s analysis, the longer term trend is for acute erosion along profile 6e01774, with a loss of ~78m² of material. This is mainly due to dune front recession of over 20m in places. Conversely, a large amount of sediment has been deposited along the length of profile 6e01770A, resulting in a 33% increase in profile cross-sectional area.
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

- Survey Unit Boundary

- > 30 m
- 15 - 30 m
- 5 - 15 m
- < 5 m

6eB4: Rushy Bay - Beach Change

CISCAG: Isles of Scilly
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

- Survey Unit Boundary

Accretion
- > 30 m
- 15 - 30 m
- 5 - 15 m
- 5 - 15 m
- 15 - 30 m
- > 30 m
- < 5 m

Erosion
- 2 m
- 2 m
- 2 m
- 2 m
- 2 m

Survey Unit Boundary

6eB4: Rushy Bay - Beach Change
CISCAG: Isles of Scilly
### Survey Unit

<table>
<thead>
<tr>
<th>Local Name</th>
<th>Hugh Town, St Mary’s</th>
</tr>
</thead>
</table>

### Profile Cross-Sectional Area

#### Autumn to Autumn

<table>
<thead>
<tr>
<th>Profile</th>
<th>CSA Diff (m²)</th>
<th>% Change</th>
<th>CSA Diff (m²)</th>
<th>% Change</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6e02072</td>
<td>-0.5</td>
<td>0</td>
<td>0.9</td>
<td>1</td>
<td>-2.21</td>
</tr>
<tr>
<td>6e02076</td>
<td>0.7</td>
<td>0</td>
<td>0.8</td>
<td>0</td>
<td>-2.21</td>
</tr>
<tr>
<td>6e02080</td>
<td>1.3</td>
<td>1</td>
<td>-2.7</td>
<td>-2</td>
<td>-2.21</td>
</tr>
</tbody>
</table>

#### Baseline to Autumn

<table>
<thead>
<tr>
<th>Profile</th>
<th>CSA Diff (m²)</th>
<th>% Change</th>
<th>CSA Diff (m²)</th>
<th>% Change</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6e02072</td>
<td>-0.5</td>
<td>0</td>
<td>0.9</td>
<td>1</td>
<td>-2.21</td>
</tr>
<tr>
<td>6e02076</td>
<td>0.7</td>
<td>0</td>
<td>0.8</td>
<td>0</td>
<td>-2.21</td>
</tr>
<tr>
<td>6e02080</td>
<td>1.3</td>
<td>1</td>
<td>-2.7</td>
<td>-2</td>
<td>-2.21</td>
</tr>
</tbody>
</table>

#### Observations

- Since last autumn, profiles in Hugh Town have remained stable.
- The longer term trend is for erosion along profile 6e02080, which has experienced a 2% decrease in cross-sectional area, mainly from the mid to lower beach. A small trend for accretion is observed along the remaining profiles at Town Beach, with sediment being redistributed from the upper beach onto the lower beach along profile 6e02072.
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m²
15 - 30 m²
5 - 15 m²
5 - 15 m²
15 - 30 m²
> 30 m²
< 5 m

6eM1-3 & 6eM1-4: Hugh Town, St Mary's - Beach Change

CISCAG: Isles of Scilly
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m²
15 - 30 m²
5 - 15 m²
< 5 m²

Hugh Town, St Mary's - Beach Change

CISCAG: Isles of Scilly
### Survey Unit

<table>
<thead>
<tr>
<th>Local Name</th>
<th>Porth Mellon, St Mary’s</th>
</tr>
</thead>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td>Sept 2007 to Sept 2018</td>
<td>Level (m)</td>
</tr>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6e02084A</td>
<td>0.1</td>
<td>0</td>
<td>0.7</td>
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<tr>
<td>6e02086</td>
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<td>-6.4</td>
</tr>
<tr>
<td>6e02088</td>
<td>2.0</td>
<td>1</td>
<td>-6.2</td>
</tr>
</tbody>
</table>

The year on year trend is for minimal change for the majority of profiles at Porth Mellon. Profile 6e02088, to the north of the survey unit, gained 2m² of material from its upper section, but lost material on the top of the dune.

Over the longer term, profile 6e02084A has seen low level accretion on the upper beach and erosion from the lower beach. A trend for erosion is observed along the remaining profiles, with up to 6.2m² of material being lost; the majority from the lower section of profile 6e02088.

Comments

50 50
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

- Accretion
- No Change
- Erosion

Survey Unit Boundary

6eM2: Porth Mellon - Beach Change

CISCAG: Isles of Scilly
### Survey Unit

<table>
<thead>
<tr>
<th>Survey Unit</th>
<th>6eM3</th>
</tr>
</thead>
</table>

### Local Name

<table>
<thead>
<tr>
<th>Local Name</th>
<th>Thomas’ Porth, St Mary’s</th>
</tr>
</thead>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e02092</td>
<td>-1.8</td>
<td>-1</td>
<td>-1.0</td>
</tr>
</tbody>
</table>

### Observations

- **Autumn-Autumn Beach Change**
  
  - Dates Surveyed: 19/09/2017 - 14/09/2018
  
  - Minimal change has been observed along the profile since last autumn.

- **Baseline-Autumn Beach Change**
  
  - Dates Surveyed: 26/09/2007 - 14/09/2018
  
  - Similar to the year on year analysis, the longer term trend is for stability at Thomas’s Porth, although sediment redistribution has occurred; a lowering of the dune system, has taken place leading to a release of sediment to the top of the beach.

### Comments

- Minimal change has been observed along the profile since last autumn.
- Similar to the year on year analysis, the longer term trend is for stability at Thomas’s Porth, although sediment redistribution has occurred; a lowering of the dune system, has taken place leading to a release of sediment to the top of the beach.
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

Accretion
No Change
Erosion

> 30 m
15 - 30 m
5 - 15 m
5 - 15 m
15 - 30 m
> 30 m
< 5 m

6eM3: Thomas' Porth - Beach Change

CISCAG: Isles of Scilly
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
No Change
Erosion

> 30 m²
15 - 30 m²
5 - 15 m²
5 - 15 m²
15 - 30 m²
> 30 m²
< 5 m

6eM3: Thomas' Porth - Beach Change

CISCAG: Isles of Scilly
### Survey Unit

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>19/09/2017 - 14/09/2018</td>
<td>Over the short term, small cross-sectional area changes have occurred at Porth Loo. Small sediment gains have taken place on the upper beach for profiles 6e02100 and 6e02101, whilst material has been lost from the lower beach on profile 6e02098.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>26/09/2007 - 14/09/2018</td>
<td>Erosion has occurred for all of the profiles, with up to a 3% decrease in cross-sectional area.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e02098</td>
<td>-9.4</td>
<td>-3</td>
<td>-5.7</td>
</tr>
<tr>
<td>6e02100</td>
<td>3.6</td>
<td>1</td>
<td>-8.8</td>
</tr>
<tr>
<td>6e02101</td>
<td>7.8</td>
<td>3</td>
<td>-5.1</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m²
15 - 30 m²
5 - 15 m²
5 - 15 m²
15 - 30 m²
> 30 m²
< 5 m²

6e02101 (3%)
6e02100 (1%)
6e02098 (-3%)
South West Regional Coastal Monitoring Programme

Annual Survey Report 2018

Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

6eM4: Porth Loo - Beach Change

CISCAG: Isles of Scilly
Survey Unit: 6eM5
Local Name: Bar Point, St Mary’s

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>19/09/2017 - 14/09/2018</td>
<td>Since last autumn, a combination of accretion, no change and erosion has taken place at Bar Point. Profiles 6e01855 and 6e01856, to the west of the survey unit, have lost up to ~30 m² of material, resulting in a lowering of the bottom section of the beach. Conversely, a small amount of accretion has been observed along profile 6e01854 and 6e01857, with up to 19 m² of material being gained. To the east of the survey unit, profile 6e01859A has lost 10.8 m² of material, mostly from its top section.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>26/09/2007 - 14/09/2018</td>
<td>Similar to the year on year analysis, the longer term trend has displayed high level accretion along profiles 6e01855 and 6e01856, with a 52% and 48% increase in cross-sectional area respectively. Dune roll-back has, however, strongly affected profile 6e01855, where the dunes have receded by ~9 m. With the exception of profile 6e01859A, the remaining profiles have experienced erosion, with up to ~53 m² of sediment being lost along profile 6e01857.</td>
</tr>
</tbody>
</table>

**Profile Cross-Sectional Area**

<table>
<thead>
<tr>
<th>Profile</th>
<th>CSA Diff (m²)</th>
<th>% Change</th>
<th>CSA Diff (m²)</th>
<th>% Change</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td></td>
<td>Sept 2007 to Sept 2018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6e01854</td>
<td>12.6</td>
<td>2</td>
<td>-19.5</td>
<td>-3</td>
<td>-2.21</td>
</tr>
<tr>
<td>6e01855</td>
<td>-24.9</td>
<td>-4</td>
<td>52.0</td>
<td>10</td>
<td>-2.21</td>
</tr>
<tr>
<td>6e01856</td>
<td>-29.3</td>
<td>-7</td>
<td>48.0</td>
<td>15</td>
<td>-2.21</td>
</tr>
<tr>
<td>6e01857</td>
<td>19.0</td>
<td>6</td>
<td>-52.9</td>
<td>-14</td>
<td>-2.21</td>
</tr>
<tr>
<td>6e01858</td>
<td>1.8</td>
<td>0</td>
<td>3.8</td>
<td>1</td>
<td>-2.21</td>
</tr>
<tr>
<td>6e01859A</td>
<td>-10.8</td>
<td>-4</td>
<td>1.7</td>
<td>1</td>
<td>-2.21</td>
</tr>
</tbody>
</table>
**South West Regional Coastal Monitoring Programme**

Annual Survey Report 2018

**6eM5: Bar Point - Beach Change**

CISCAG: Isles of Scilly

**Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)**

- Survey Unit Boundary

- Accretion
- Erosion
- No Change

Aerial Photography from 2017
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m
15 - 30 m
5 - 15 m
5 - 15 m
15 - 30 m
> 30 m
< 5 m
### Survey Unit

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>Beach Change 23/09/2017 - 14/09/2018</td>
<td>Due to time constraints this profile was uncompleted, therefore the cross-sectional change is not a representative outcome. The landward section of the profile is completed and a small amount of material has been removed along the face of the cliff, (&lt;0.2m²).</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>Beach Change 26/09/2007 - 14/09/2018</td>
<td>Due to time constraints this profile was uncompleted, therefore the cross-sectional change is not a representative outcome. Since the baseline, the top half of the cliff face has eroded &lt;1m² whilst the top of the cliff has gained a small amount of material.</td>
</tr>
</tbody>
</table>

**Comments**

As the profile does not get to depth, the lower limit of the master profile has been placed accordingly.

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td>Sept 2007 to Sept 2018</td>
<td>Level (m)</td>
</tr>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6e01898A</td>
<td>-33.9</td>
<td>-37</td>
<td>-29.9</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

2
2
2
2
2
2
2

> 30 m
15 - 30 m
5 - 15 m
5 - 15 m
15 - 30 m
> 30 m
< 5 m

FLYBOURTH COASTAL OBSERVATORY
Aerial Photography from 2017

CISCO: Isles of Scilly

6eM6: Pelistry Bay - Beach Change
Since last autumn, little change has taken place in Porth Hellick. To the east and west of the survey unit, the profiles have decreased in their cross-sectional area by up to 2%, with sediment loss on the upper beach. Conversely, profile 6e01932 has gained 8.5m² of material, a cross-sectional area gain of 3%.

The longer term trend is for accretion for profiles 6e01932 and 6e01933, with the greatest changes observed to the west, where up to 11.5m² of material have been deposited, largely on the upper beach mainly.

As the profiles in Porth Hellick do not get to depth, the lower limits of the master profiles have been placed accordingly.
South West Regional Coastal Monitoring Programme

Annual Survey Report 2018

Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

Accretion Erosion

> 30 m
15 - 30 m
5 - 15 m
< 5 m

6eM7: Porth Hellick - Beach Change

FLYMOUTH COASTAL OBSERVATORY
Aerial Photography from 2017

CISCAG: Isles of Scilly
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change
### Survey Unit
6eM9

### Local Name
Porth Minick, St Mary’s

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>Beach Change 19/09/2017 - 14/09/2018</td>
<td>The short term trend is for very low level accretion at Porth Minick, where material has been gained on the lower and very upper beach.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>Beach Change 26/09/2007 - 14/09/2018</td>
<td>Longer term, 1.5m² of material have been lost from the profile, mainly from the upper and lower sections of the beach, although the profile has remained stable overall.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e01961</td>
<td>2.5</td>
<td>1</td>
<td>-1.5</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

- Survey Unit Boundary

- Actual Change in Cross-sectional Area
  - > 30 m²
  - 15 - 30 m²
  - 5 - 15 m²
  - > 30 m²
  - < 5 m²

- Accretion
- Erosion
- No Change

FLYMOUTH COASTAL OBSERVATORY
Aerial Photography from 2017

6eM9: Porth Minnick - Beach Change
CISCAG: Isles of Scilly
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

- > 30 m
- 15 - 30 m
- 5 - 15 m
- < 5 m

Accretion
No Change
Erosion

Aerial Photography from 2017
## Survey Unit

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>Beach Change 19/09/2017 - 14/09/2018</td>
<td>While stability has been observed over the short term, profile 6e01970 has displayed a trend for erosion, with 3.4 m² of material being lost along the mid-section of the profile.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>Beach Change 26/09/2007 - 14/09/2018</td>
<td>Longer term, Old Town Bay has remained stable with only minor sediment redistribution from the lower beach onto the upper beach.</td>
</tr>
</tbody>
</table>

## Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td>Sept 2007 to Sept 2018</td>
<td></td>
</tr>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6e01970</td>
<td>-3.4</td>
<td>-1</td>
<td>-2.8</td>
</tr>
<tr>
<td>6e01972</td>
<td>-0.9</td>
<td>0</td>
<td>-0.1</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

CISCAG: Isles of Scilly

FLYMOUTH COASTAL OBSERVATORY
Aerial Photography from 2017
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m²
15 - 30 m²
5 - 15 m²
5 - 15 m²
15 - 30 m²
> 30 m²
< 5 m²

FLYMOUTH COASTAL OBSERVATORY
Aerial Photography from 2017

CISCAG: Isles of Scilly

6eM12: Old Town - Beach Change
### Survey Unit 6eM15

**Local Name** Porth Cressa, St Mary’s

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn Beach</td>
<td>19/09/2017 - 14/09/2018</td>
<td>Over the short term, all profiles have remained stable.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>26/09/2007 - 14/09/2018</td>
<td>The longer term trend is for erosion towards the eastern end of Porth Cressa, with 17m² of material being lost from profile 6e02018A, equating to a 6% decrease in cross-sectional area. Accretion is observed along the remaining profiles, with up to a 3% increase in cross-sectional area along the mid-section of profile 6e02027.</td>
</tr>
</tbody>
</table>

**Profile Cross-Sectional Area**

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td>Sept 2007 to Sept 2018</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e02018A</td>
<td>-1.5</td>
<td>-1</td>
<td>-17.0</td>
</tr>
<tr>
<td>6e02023</td>
<td>1.8</td>
<td>1</td>
<td>3.9</td>
</tr>
<tr>
<td>6e02027</td>
<td>2.5</td>
<td>1</td>
<td>6.7</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion  Erosion
> 30 m  15 - 30 m
5 - 15 m  5 - 15 m
15 - 30 m
> 30 m
< 5 m

CISCAG: Isles of Scilly
### Survey Unit

**6eN1**

### Local Name

Tean Sound, St Martin’s

---

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>21/09/2017 - 11/09/2018</td>
<td>Since last autumn, profile 6e01501A, to the south of the survey unit, has experienced erosion from its middle section, with a 2% decrease in cross-sectional area. Material has also been lost from the upper and lower beach (profile 6e01504A), equating to a loss of 4.3m² of material.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>26/09/2007 - 11/09/2018</td>
<td>Similar to the year on year analysis, profile 6e01501A has displayed a trend for erosion over the longer term, with loss of the berm feature and a 4% decrease in cross-sectional area. Accretion along profile 6e01504A has resulted in an 8.6m² net sediment gain on the berm since the 2007 baseline.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e01501A</td>
<td>-6.3</td>
<td>-2</td>
<td>-13.0</td>
</tr>
<tr>
<td>6e01504A</td>
<td>-4.3</td>
<td>-2</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m²
15 - 30 m²
5 - 15 m²
< 5 m²
5 - 15 m²
15 - 30 m²
> 30 m²
< 5 m²

6e01504A (3%)
6e01501A (4%)

6eN1: Bab's Carn - Beach Change
CISCAG: Isles of Scilly
<table>
<thead>
<tr>
<th>Survey Unit</th>
<th>6eN2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Name</td>
<td>St Martin’s Bay, St Martin’s</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>Beach Change</td>
<td>Since last autumn, profile 6e01352 has gained 6m² of material and seen a redistribution of sediment from the upper beach to the lower. Conversely, low level erosion has taken place along profile 6e01343, where sediment has been lost against the dune front and from the middle section of the profile.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>Beach Change</td>
<td>As opposed to the year on year analysis, the longer term trend is for accretion for both profiles at St Martin’s Bay, with up to 11.5m² of material being deposited along the mid-lower sections of profile 6e01352. Changes on profile 6e01352, show material has been lost from the lower shore and gained along the upper section of the profile.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autumn to Autumn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sept 2017 to Sept 2018</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e01343</td>
<td>-12.4</td>
<td>-5</td>
<td>7.0</td>
</tr>
<tr>
<td>6e01352</td>
<td>6.0</td>
<td>2</td>
<td>11.5</td>
</tr>
</tbody>
</table>

Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td>Sept 2007 to Sept 2018</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e01343</td>
<td>-12.4</td>
<td>-5</td>
<td>7.0</td>
</tr>
<tr>
<td>6e01352</td>
<td>6.0</td>
<td>2</td>
<td>11.5</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

- Survey Unit Boundary

Accretion: > 30 m
- Erosion: < 5 m
- No Change: 5 - 15 m

Survey Units:
- 6e01343: (3%)
- 6e01352: (4%)

FLYING COASTAL OBSERVATORY
Aerial Photography from 2017

6eN2: St Martin's Bay - Beach Change

CISCAG: Isles of Scilly
**Survey Unit** 6eN3

**Local Name** Higher Town Bay, St Martin’s

---

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>21/09/2017 - 11/09/2018</td>
<td>The short term trend analysis shows minimal change across all profiles, with profile 6e01452 gaining a minimal amount of material across the mid-lower beach.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>26/09/2007 - 11/09/2018</td>
<td>Longer term, a trend for accretion is observed along profile 6e01455, with an overall sediment gain of 17.2 m², despite sediment being lost at the dune edge. Similarly, dune front erosion can be noticed along the neighbouring profile 6e01452. Sediment redistribution has taken place along profile 6e01446, with a small build-up of material at the dune front and on the very lower shore.</td>
</tr>
</tbody>
</table>

---

**Profile Cross-Sectional Area**

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e01446</td>
<td>-2.9</td>
<td>-1</td>
<td>-1.5</td>
</tr>
<tr>
<td>6e01452</td>
<td>5.1</td>
<td>2</td>
<td>3.1</td>
</tr>
<tr>
<td>6e01455</td>
<td>3.5</td>
<td>1</td>
<td>17.2</td>
</tr>
</tbody>
</table>
### Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

<table>
<thead>
<tr>
<th>Change in Cross-sectional Area</th>
<th>No Change</th>
<th>Erosion &lt; 5 m</th>
<th>Erosion 5 - 15 m</th>
<th>Erosion 15 - 30 m</th>
<th>Erosion &gt; 30 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 30 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 30 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 - 15 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 - 15 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 - 30 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 30 m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Survey Unit Boundary

**6eN3: Higher Town Bay - Beach Change**

**CISCAG: Isles of Scilly**
6eN3: Higher Town Bay - Beach Change

Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

CISCAG: Isles of Scilly
The short term trend is for accretion along all profiles, with gains of up to 10.3 m² of sediment on the western side of St Martin’s Flats. The remaining profiles have gained a small amount of material along the face of the beach, whilst the Flats have remained stable.

Over the longer term, profiles 6e01479 and 6e01494 have displayed a trend for accretion, with up to 26.4 m² of material being gained along the latter, mostly on the mid-upper shore. Conversely, a 12.6% decrease in cross-sectional area has occurred along profile 6e01498, with sediment loss from the dune face receding ~1m, the mid beach face and the bottom section of the profile. Profile 6e01489 has remained stable.
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

Aerial Photography from 2017

CISCAG: Isles of Scilly

6eN4: St Martin’s Flats - Beach Change
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion

Erosion

> 30 m
15 - 30 m
5 - 15 m
< 5 m
2
2
2
2
2

6eN4: St Martin's Flats - Beach Change

CISCAG: Isles of Scilly
Survey Unit: 6eT1 & 6eT7
Local Name: New Grimsby, Tresco

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>20/09/2017 - 10/09/2018</td>
<td>The short term trend for the profiles at New Grimsby is for low level sediment movement, which has mainly impacted the middle section of the beach. The greatest changes have been observed along profile 6e01650, which has gained 11.5m$^2$ of material along the mid-lower section of the profile.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>26/09/2007 - 10/09/2018</td>
<td>The longer term analysis has shown accretion along profile 6e01656, with 4.5m$^2$ of material being gained on the very upper and lower beach, equating to a 2% increase in cross-sectional area. Minimal change has taken place along profile 6e01662, whilst profile 6e01650 has undergone higher levels of accretion, gaining 6% in cross-sectional area along the mid and lower beach.</td>
</tr>
</tbody>
</table>

Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sept 2017 to Sept 2018</td>
<td>Sept 2007 to Sept 2018</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSA Diff (m$^2$)</td>
<td>% Change</td>
<td>CSA Diff (m$^2$)</td>
</tr>
<tr>
<td>6e01650</td>
<td>11.5</td>
<td>4</td>
<td>14.7</td>
</tr>
<tr>
<td>6e01656</td>
<td>-1.2</td>
<td>-1</td>
<td>4.5</td>
</tr>
<tr>
<td>6e01662</td>
<td>1.3</td>
<td>1</td>
<td>1.5</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

- **Accretion**
  - > 30 m²
  - 15 - 30 m²
  - 5 - 15 m²
  - < 5 m²

- **Erosion**
  - 5 - 15 m²
  - 15 - 30 m²
  - > 30 m²

- **No Change**

Aerial Photography from 2017

Survey Unit Boundary

6eT1 & 6eT7: New Grimsby, Tresco - Beach Change

CISCAG: Isles of Scilly
### Survey Unit
<table>
<thead>
<tr>
<th>Survey Unit</th>
<th>6eT3-2</th>
</tr>
</thead>
</table>

### Local Name
<table>
<thead>
<tr>
<th>Local Name</th>
<th>Old Grimsby, Tresco</th>
</tr>
</thead>
</table>

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### Survey Type
<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn Beach Change</td>
<td>23/09/2017 - 10/09/2018</td>
<td>The short term trend is for very low level accretion for the profiles at Old Grimsby, with sediment being redistributed from the upper to the lower beach along profile 6e01564.</td>
</tr>
</tbody>
</table>

| Baseline-Autumn Beach Change | 26/09/2007 - 10/09/2018 | Longer term, accretion has taken place along both profiles within the survey unit, with up to 23.3 m² of material being deposited across the length of profile 6e01564. The dune system here has receded ~2m, equating to a 7% increase in cross-sectional area caused by the redistribution of the sediment released along the profile. |

### Comments

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### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e01558</td>
<td>2.6</td>
<td>1</td>
<td>11.7</td>
</tr>
<tr>
<td>6e01564</td>
<td>1.7</td>
<td>0</td>
<td>23.3</td>
</tr>
</tbody>
</table>
6eT3-2: Old Grimsby - Beach Change

Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

6e01558 (1%) 6e01558 (0%)

Accretion Erosion
> 30 m 15 - 30 m 5 - 15 m 5 - 15 m 15 - 30 m > 30 m < 5 m

CISCAG: Isles of Scilly

Aerial Photography from 2017
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m
15 - 30 m
5 - 15 m
5 - 15 m
15 - 30 m
> 30 m
< 5 m

CISCAG: Isles of Scilly

6eT3-2: Old Grimsby - Beach Change

FLYMUOUTH COASTAL OBSERVATORY
Aerial Photography from 2017
### Survey Unit
6eT4

### Local Name
Borough Beach, Tresco

#### Survey Type
<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autumn-Autumn</td>
<td>23/09/2017 - 10/09/2018</td>
<td>The year on year analysis shows a predominant trend for accretion at Borough Beach, with the only exception being profile 6e01581A, to the south of the survey unit, which has lost 3m² of material across the main beach. The most significant level of accretion has been observed along profile 6e01571A, which has gained 40.6m² of material.</td>
</tr>
<tr>
<td>Baseline-Autumn</td>
<td>26/09/2007 - 10/09/2018</td>
<td>Over the longer term, the opposite trend to that of the year on year analysis is displayed, with the majority of the profiles within the survey unit following a trend for accretion. The greatest cross-sectional area changes have been noticed along profiles 6e01571A and 6e01573, which have both increased by 22%. Accretion has taken place on the upper beach along profile 6e01571A. Conversely, acute erosion has affected profile 6e01575A, where the dune front has progressively receded landwards since the 2007 baseline, by up to ~27m in places. This has resulted in an overall sediment loss of just under 93m³ for the profile, equating to a 20% decrease in cross-sectional area.</td>
</tr>
</tbody>
</table>

#### Comments

#### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------</td>
<td>--------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>6e01569A</td>
<td>1.8</td>
<td>1</td>
<td>30.6</td>
</tr>
<tr>
<td>6e01571A</td>
<td>40.6</td>
<td>7</td>
<td>108.3</td>
</tr>
<tr>
<td>6e01573</td>
<td>2.9</td>
<td>1</td>
<td>60.8</td>
</tr>
<tr>
<td>6e01575A</td>
<td>0.1</td>
<td>0</td>
<td>-92.8</td>
</tr>
<tr>
<td>6e01581A</td>
<td>-3.0</td>
<td>0</td>
<td>21.0</td>
</tr>
</tbody>
</table>
**Actual Change in Cross-sectional Area**
(Baseline 2007 to Spring 2018)

Accretion
- > 30 m$^2$
- 15 - 30 m$^2$
- 5 - 15 m$^2$
- < 5 m$^2$

Erosion
- < 5 m$^2$
- 5 - 15 m$^2$
- 15 - 30 m$^2$
- > 30 m$^2$

No Change

Survey Unit Boundary

Aerial Photography from 2017

*South West Regional Coastal Monitoring Programme*

*Annual Survey Report 2018*

*6eT4: Borough Beach - Beach Change*

*CISCAG: Isles of Scilly*
Since last autumn, a combination of erosion, no change and accretion has taken place at Pentle Beach. Sediment has been gained on the upper and lower beach along profiles 6e01593 and 6e01598, with the latter gaining 13.3 m² of material. Low level erosion has also been observed along profiles 6e01609, 6e01611 and 6e01616, with a 1% decrease in cross-sectional area along all three.

As opposed to the year on year analysis, the longer term trend shows more severe changes taking place on the south-eastern coast of Tresco. Profiles 6e01588, 6e01593 and 6e01611 have all displayed a loss of sediment, the latter losing just under 78 m² of material since 2007. Dune erosion and roll-back have impacted the majority of the profiles within the survey unit. Along profile 6e01611 in particular, the dune front has receded by >10 m in places since the 2007 baseline. Conversely, a 16% and 6% increase in cross-sectional area is observed along profiles 6e01598 and 6e01693 respectively, with the first gaining material across the main beach.

<table>
<thead>
<tr>
<th>Profile</th>
<th>Autumn to Autumn</th>
<th>Baseline to Autumn</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6e01588</td>
<td>0.7</td>
<td>0</td>
<td>-15.9</td>
</tr>
<tr>
<td>6e01593</td>
<td>9.7</td>
<td>3</td>
<td>21.1</td>
</tr>
<tr>
<td>6e01598</td>
<td>19.3</td>
<td>7</td>
<td>39.9</td>
</tr>
<tr>
<td>6e01607</td>
<td>3.1</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>6e01609</td>
<td>-2.8</td>
<td>-1</td>
<td>-20.8</td>
</tr>
<tr>
<td>6e01611</td>
<td>-3.5</td>
<td>-1</td>
<td>-77.5</td>
</tr>
<tr>
<td>6e01616</td>
<td>-3.0</td>
<td>-1</td>
<td>6.6</td>
</tr>
<tr>
<td>6e01618</td>
<td>8.0</td>
<td>3</td>
<td>-5.0</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

- **Accretion**
  - > 30 m² (6%)
  - 15 - 30 m² (16%)
  - 5 - 15 m² (3%)
  - < 5 m² (6%)
  - No Change (0%)

- **Erosion**
  - 15 - 30 m² (3%)
  - > 30 m² (9%)
  - 5 - 15 m² (23%)
  - < 5 m² (2%)

Survey Unit Boundary

Aerial Photography from 2017

**6eT5: Pentle Bay - Beach Change**

**CISCAG: Isles of Scilly**
The short term trend is for low level accretion for profile 6e01630, to the south of Appletree Bay, while erosion has affected the lower section of profile 6e01636, resulting in a 1% decrease in cross-sectional area.

Since the 2007 baseline, just under 41m² of material has been deposited along profile 6e01630, with a 16% increase in cross-sectional area. Conversely, the northern end of the Bay has experienced acute erosion, losing ~16.9m² of sediment, across the main beach and against the sea defence.
Actual Change in Cross-sectional Area (Spring 2017 to Spring 2018)

Survey Unit Boundary

Accretion

No Change

Erosion

> 30 m²

15 - 30 m²

5 - 15 m²

5 - 15 m²

15 - 30 m²

> 30 m²

< 5 m

CISCAG: Isles of Scilly

FLYMOUTH COASTAL OBSERVATORY

Aerial Photography from 2017

South West Regional Coastal Monitoring Programme

Annual Survey Report 2018
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2018)

Survey Unit Boundary

Accretion
Erosion
No Change

> 30 m
15 - 30 m
5 - 15 m
< 5 m

6e01630 (16%)
6e01636 (-12%)

6eT6: Appletree Bay - Beach Change

CISCAG: Isles of Scilly
Cross Sectional Area above MP Trend for Location: 6e01489 and Reference Profile Set

Area Above MP Trend: Accreting at 0.147 m²/year

Survey Date
04/12/2007 03/12/2008 03/12/2009 03/12/2010 03/12/2011 02/12/2012 02/12/2013 02/12/2014 02/12/2015 01/12/2016 01/12/2017
Area (m²) 800 750 700 650 600 550 500 450 400 350 300 250 200 150 100 50 0

- Recycling Event
- Area Above MP
- Area Trend
- Area Between MP & DP
Cross Sectional Area above MP Trend for Location: 6e01564 and Reference Profile Set.

Area Above MP Trend: Accreting at 2.137 m²/Year.
Cross Sectional Area above MP Trend for Location: 6e01630 and Reference Profile Set

Area Above MP Trend: Accreting at 3.655 m²/Year
Cross Sectional Area above MP Trend for Location: Ba01817A and Reference Profile Set

Area Above MP Trend: Eroding at -0.549 m²/year
Cross Sectional Area above MP Trend for Location: 6e01855 and Reference Profile Set.

Area Above MP Trend: Accreting at 5.935 m²/Year.
Cross Sectional Area above MP Trend for Location: 6e01856 and Reference Profile Set

Area Above MP Trend: Accreting at 5.745 m²/year

Survey Date

Area (m²)
04/12/2007 03/12/2006 03/12/2005 03/12/2010 03/12/2011 02/12/2012 02/12/2013 02/12/2014 02/12/2015 01/12/2016 01/12/2017

[Graph showing area over time with a trend line indicating accretion]

- Recycling Event
- Area Above MP
- Area Trend
- Area Between MP & DP
Cross Sectional Area above MP Trend for Location: 6e01933 and Reference Profile Set

Area Above MP Trend: Accreting at 0.404 m²/Year

Survey Date

Area (m²)

0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800

04/12/2007 03/12/2006 03/12/2009 03/12/2010 03/12/2011 02/12/2012 02/12/2013 02/12/2014 02/12/2015 01/12/2016 01/12/2017

Recycling Event Area Above MP Area Trend Area Between MP & DP
Cross Sectional Area above MP Trend for Location: Ba02084A and Reference Profile Set

Area Above MP Trend: Accrual at 0.001 m²/Year
Cross Sectional Area above MP Trend for Location: 6e02086 and Reference Profile Set

Area Above MP Trend, Eroding at -0.536 m²/Year

Survey Date

04/12/2007 03/12/2006 03/12/2009 03/12/2010 03/12/2011 02/12/2012 02/12/2013 02/12/2014 02/12/2015 01/12/2016 01/12/2017

Area (m²)

0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800

Recycling Event Area Above MP Area Trend Area Between MP & DP

SAINTS
Cross Sectional Area above MP Trend for Location: 6e02088 and Reference Profile Set

Area Above MP Trend: Eroding at -0.672 m²/Year

Survey Date

Area (m²)

0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800

04/12/2007 03/12/2006 03/12/2009 03/12/2010 03/12/2011 02/12/2012 02/12/2013 02/12/2014 02/12/2015 01/12/2016 01/12/2017

[Diagram showing trend of cross-sectional area above MP over survey dates]
Cross Sectional Area above MP Trend for Location: 6e02092 and Reference Profile Set

Area Above MP Trend: Eroding at -0.017 m²/Year

Survey Date

Area (m²)

0/12/2007 03/12/2008 03/12/2009 03/12/2010 02/12/2011 02/12/2012 02/12/2013 02/12/2014 02/12/2015 01/12/2016 01/12/2017

Recycling Event, Area Above MP, Area Trend, Area Between MP & DP