South West Regional Coastal Monitoring Programme

Annual Survey Report
Start Point to Lizard Point
2015

AR 49
September 2015
| Document Title | Annual Survey Report 2015  
Start Point to Lizard Point |
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<tr>
<td>Author</td>
<td>M Wiggins and J Kirby</td>
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<td>E A Siggery</td>
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Cross-sectional Area Charts* ...................................................... CD

* Presented on the CD accompanying printed copies of this report distributed by the Plymouth Coastal Observatory.
Summary

This report contains changes to beach and wave conditions from measurements recorded by the South West Regional Coastal Monitoring Programme. Comparisons are made from the last year and from the beginning of the Programme in 2007.

Over the last year the majority of survey units in this report have experienced changes in beach slope and in many cases have recovered significant percentages of the material lost during the large storms of 2013/14. Percentage change across the process cell is relatively small, with only a few profiles experiencing significant gains or losses.

Since 2007, actual change to profiles is mixed, with some areas gaining material over the longer term. Some sites have still not recovered all the material lost during the winter of 2013/14. Despite this, percentage change to profiles is relatively low across the entirety of the process cell.

The Repeat Baseline site 6d6D2-7 (Carlyon Bay) has gained 2.0% of beach volume in the last year and 3% since 2007.

Of the storms recorded by the Looe Bay Directional Waverider Buoy between April 2014 and March 2015, only one storm exceeded the 3.75m storm threshold, on 15th January 2015; several others came very close mainly during autumn.

The storm occurred close to High Water but on neap tides. The majority of waves were recorded coming from the south-west.
South West Regional Coastal Monitoring Programme

Annual Survey Report 2015 – Start Point to Lizard Point

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 took place during the spring of 2007 and changes are reported until spring 2015.

Data are presented at the following levels:

- **Process Cell**
  - Process cell summary of percentage and actual profile change from Spring 2014 to Spring 2015.
  - Process cell summary of percentage and actual profile change from Baseline 2007 to Spring 2015.

- **Survey Unit**
  - Detailed beach profile change from Spring 2014 to Spring 2015.
  - Detailed beach profile change from Baseline 2007 to Spring 2015.
  - Topographic difference model change from Repeat Baseline 2014 to Repeat Baseline 2015 (where available).
  - Topographic difference model change from Baseline 2007 to Repeat Baseline 2015 (where available).
  - Change in position of Mean High Water contour (where available).
  - Beach sediment distribution (where available).
  - Time series of beach profile graphs*.
  - Trend analysis of beach cross-sectional area*.

*Note that beach profile graphs and cross-sectional area charts are presented on the CD accompanying hard copies of this report distributed by the Plymouth Coastal Observatory.

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 1m² 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.

It must be emphasised that this is only the seventh report of a series and that changes identified are indicative only of relatively short-term trends.
Looe Bay Directional Waverider Buoy

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<th>Location</th>
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<td>WGS84</td>
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<td>Latitude: 50° 20.329' N</td>
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<tr>
<td>Longitude: 04° 24.717' W</td>
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<table>
<thead>
<tr>
<th>Instrument type</th>
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<td>Datawell Directional Waverider Mk III</td>
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<table>
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<tr>
<th>Water depth</th>
<th>Buoy in situ in Looe Bay. Photo courtesy of Fugro EMU Limited</th>
<th>Location of buoy (Google mapping)</th>
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**Summary**

During this reporting period from April 2014 to March 2015, only one storm exceeded the 3.75m storm threshold on 15 January 2015 although several others came very close mainly during autumn. The storm occurred close to High Water but on neap tides.

**Data Quality**

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<th>Sample interval</th>
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**Monthly Averages – 2014/15**

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<th>SST (°C)</th>
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*All times are GMT*
Storm Analysis

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<th>Date/Time</th>
<th>$H_s$ (m)</th>
<th>$T_p$ (s)</th>
<th>$T_z$ (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>
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Distribution plots

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

- Wave rose (percentage of occurrence of Direction vs. $H_s$) for all measured data
- Percentage of occurrence of $H_s$, $T_p$, $T_z$, and Direction from April 2014 to March 2015
- Monthly time series of $H_s$ (red line is 3.75 m storm threshold)
- Incidence of storms during the reporting period and for all previous years. Storm events are defined using the Peaks-over-Threshold method. The highest $H_s$ of each storm event is shown

General

The buoy was deployed on 22 June 2009, at which time the magnetic declination at the site was 3.2° west, changing by 0.15° east per year.

Acknowledgements

The shore station for the Waverider is kindly hosted by the Maritime & Coastguard Agency. Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.

* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Devonport). The surge shown is the residual at the time of the highest $H_s$. The maximum tidal surge is the largest surge during the storm event.
Offshore Wave Hs (m)
Looe Bay WB: 22/06/2009 - 31/03/2015
**Topographic Survey Record**

The table below gives the target and completion dates for topographic surveys between spring 2014 and the repeat baseline surveys of 2015.

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<th>Post-Storm</th>
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1. Surveyed outside of Spring Interim survey window.

For the most recent survey schedules for each survey unit please see
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
Baseline Data

As part of the Monitoring Programme specification, each survey unit receives a full topographic baseline survey once every five years. In addition, highly managed sites, or those with a beach management plan, receive an annual baseline survey. Baseline surveys include a full profile survey at 50m intervals and continuous spot height data collected at approximately 1m intervals across the whole beach to the level of MLWS. This continuous data also includes a feature code for each spot height data point recorded, indicating the surface sediment type.

Where there are at least two baseline surveys for a survey unit, a topographic difference model is produced based on the spot height elevations. The raw spot height data is processed into a grid model and successive models are subtracted from one another to produce a difference model for the survey unit. The spot height data from each survey can be used to derive Mean High Water (MHW) and Mean Low Water (MLW) contours along each survey unit. In some cases, where there is no topographic baseline data collected, the information described above may be derived from LiDAR data.

Process Cell

The Beach Change Summary maps contain an at-a-glance condition of the whole area between Start Point and Lizard Point, 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 six maps where applicable:

- Beach change map (Spring to Spring).
- Beach change map (Baseline to Spring).
- Topographic difference model map (2007 Baseline to 2015 Repeat Baseline).
- Topographic difference model map (2014 Repeat Baseline to 2015 Repeat Baseline).
- Mean High Water line.
- Sediment distribution maps.

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 Spring 2014 to Spring 2015 and from Baseline 2007 to Spring 2015.

Survey Schedules

Spring interim surveys are conducted between January and March each year. Baseline and repeat baseline surveys are carried out between April and August. A minimum of 8 weeks must elapse between successive surveys. The dates of individual surveys are given in the topographic survey record and with the analysis for each survey unit.
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 CSA\(_1\) = most recent spring survey and 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 Vol\(_1\) = most recent DTM model volume and Vol\(_2\) = earlier DTM model volume. Therefore a net change of −19,730m\(^3\) represents erosion since the earlier survey.
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

- Acretion
- No Change
- Erosion

<table>
<thead>
<tr>
<th>Actual Change in Cross-sectional Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 30 m²</td>
</tr>
<tr>
<td>15 - 30 m²</td>
</tr>
<tr>
<td>&lt; 15 m²</td>
</tr>
<tr>
<td>&gt; 30 m²</td>
</tr>
<tr>
<td>No Change</td>
</tr>
<tr>
<td>Erosion</td>
</tr>
</tbody>
</table>
Survey Unit: 6cSU28  
Local Name: Salcombe

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>02/01/2014 - 21/01/2015</td>
<td>Over the last year, profile 6c00256 has remained stable, whilst the two profiles on South Sands beach have shown a mixture of stability and low level erosion.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>19/05/2007 - 21/01/2015</td>
<td>Longer term, profile 6c00256 on North Sands beach has gained 32.5m², equating to 8% in cross-sectional area. Most gains have occurred at the top end of the beach profile. Profile 6c00265A has lost material at the middle and seaward extent of the profile.</td>
</tr>
</tbody>
</table>

**Profile Cross-Sectional Area**

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan 2014 to Jan 2015</td>
<td>May 2007 to Jan 2015</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6c00256</td>
<td>1.8</td>
<td>0</td>
<td>32.5</td>
</tr>
<tr>
<td>6c00264</td>
<td>2.2</td>
<td>1</td>
<td>11.6</td>
</tr>
<tr>
<td>6c00265A</td>
<td>-9.7</td>
<td>-3</td>
<td>-13.0</td>
</tr>
</tbody>
</table>
Over the last year, both profiles have lost a small amount of material. Profile 6c00472A has gained approximately 0.2m in height at the top of the profile, below the sea wall. The seaward end of the profile has lost a similar amount. Profile 6c00478A has seen a slight loss in overall cross-sectional area, however, the profile shape has shifted, with material being lost from the upper section and gained at the seaward end.

Over the longer term, both profiles have gained material, with profile 6c00472A gaining material along the upper and midsection of the profile. Profile 6c00478A has gained 57.7m² of material, an increase of 13% in cross-sectional area, mostly along the upper and lower section.
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

Accretion  Erosion

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

No Change
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

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

0 50 100 m

Aerial Photography from 2012

6cSU30-2 - Hope Cove - Beach Change

SDADCG - Devon
Over the short term, the two southern profiles have gained material, with large gains being seen at the lower and seaward end of both profile 6c00507 and 6c00509. In the central section of the survey unit, profile 6c00513 has lost 43.4 m$^2$ of material along the lower and seaward extent. The largest losses have occurred along profile 6c00517, with erosion taking 77.4 m$^2$, a change of -26% in cross-sectional area. These losses have occurred along the length of the profile, with an average drop in elevation of 1.1m. Profile 6c00524, in the northern bay, has remained stable.

Since 2007 profile 6c00507 has remained stable in terms of overall cross-sectional area, however the profile has changed shape dramatically, as has profile 6c00509. Both have experienced large amounts of dune recession, with material being gained at the seaward extent of the profile to balance the sediment loss. The remaining profiles have all lost significant amounts of material since the original baseline, including 10m of dune recession along profile 6c00524.

Large losses have been observed at the back of the beach across the survey unit, with erosion and dune recession occurring as a result of the storms during the winter of 2013/14. *Profile 6c00526 was added in August 2014, a baseline to spring comparison can be made using data from the 2007 baseline survey. A spring to spring comparison will not occur until data is collected in Spring 2016.
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

0 150 300 m

Aerial Photography from 2012

SDADCAG - Devon

South West Regional Coastal Monitoring Programme
Annual Survey Report 2015
Over the last year, profile 6c00574 has remained stable, however sediment has been moved from the middle section of the profile and been deposited at the seaward extent. Profile 6c00577 has gained 131.3m² in cross-sectional area, with a flatter low tide terrace filling in previous runnels in the lower section of the beach.

Since 2007, both profiles have gained material. Profile 6c00574 has seen an increase in material at the top and lower section of the profile, whilst profile 6c00577 has gained material across the last 500m of the low tide terrace.

### Survey Unit

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>28/02/2014 - 19/03/2015</td>
<td>Over the last year, profile 6c00574 has remained stable, however sediment has been moved from the middle section of the profile and been deposited at the seaward extent. Profile 6c00577 has gained 131.3m² in cross-sectional area, with a flatter low tide terrace filling in previous runnels in the lower section of the beach.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>29/08/2007 - 19/03/2015</td>
<td>Since 2007, both profiles have gained material. Profile 6c00574 has seen an increase in material at the top and lower section of the profile, whilst profile 6c00577 has gained material across the last 500m of the low tide terrace.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</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>6c00574</td>
<td>4.0</td>
<td>1</td>
<td>73.4</td>
</tr>
<tr>
<td>6c00577</td>
<td>131.3</td>
<td>14</td>
<td>173.5</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

Accretion

No Change

Erosion

Aerial Photography from 2012
South West Regional Coastal Monitoring Programme

Annual Survey Report 2015

SDADCAG - Devon

6cSU31-1 - Bantham - Beach Change

Aerial Photography from 2012

Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
Erosion
No Change

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

6c00577 (20%)
6c00574 (11%)
In the short-term all profiles have lost a small percentage of cross-sectional area, with the exception of profile 6c00592, which has gained 130.4m² along the upper and lower end of the profile. Profile 6c00603A lies across the bar from Burgh Island to Bigbury and has gained material at the crest, despite losing material overall along both sides.

Over the longer term, profile 6c00592 has gained 102.3m², an increase of 24% in cross-sectional area. The two central profiles, including 6c00603A, have remained stable overall, with a shift of material and slight migration of the bar by 20m plan distance. The shorter profile with in the pocket beach to the west has gained material at the back of the beach, as well as the lower section of the profile towards the seaward end.
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Erosion

Accretion

No Change

> 30 m²

15 - 30 m²

5 - 15 m²

< 5 m²

15 - 30 m²

> 30 m²

Aerial Photography from 2012

0 150 300 m
Survey Unit: 6cSU31-3
Local Name: Challaborough

Survey Type | Dates Surveyed | Observations
--- | --- | ---
Spring - Spring | Beach Change 03/02/2014 - 20/03/2015 | In the short-term profile 6c00619 has lost a very small amount of material overall, however the profile has changed shape over the last year. Material has moved from the lower section of the profile, becoming steeper towards the seaward extent, whilst the upper portion of the profile has gained material.
Baseline - Spring | Beach Change 01/09/2007 - 20/03/2015 | Since the original baseline survey, 6c00619 has gained 13% of its cross-sectional area, with material being distributed across the main section of the profile.

Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</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>6c00619</td>
<td>-6.5</td>
<td>-2</td>
<td>41.8</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

Aerial Photography from 2012
## Survey Unit

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>30/01/2014 - 22/01/2015</td>
<td>Over the last year, the profile has lost 8% of its cross-sectional area, with a steepening of the upper beach face and a reduction of material below the toe of the beach.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>14/06/2007 - 22/01/2015</td>
<td>The profile has gained 4% in cross-sectional area since the baseline survey in 2007. The majority of material has been gained at the seaward extent of the profile.</td>
</tr>
</tbody>
</table>

## Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan 2014 to Jan 2015</td>
<td>Jun 2007 to Jan 2015</td>
<td></td>
</tr>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6c00992</td>
<td>-29.3</td>
<td>-8</td>
<td>12.1</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

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

6cSU33 - Wembury - Beach Change

Aerial Photography from 2012

South West Regional Coastal Monitoring Programme

Annual Survey Report 2015
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion

Erosion

No Change

Aerial Photography from 2012
### Survey Unit

<table>
<thead>
<tr>
<th>Survey Unit</th>
<th>6cSU38</th>
</tr>
</thead>
</table>

### Local Name

<table>
<thead>
<tr>
<th>Local Name</th>
<th>Kingsand Cawsand</th>
</tr>
</thead>
</table>

### Survey Type

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>03/01/2014 - 22/01/2015</td>
<td>Since last year, all profiles have remained stable with very little change in overall profile area.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>15/06/2007 - 23/01/2015</td>
<td>In the longer term, all profiles have gained a small amount of material, with profile 6c01304A gaining 11.3m² across the whole length of the profile.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan 2014 to Jan 2015</td>
<td>Jun 2007 to Jan 2015</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6c01297</td>
<td>2.2</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>6c01299</td>
<td>1.9</td>
<td>2</td>
<td>6.5</td>
</tr>
<tr>
<td>6c01304</td>
<td>-0.6</td>
<td>0</td>
<td>3.0</td>
</tr>
<tr>
<td>6c01304A</td>
<td>-0.3</td>
<td>0</td>
<td>11.3</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

Accretion  No Change  Erosion

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

2 2 2 2 2 42
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

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

Aerial Photography from 2012

0 100 200 m
**Survey Unit**: 6d6D1-4  
**Local Name**: Seaton Downderry

### Survey Type: Spring - Spring Beach Change
- Dates Surveyed: 03/01/2014 - 22/01/2015
- Observations:
  - Since last year, the majority of profiles have shown very little percentage change in cross-sectional area. The profiles in the eastern section of the survey unit have all shown less than 5% change overall. In front of the main beach at Seaton, profile 6d00314 has gained 13% in cross-sectional area, with the majority of material gained along the lower section of the beach. Despite showing no significant change in overall beach area, profile 6d00318 has experienced a change in profile shape. Material has accreted at the top of the beach in front of the sea defence, whilst material was lost at the bottom developing a distinct beach toe. Profile 6d00323 has lost a significant amount of material along the upper section of the profile, a total loss of 38.2m², equating to 9% in cross-sectional area.

### Survey Type: Baseline - Spring Beach Change
- Dates Surveyed: 15/06/2007 - 23/01/2015
- Observations:
  - Over the longer term, the eastern profiles at Downderry have shown little change in percentage cross-sectional area since 2008. Profile 6d00301 has lost 12% in cross-sectional area, equating to 39.8m² of lost material. The majority of profiles which have lost material have done so at the bottom of the profile towards the seaward extent. Profile 6d00301 has lost 12% of its cross-sectional area, with a large loss of material from the bottom of the profile, with rocks being exposed which were previously covered in sand.

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</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>6d00278*</td>
<td>-3.4</td>
<td>-2</td>
<td>1.9</td>
</tr>
<tr>
<td>6d00282*</td>
<td>-1.4</td>
<td>0</td>
<td>-7.0</td>
</tr>
<tr>
<td>6d00286*</td>
<td>10.3</td>
<td>2</td>
<td>15.8</td>
</tr>
<tr>
<td>6d00290*</td>
<td>13.9</td>
<td>3</td>
<td>15.8</td>
</tr>
<tr>
<td>6d00296</td>
<td>-1.4</td>
<td>-1</td>
<td>-7.5</td>
</tr>
<tr>
<td>6d00298</td>
<td>-4.8</td>
<td>-2</td>
<td>-7.2</td>
</tr>
<tr>
<td>6d00301</td>
<td>1.3</td>
<td>0</td>
<td>-39.8</td>
</tr>
<tr>
<td>6d00306</td>
<td>1.3</td>
<td>1</td>
<td>8.2</td>
</tr>
<tr>
<td>6d00310</td>
<td>5.4</td>
<td>3</td>
<td>3.9</td>
</tr>
<tr>
<td>6d00314</td>
<td>21.9</td>
<td>13</td>
<td>-13.6</td>
</tr>
<tr>
<td>6d00318</td>
<td>5.5</td>
<td>1</td>
<td>-10.1</td>
</tr>
<tr>
<td>6d00323</td>
<td>-38.2</td>
<td>-9</td>
<td>12.2</td>
</tr>
</tbody>
</table>

*Profiles 6d00278 to 6d00290 were added to the programme at the beginning of phase two. LiDAR data from February 2008 was used to provide profile data for longer term baseline comparison.*
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

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

Erosion:
< 5 m

No Change

Aerial Photography from 2012

0 200 400 m
Actual Change in Cross-sectional Area
(Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
Erosion
No Change

Aerial Photography from 2012

m

0 200 400

6d6D1-4 - Seaton and Downderry - Beach Change
CISCAG - Cornwall
### Observations

Since last year, profile 6d00396 has gained 55.8 m$^2$ of material, equating to 18% of its cross-sectional area. The majority of the material has been gained along the lower section of the beach. Most profiles have remained stable, although profile 6d00427 has gained 16.6 m$^2$ of material, with an increased berm at the top of the beach, but a lowering of beach height at the seaward extent of the profile.

Since the original baseline survey in 2007, almost all profiles have gained material, with significant increases in cross-sectional area along profiles 6d00396, 6d00414 and 6d00427.

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m$^2$)</td>
<td>% Change</td>
<td>CSA Diff (m$^2$)</td>
</tr>
<tr>
<td>6d00396</td>
<td>55.8</td>
<td>18</td>
<td>17.1</td>
</tr>
<tr>
<td>6d00402</td>
<td>-5.6</td>
<td>-3</td>
<td>4.7</td>
</tr>
<tr>
<td>6d00410</td>
<td>-1.9</td>
<td>-2</td>
<td>-4.1</td>
</tr>
<tr>
<td>6d00414</td>
<td>2.8</td>
<td>2</td>
<td>17.3</td>
</tr>
<tr>
<td>6d00425</td>
<td>-14.6</td>
<td>-6</td>
<td>9.6</td>
</tr>
<tr>
<td>6d00427</td>
<td>16.6</td>
<td>4</td>
<td>27.5</td>
</tr>
<tr>
<td>6d00429</td>
<td>-1.1</td>
<td>0</td>
<td>12.6</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

Accretion

No Change

Erosion

Aerial Photography from 2012

0 200 400 m

6d6D1-6 - Looe - Beach Change

CISCAG - Cornwall
Actual Change in Cross-sectional Area
(Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

Aerial Photography from 2012

0 200 400 m

6d6D1-6 - Looe - Beach Change

CISCAG - Cornwall
### Annual Survey Report  
**Start Point to Lizard Point 2015**

#### Survey Unit: 6d6D1-8  
**Local Name:** Talland Bay

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>Beach Change</td>
<td><strong>03/03/2014 - 23/03/2015</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over the last year both profiles have gained material along their lower ends.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>Beach Change</td>
<td><strong>21/03/2007 - 23/03/2015</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Longer term, profile 6d00527 has lost 6% in cross-sectional area, with material being lost in the lower and middle section of the profile. Despite a slight change in the profile shape, 6d00528 has remained stable.</td>
</tr>
</tbody>
</table>

#### Comments

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</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>6d00527</td>
<td>29.9</td>
<td>12</td>
<td>-17.1</td>
</tr>
<tr>
<td>6d00528</td>
<td>19.0</td>
<td>7</td>
<td>-1.3</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

- No Change
- Accretion
- Erosion

Survey Unit Boundary

Aerial Photograpy from 2012

0 50 100 m

6d6D1-8 Talland Bay - Beach Change

CISCAG - Cornwall
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

Aerial Photography from 2012

0 50 100 m

6d6D1-8 Talland Bay - Beach Change CISCAG - Cornwall
### Survey Unit

<table>
<thead>
<tr>
<th>Survey Unit</th>
<th>6d6D2-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Name</td>
<td>Par Sands</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>02/01/2014 - 01/02/2015</td>
<td>Since last year all profiles have gained material, with profile 6d00952 gaining 104.5m² in cross-sectional area.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>20/03/2007 - 01/02/2015</td>
<td>Longer term, the two easterly profiles have lost a significant amount of material, with profile 6d00956 losing 16% in cross-sectional area. The two westerly profiles have both gained material at the upper and lower end of the profiles.</td>
</tr>
</tbody>
</table>

---

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</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>6d00952</td>
<td>104.5</td>
<td>7</td>
<td>44</td>
</tr>
<tr>
<td>6d00956</td>
<td>85.5</td>
<td>7</td>
<td>-0.3</td>
</tr>
<tr>
<td>6d00960</td>
<td>45.5</td>
<td>4</td>
<td>76.4</td>
</tr>
<tr>
<td>6d00965</td>
<td>42.8</td>
<td>4</td>
<td>92.2</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

Aerial Photography from 2012
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

- Accretion
- No Change
- Erosion

Aerial Photography from 2012

0 200 400 m
### Survey Unit

**6d6D2-7**

### Local Name

**Carlyon Bay**

### Survey Type

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>Beach Change</td>
<td>Over the last year, the eastern profiles have shown a small amount of erosion, mainly along the lower section of the profiles. Profile 6d01018 has gained a large amount, but due to the short length of the profile, this equates to a very large increase in cross-sectional area.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>Beach Change</td>
<td>Longer term, most profiles have gained material, with only profile 6d01026 experiencing erosion. A loss of 78.2 m² of material has been observed along this profile since 2007, equating to a percentage change in cross-sectional area of -41%. Similar to the year on year analysis, the profile length along 6d01018 is relatively small, at just over 50m. This accounts for a large increase in percentage change, particularly following the ongoing works at this location.</td>
</tr>
<tr>
<td>Spring - Spring</td>
<td>Topographic Difference</td>
<td>The last year has seen an even distribution of accretion in the west of the survey unit, with a small band of erosion occurring in the east. The middle section of the survey unit has seen a large amount of change, with material lost to the west of the river course and material gained to the east, possibly due to the change in the river dynamics.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>Topographic Difference</td>
<td>Since the original baseline the survey unit has experienced significant change in relation to building and construction works. The model extent only goes as far back as the original pilings which separated the beach from building works. Erosion is seen along the length of these but is due to the shift in profile shape as the works were carried out. Material in the far west of the model has been lost, possibly through natural processes. Accretion is distributed evenly through the central and eastern section of the survey unit.</td>
</tr>
</tbody>
</table>

### Net sediment balance above MLWS

**Spring - Spring**

- **Change**

  15/07/2014 - 09/04/2015

  - Net sediment balance above MLWS: +8,505 m³
  - Net sediment change: +2%

**Baseline - Spring**

- **Change**

  18/03/2007 - 09/04/2015

  - Net sediment balance above MLWS: +7,203 m³
  - Net sediment change: +3%

### Comments

Significant works have been carried out at this location over the last few years and as such profiles have changed in shape and length significantly. It is advised that the profile charts are consulted before making any further decisions based on these analyses.

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</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>6d01006</td>
<td>-19.9</td>
<td>-5</td>
<td>21.2</td>
</tr>
<tr>
<td>6d01010</td>
<td>4.7</td>
<td>1</td>
<td>16.6</td>
</tr>
<tr>
<td>6d01014</td>
<td>-14.8</td>
<td>-10</td>
<td>17.5</td>
</tr>
<tr>
<td>6d01018</td>
<td>58.4</td>
<td>162</td>
<td>50.1</td>
</tr>
<tr>
<td>6d01022</td>
<td>14.9</td>
<td>24</td>
<td>-1.7</td>
</tr>
<tr>
<td>6d01026</td>
<td>13.7</td>
<td>14</td>
<td>-78.2</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion

Erosion

No Change

Aerial Photography from 2012

0 100 200 m

6d6D2-7 - Carlyon Bay - Beach Change

CISCAG - Cornwall
Change in Elevation (m) Between July 2014 and April 2015

Model Extent

Change in Elevation (m)

Erosion
No Change
Accretion

<= -3
-3 - -2.5
-2.5 - -2
-2 - -1.5
-1.5 - -1
-1 - -0.5
-0.5 - 0
0 - 0.25
0.25 - 0.5
0.5 - 0.75
0.75 - 1
1 - 1.5
1.5 - 2
2 - 2.5
2.5 - 3
3 -

Aerial Photography from 2012
0 100 200 m
Change in Elevation (m) Between March 2007 and April 2015

<table>
<thead>
<tr>
<th>Change in Elevation (m)</th>
<th>Model Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>EROSION</td>
<td></td>
</tr>
<tr>
<td>0.25 - 0.5</td>
<td></td>
</tr>
<tr>
<td>0.5 - 1</td>
<td></td>
</tr>
<tr>
<td>1 - 1.5</td>
<td></td>
</tr>
<tr>
<td>1.5 - 2</td>
<td></td>
</tr>
<tr>
<td>2 - 2.5</td>
<td></td>
</tr>
<tr>
<td>2.5 - 3</td>
<td></td>
</tr>
<tr>
<td>3 -</td>
<td></td>
</tr>
<tr>
<td>NO CHANGE</td>
<td></td>
</tr>
<tr>
<td>-0.5 - -0.25</td>
<td></td>
</tr>
<tr>
<td>-1 - -0.5</td>
<td></td>
</tr>
<tr>
<td>-1.5 - -1</td>
<td></td>
</tr>
<tr>
<td>-2 - -1.5</td>
<td></td>
</tr>
<tr>
<td>-2.5 - -2</td>
<td></td>
</tr>
<tr>
<td>-3 -</td>
<td></td>
</tr>
<tr>
<td>ACCRETION</td>
<td></td>
</tr>
</tbody>
</table>

Aerial Photography from 2012

0  100  200 m
### Survey Unit

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>Beach Change</td>
<td>Over the last year, all profiles have gained a small amount of material. Profiles 6d01221 and 6d01225 have gained the most, with a 4% and 5% increase in cross-sectional area respectively.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>Beach Change</td>
<td>Over the longer term, profile 6d01219 has lost 2% in cross-sectional area. The western profiles have also lost material. Profile 6d01221 has gained a significant amount of material, with a distinct increase in the height of the two beach berms, with the upper possibly caused by the dynamics of the river that runs out onto the beach.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feb 2014 to Apr 2015</td>
<td>Mar 2007 to Apr 2015</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>6d01219</td>
<td>6.4</td>
<td>2</td>
<td>-6.8</td>
</tr>
<tr>
<td>6d01221</td>
<td>18.8</td>
<td>4</td>
<td>69.1</td>
</tr>
<tr>
<td>6d01225</td>
<td>27.7</td>
<td>5</td>
<td>4.2</td>
</tr>
<tr>
<td>6d01229</td>
<td>9.1</td>
<td>2</td>
<td>-18.4</td>
</tr>
<tr>
<td>6d01233</td>
<td>10.0</td>
<td>2</td>
<td>-28.9</td>
</tr>
</tbody>
</table>
### Survey Unit

<table>
<thead>
<tr>
<th>Survey Unit</th>
<th>6d6D2-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Name</td>
<td>Portmellon Beach</td>
</tr>
</tbody>
</table>

### Survey Type

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>04/02/2014 - 03/02/2015</td>
<td>In the last year, the profile has gained material along the very upper and middle section of the beach.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>21/03/2007 - 03/02/2015</td>
<td>Over the longer term, the profile has gained material equating to a 4% change in cross-sectional area.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</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>6d01291</td>
<td>13.2</td>
<td>9</td>
<td>6.8</td>
</tr>
</tbody>
</table>

### Comments

None provided.
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

- Survey Unit Boundary

- Accretion
- No Change
- Erosion

Aerial Photograhpy from 2013

0 30 60 m
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

- < 5 m²: Accretion
- 5 - 15 m²: No Change
- 15 - 30 m²: Erosion
- > 30 m²: Erosion

Aerial Photography from 2012

0 30 60 m
### Survey Unit
6d6D2-17

### Local Name
Gorran Haven

---

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>Beach Change 15/02/2014 - 03/02/2015</td>
<td>Since last year, profile 6d01374 has gained 34.2m² of material, with a large increase towards the top of the profile, defined berm and steepening of the beach slope. Profile 6d01377 has remained stable, with a slight increase at the top of the profile, and a steepening of the profile at the low tide end.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>Beach Change 22/03/2007 - 03/02/2015</td>
<td>Similar trends are observed over the longer term, with profile 6d01374 gaining 12% in cross-sectional area. Profile 6d01377 has gained a small amount of material across the length of the profile.</td>
</tr>
</tbody>
</table>

### Comments
LiDAR data from January 2008 was used to provide a baseline comparison for profile 6d01374.

---

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring Feb 2014 to Feb 2015</th>
<th>Baseline to Spring Mar 2007 to Feb 2015</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6d01374</td>
<td>34.2</td>
<td>11</td>
<td>37.0</td>
</tr>
<tr>
<td>6d01377</td>
<td>3.0</td>
<td>1</td>
<td>7.5</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

6d01374 (11%)

6d01377 (1%)

Accretion
No Change
Erosion

Aerial Photography from 2012

0 50 100 m
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

<table>
<thead>
<tr>
<th>Actual Change</th>
<th>0 - 5 m²</th>
<th>5 - 15 m²</th>
<th>15 - 30 m²</th>
<th>&gt; 30 m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accretion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LiDAR data used from Jan 2008 for baseline comparison with profile 6d01374.
### Survey Unit
6d6D3-2

### Local Name
Hemmick Beach

---

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>03/02/2014 - 06/02/2015</td>
<td>Since last year the profile has gained 7% in cross-sectional area, with gains occurring at the top of the profile and a steeping of the beach slope.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>23/03/2007 - 06/02/2015</td>
<td>Longer term trends are similar to those of the last year, with the profile gaining material at the top of the beach.</td>
</tr>
</tbody>
</table>

---

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feb 2014 to Feb 2015</td>
<td>Mar 2007 to Feb 2015</td>
<td></td>
</tr>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6d01477</td>
<td>25.4</td>
<td>7</td>
<td>16.9</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

- Survey Unit Boundary

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

Aerial Photography from 2012
Actual Change in Cross-sectional Area
(Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

Aerial Photography from 2012

0 50 100 m
Since 2014, profile 6d01526 has gained 20% in cross-sectional area, gaining 93.8 m². The profile has gained material along its entire length, with almost a metre gain in material along the lower tide section. Profile 6d01528 has remained relatively stable, however material has been gained at the top of the profile against the seawall, equating to a 0.75 m increase in beach height. The lower tide berm has shifted seawards and covered some of the previously exposed rocks.

Similar to the year on year analysis, profile 6d01526 has gained 50.4 m² of material, predominantly at the top and bottom of the beach. Since 2007, profile 6d01528 has lost 3% in cross-sectional area, with a loss of material at the top end of the profile, as well as the central and lower sections.

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</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>6d01526</td>
<td>93.8</td>
<td>20</td>
<td>50.4</td>
</tr>
<tr>
<td>6d01528</td>
<td>2.4</td>
<td>1</td>
<td>-12.0</td>
</tr>
</tbody>
</table>
### Survey Unit

<table>
<thead>
<tr>
<th>Survey Unit</th>
<th>6d6D3-6</th>
</tr>
</thead>
</table>

### Local Name

<table>
<thead>
<tr>
<th>Local Name</th>
<th>Portholland</th>
</tr>
</thead>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</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>6d01556</td>
<td>-27.7</td>
<td>-13</td>
<td>-57.0</td>
</tr>
<tr>
<td>6d01561</td>
<td>7.1</td>
<td>4</td>
<td>-10.2</td>
</tr>
</tbody>
</table>

In the last year, profile 6d01556 has lost 13% of its cross-sectional area, with a lowering of the beach along the mid and low tide section. Profile 6d01561 has gained a small amount of material, with a steeping of the profile towards the upper section.

Since the original baseline, profile 6d01556 has lost 57m² of material, with a lowering along the majority of the profile length. Profile 6d01561 has lost a small amount over the longer term.
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

6d01556 (-24%)
6d01561 (-5%)
6d01556 (24%)
5 - 15 m
5 - 15 m
> 30 m
15 - 30 m
> 30 m
< 5 m

CISCAG - Cornwall
Aerial Photography from 2012

Plymouth Coastal Observatory

An annual survey report from the South West Regional Coastal Monitoring Programme.
### Survey Unit

<table>
<thead>
<tr>
<th>Survey Unit</th>
<th>6d6D3-10</th>
</tr>
</thead>
</table>

### Local Name

<table>
<thead>
<tr>
<th>Local Name</th>
<th>Carne Beach</th>
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</table>

### Survey Type

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>30/01/2014 - 04/03/2015</td>
<td>Over the last year, the beach has experienced change along the two profiles in the east and west of the survey unit. The two central profiles have experienced no net gain or loss of sediment. The shape of the two central profiles has changed, with a steepening of the beach slope and material shifting towards the landward end of the profile. Profiles 6d01734 and 6d01738 have gained material along the majority of the profile, with the largest gains occurring at the landward end of the profile. Profile 6d01750 is the only profile to lose material, with a loss of 9% in cross-sectional area, coming from the seaward end of the cross-shore profile.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>18/03/2007 - 04/03/2015</td>
<td>Similar trends are observed over the longer term, with significant gains along the eastern profiles, and erosion along profile 6d01746 and 6d01750. A large gain of 45.5m² has occurred along profile 6d01754, with an increased berm height and raised lower tide terrace.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</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>6d01734</td>
<td>26.1</td>
<td>13</td>
<td>34.2</td>
</tr>
<tr>
<td>6d01738</td>
<td>62.4</td>
<td>16</td>
<td>62.4</td>
</tr>
<tr>
<td>6d01742</td>
<td>0.4</td>
<td>0</td>
<td>15.4</td>
</tr>
<tr>
<td>6d01746</td>
<td>3.4</td>
<td>1</td>
<td>-11.6</td>
</tr>
<tr>
<td>6d01750</td>
<td>-21.9</td>
<td>-9</td>
<td>-23.5</td>
</tr>
<tr>
<td>6d01754</td>
<td>35.5</td>
<td>11</td>
<td>45.5</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

Accretion, No Change, Erosion

Survey Unit Boundaries:
- 6d01742 (16%) Erosion
- 6d01746 (13%) Erosion
- 6d01750 (-9%) Erosion
- 6d01734 (13%) Erosion
- 6d01754 (11%) Erosion
- 6d01755 (16%) Erosion

Aerial Photography from 2012

0 150 300 m
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

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

Aerial Photography from 2012

0 150 300 m
### Survey Unit

**6d6D3-12**

### Local Name

**Portscatho**

---

#### Survey Type

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>30/01/2014 - 12/02/2015</td>
<td>Both profiles have gained material over the last year, with profile 6d01821 gaining material along the entire length. Profile 6d01835 has seen a flattening of the cross-shore profile, with material gained towards the seaward end.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>15/03/2007 - 12/02/2015</td>
<td>Long term, profile 6d01821 has gained 13.7m² with a small increase in beach height throughout the length of the profile. To the west, profile 6d01835 has gained a large amount of material, with a flattening of the beach slope, and increase in material towards the seaward end of the profile.</td>
</tr>
</tbody>
</table>

---

#### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
</tr>
<tr>
<td>6d01821</td>
<td>20.9</td>
<td>8</td>
<td>13.7</td>
</tr>
<tr>
<td>6d01835</td>
<td>6.8</td>
<td>5</td>
<td>38.3</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

- Accretion
  - > 30 m$^2$
  - 15 - 30 m$^2$
  - 5 - 15 m$^2$
  - < 5 m$^2$
- Erosion
  - 5 - 15 m$^2$
  - 15 - 30 m$^2$
  - > 30 m$^2$
- No Change

Survey Unit Boundary

Aerial Photography from 2012

0 100 200 m

CISCAG - Cornwall

PLYMOUTH COASTAL OBSERVATORY
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

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

Survey Unit Boundary
### Survey Unit

<table>
<thead>
<tr>
<th>Local Name</th>
<th>Swanpool</th>
</tr>
</thead>
</table>

### Survey Type

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring Beach Change</td>
<td>30/01/2014 - 12/02/2015</td>
<td>In the last year both profiles have gained material along their entire length.</td>
</tr>
<tr>
<td>Baseline - Spring Beach Change</td>
<td>15/03/2007 - 12/02/2015</td>
<td>Similar trends are observed over the longer term, with both profiles gaining material.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring Apr 2014 to Feb 2015</th>
<th>Baseline to Spring Mar 2007 to Feb 2015</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>6d02097</td>
<td>15.4</td>
<td>6</td>
<td>5.7</td>
</tr>
<tr>
<td>6d02083</td>
<td>37.8</td>
<td>8</td>
<td>24.9</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

Aerial Photography from 2012
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
Erosion
No Change

Aerial Photography from 2012

CISCAG - Cornwall

6d6D5-2 - Swanpool - Beach Change
### Survey Unit

| Local Name | Maenporth |

### Survey Type

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>30/01/2014 - 12/02/2015</td>
<td>In the last year the profile has gained material along the lower seaward end.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>15/03/2007 - 12/02/2015</td>
<td>Since the original baseline, the profile has gained a small amount of material, with a decrease at the top of the profile, and an increase at the low tide terrace.</td>
</tr>
</tbody>
</table>

### Comments

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6d02148</td>
<td>28.5</td>
<td>6</td>
<td>23.8</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

Accretion

No Change

Erosion

Aerial Photography from 2012
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion
No Change
Erosion

6d02148 (5%)
### Survey Unit
- **Survey Unit**: 6d6D5-10
- **Local Name**: Porthallow

### Survey Type

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>08/01/2014 - 17/02/2015</td>
<td>Over the last year, both profiles have gained a small amount of material.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>28/09/2007 - 17/02/2015</td>
<td>Since 2007, there has been very little change to either profile in overall cross-sectional area.</td>
</tr>
</tbody>
</table>

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan 2014 to Feb 2015</td>
<td>Sep 2007 to Feb 2015</td>
<td></td>
</tr>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6d02327</td>
<td>9.6</td>
<td>2</td>
<td>2.3</td>
</tr>
<tr>
<td>6d02326</td>
<td>14.9</td>
<td>4</td>
<td>9.6</td>
</tr>
</tbody>
</table>

Comments:

Over the last year, both profiles have gained a small amount of material. Since 2007, there has been very little change to either profile in overall cross-sectional area.
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

- Accretion
- No Change
- Erosion

Aerial Photography from 2012

0 40 80 m

6dD5-10 - Porthallow - Beach Change

CISCAG - Cornwall
## Survey Unit

<table>
<thead>
<tr>
<th>Local Name</th>
<th>Porthoustock</th>
</tr>
</thead>
</table>

## Survey Details

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>08/01/2014 - 17/02/2015</td>
<td>Over the last year there has been little change to the overall profile area. A small berm has occurred part way up the beach slope, with a steepening of profile to the seaward end.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>27/09/2007 - 17/02/2015</td>
<td>Since 2007, there has been very little change to the profile in overall cross-sectional area.</td>
</tr>
</tbody>
</table>

## Comments

By: 95

---

## Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring (Jan 2014 to Feb 2015)</th>
<th>Baseline to Spring (Sep 2007 to Feb 2015)</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>6d02372</td>
<td>3.2</td>
<td>0</td>
<td>-0.8</td>
</tr>
</tbody>
</table>
South West Regional Coastal Monitoring Programme

Annual Survey Report 2015

Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

Accretion

No Change

Erosion

CISCAG - Cornwall

 Plymoutb Coastal Observatory

Aerial Photography from 2012

0 50 100 m

6d6D5-11 - Porthoustock - Beach Change
CISCAG - Cornwall

Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion

No Change

Erosion

Aerial Photography from 2012

0 50 100 m

6d02372i (0%)

No Change

Accretion

Erosion

> 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 Unit</th>
<th>6d6D5-12</th>
</tr>
</thead>
</table>

### Local Name

<table>
<thead>
<tr>
<th>Local Name</th>
<th>Coverack</th>
</tr>
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</table>

#### Survey Type

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>14/01/2014 - 23/02/2015</td>
<td>Since last year, profile 6d02481 has gained 41.2m² of material, with an increase in beach height at the top and low tide terrace. Profile 6d02485 has gained a layer of material along the mid to low tide section of the profile.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>20/03/2007 - 23/02/2015</td>
<td>Since 2007, both profiles have gained almost 50m² of material, with significant increase in beach height at the seaward end of the profiles.</td>
</tr>
</tbody>
</table>

#### Comments

### 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>6d02481</td>
<td>41.2</td>
<td>19</td>
<td>49.4</td>
<td>23</td>
<td>-2.3</td>
</tr>
<tr>
<td>6d02485</td>
<td>33.0</td>
<td>20</td>
<td>50.1</td>
<td>34</td>
<td>-2.3</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

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

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

- **No Change**

Survey Unit Boundary

Aerial Photography from 2012
## Survey Unit: 6d6D5-14
### Local Name: Kennack Sands

### Profile Cross-Sectional Area

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA Diff (m²)</td>
<td>% Change</td>
<td>CSA Diff (m²)</td>
<td>% Change</td>
</tr>
<tr>
<td>6d02639</td>
<td>54.4</td>
<td>23</td>
<td>6.9</td>
</tr>
</tbody>
</table>

### Observations

- **Spring - Spring**: Beach Change 14/01/2014 - 08/03/2015
  - Significant gains have occurred along the profile, with a large gain at the seaward end, resulting in a flattening of the beach slope.

- **Baseline - Spring**: Beach Change 02/08/2007 - 08/03/2015
  - Since the original baseline, the profile looks very similar, with a very low level of accretion of material.

### Comments

- Significant gains have occurred along the profile, with a large gain at the seaward end, resulting in a flattening of the beach slope.
- Since the original baseline, the profile looks very similar, with a very low level of accretion of material.
6d6D5-14 - Kennack Sands - Beach Change

Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

Survey Unit Boundary

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

Aerial Photography from 2012

Plymouth Coastal Observatory

CISCAG - Cornwall

South West Regional Coastal Monitoring Programme

Annual Survey Report 2015
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion: >30 m²
Erosion: <5 m²
No Change: 5-15 m²

Aerial Photography from 2012

CISCAG - Cornwall
Over the last year, profiles 6d02646 and 6d02651 have both gained 22% in cross-sectional area, with accretion occurring at the seaward end of the profile, and a flattening of beach slope. Profile 6d02655 has remained stable over the last year.

Since 2007, the profiles remain similar, with little change to percentage cross-sectional area.
Actual Change in Cross-sectional Area
(Baseline 2007 to Spring 2015)

- Survey Unit Boundary

CISCAG - Cornwall

South West Regional Coastal Monitoring Programme
Annual Survey Report 2015
Survey Unit | 6d6D5-17
Local Name | Cadgwith

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Dates Surveyed</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring - Spring</td>
<td>15/01/2014-11/03/2015</td>
<td>Over the last year, profile 6d02700A has gained 6.2 m$^2$ of material, with an increase in beach height in the middle of the profile. The profile on the remaining beach has shown no significant change.</td>
</tr>
<tr>
<td>Baseline - Spring</td>
<td>27/09/2007-11/03/2015</td>
<td>Since 2007, the trends are similar to the year on year analysis, with a gain in beach height along profile 6d02700A, and no change along profile 6d02701A.</td>
</tr>
</tbody>
</table>

Comments: Baseline data has been acquired from LiDAR flown in September 2007.

<table>
<thead>
<tr>
<th>Profile</th>
<th>Spring to Spring</th>
<th>Baseline to Spring</th>
<th>Master Profile Level (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CSA Diff (m$^2$)</td>
<td>% Change</td>
<td>CSA Diff (m$^2$)</td>
</tr>
<tr>
<td>6d02700A</td>
<td>6.2</td>
<td>2</td>
<td>8.8</td>
</tr>
<tr>
<td>6d02701A</td>
<td>0.0</td>
<td>0</td>
<td>-3.0</td>
</tr>
</tbody>
</table>
Actual Change in Cross-sectional Area (Spring 2014 to Spring 2015)

- Survey Unit Boundary

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

Accretion
No Change
Erosion
Actual Change in Cross-sectional Area (Baseline 2007 to Spring 2015)

Survey Unit Boundary

Accretion	No Change	Erosion

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

Aerial Photography from 2012
Profile Charts for Survey Unit 6cSU28

Profiles: 6c00264

- Chainage (m): 45 to 200
- Level (m): -2.5 to 6.0

Legend:
- 2015-01
- 2014-01
- 2007-05
- Design Profile
- Master Profile
- Profile Envelope

SAIDS
Survey Unit 6cSU28
Cross-Sectional Area Charts

Cross Sectional Area above MP Trend for Location: 6c00256 and Reference Profile Set

Area Above MP Trend: Accreting at 3.357 m²/Year
Survey Unit 6cSU28
Cross-Sectional Area Charts

Cross Sectional Area above MP Trend for Location: 6c00265A and Reference Profile Set

Area Above MP Trend Eroding at -0.912 m²/Year

Survey Date:
- 18/06/2007
- 16/02/2008
- 16/06/2008
- 14/02/2009
- 15/06/2009
- 13/02/2010
- 14/06/2010
- 12/02/2011
- 13/06/2011
- 11/02/2012
- 11/06/2012
- 09/02/2013
- 10/08/2013
- 09/02/2014
- 09/06/2014

Area Trend

Recycling Event

Area Between MP & DP

SAIDS
Cross Sectional Area above MP Trend for Location: 6c00507 and Reference Profile Set

Area Above MP Trend: Accreting at 4.777 m²/Year
Cross Sectional Area above MP Trend for Location: 6c00513 and Reference Profile Set

Area Above MP Trend Eroding at -6.495 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

Survey Unit 6cSU30-4
Cross-Sectional Area Charts
Cross Sectional Area above MP Trend for Location: 6c00524 and Reference Profile Set

Area Above MP Trend: Accreting at 3.624 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

Graphical Data:
- Yellow square: Recycling Event
- Green square: Area Above MP
- Green line: Area Trend
- Blue line: Area Between MP & DP
Cross Sectional Area above MP Trend for Location: 6c00526 and Reference Profile Set

Area Above MP Trend Eroding at -0.673 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

Survey Unit 6cSU30-4
Cross-Sectional Area Charts
Cross Sectional Area above MP Trend for Location: 6c00574 and Reference Profile Set

Area Above MP Trend: Accrting at 12.078 m²/Year
Cross Sectional Area above MP Trend for Location: 6c00577 and Reference Profile Set

Area Above MP Trend: Accrering at 15.277 m²/Year
Cross Sectional Area above MP Trend for Location: 6c00592 and Reference Profile Set

Area Above MP Trend: Accreting at 3.786 m²/Year
Cross Sectional Area above MP Trend for Location: 6c00619 and Reference Profile Set

Area Above MP Trend: Accreting at 6.224 m²/Year
Survey Unit 6cSU38

Cross-Sectional Area Charts

Cross sectional area above MP trend for Location: 6c01297 and Reference Profile Set

Area Above MP Trend: Accreting at 0.609 m²/Year

Survey Date: 18/08/2007 to 09/08/2014

Legend:
- Recycling Event
- Area Above MP
- Area Trend
- Area Between MP & DP
Cross Sectional Area above MP Trend for Location: 6c01304 and Reference Profile Set

Area Above MP Trend: Accreting at 0.405 m²/Year
Cross Sectional Area above MP Trend for Location: 6d0C282 and Reference Profile Set

Area Above MP Trend: Accreting at 3.237 m²/Year
Survey Unit 6d6D1-4
Cross-Sectional Area Charts

Cross-Sectional Area above MP Trend for Location: 6d00296 and Reference Profile Set

Area Above MP Trend Eroding at -1.375 m²/Year

Survey Date


Survey Date

0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950

Beach Area (m²)

Recycling Event Area Above MP Area Trend Area Between MP & DP
Cross Sectional Area above MP Trend for Location: 6d0C298 and Reference Profile Set

Area Above MP Trend Eroding at -1.732 m²/Year

Survey Unit 6d6D1-4
Cross-Sectional Area Charts
Survey Unit 6d6D1-4
Cross-Sectional Area Charts

Cross Sectional Area above MP Trend for Location: 6d00310 and Reference Profile Set

Area Above MP Trend Eroding at -1.879 m²/Year

Survey Date

Area Trend

Recycling Event

Area Above MP

Area Between MP & DP
Cross Sectional Area above MP Trend for Location: 6d00317 and Reference Profile Set

Area Above MP Trend: Eroding at -1.345 m²/Year
Cross Sectional Area above MF Trend for Location: 6d00319 and Reference Profile Set

Area Above MF Trend: Eroding at -17.931 m²/Year
Survey Unit 6d6D1-4
Cross-Sectional Area Charts

Cross Sectional Area above MP Trend for Location: 6d00320 and Reference Profile Set

Area Above MP Trend: Eroding at -13.226 m²/Year

Survey Date: 18/08/2007 to 07/02/2015

Legend:
- Yellow: Recycling Event
- Green: Area Above MP
- Black: Area Trend
- Blue: Area Between MP & DP
Cross Sectional Area above MP Trend for Location: 6d00322 and Reference Profile Set

Area Above MP Trend: Accreting at 8.355 m²/Year

Survey Date:
- 18/08/2007
- 16/02/2008
- 16/05/2008
- 14/02/2009
- 15/08/2009
- 13/02/2010
- 14/06/2010
- 12/02/2011
- 13/08/2011
- 11/02/2012
- 11/08/2012
- 09/02/2013
- 10/06/2013
- 08/02/2014
- 09/09/2014
- 07/02/2015

Legend:
- Yellow: Recycling Event
- Green: Area Above MP
- Gray: Area Trend
- Blue: Area Between MP & DP
Cross Sectional Area above MP Trend for Location: 6d00396 and Reference Profile Set

Area Above MP Trend: Accreting at 0.453 m²/Year

Survey Date

10/08/2014 07/02/2015

Survey Unit 6d6D1-6
Cross-Sectional Area Charts

Survey Unit 6d6D1-6
Cross-Sectional Area Charts
Cross Sectional Area above MP Trend for Location: 6d00402 and Reference Profile Set

Area Above MP Trend: Accreting at 1.783 m²/Year
Cross-Sectional Area above MP Trend for Location: 6d00410 and Reference Profile Set

Area Above MP Trend: Eroding at -0.062 m²/Year

Survey Date

0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400

Peach Area (m²)


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

SAIDS
Cross Sectional Area above MP Trend for Location: 6d00414 and Reference Profile Set

Area Above MP Trend: Accreting at 1.841 m²/Year
Survey Unit 6d6D1-6
Cross-Sectional Area Charts

Cross Sectional Area above MP Trend for Location: 6d00425 and Reference Profile Set

Area Above MP Trend: Accreting at 2.900 m²/Year

Survey Date


Peak Area (m²)
Cross-Sectional Area above MF Trend for Location: 6d00527 and Reference Profile Set

Area Above MF Trend Eroding at -3.754 m²/Year
Cross Sectional Area above MP Trend for Location: 6d00956 and Reference Profile Set.

Area Above MP Trend: Eroding at -9.867 m²/Year.
Cross Sectional Area above MF Trend for Location: 6d6D2-4 and Reference Profile Set

Area Above MF Trend: Accreting at 8.818 m²/Year

Survey Date:
- 18/02/2007
- 14/02/2009
- 14/02/2012
- 11/02/2013
- 09/02/2014
- 07/02/2015

Legend:
- Yellow: Recycling Event
- Green Dots: Area Above MF
- Green Line: Area Trend
- Blue Line: Area Between MF & DP

Plot:
- Y-axis: Beach Area (m²)
- X-axis: Survey Date
Cross Sectional Area above MP Trend for Location: 6d00965 and Reference Profile Set

Area Above MP Trend: Accreting at 13.276 m²/Year
Survey Unit 6d6D2-7

Cross-Sectional Area Charts

Cross Sectional Area above MF Trend for Location: 6d01006 and Reference Profile Set

Area Above MF Trend: Accreting at 2.379 m²/Year

Survey Date


Beach Area (m²)

0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420

SAMDLS
Survey Unit 6d6D2-7
Cross-Sectional Area Charts

Cross Sectional Area above MP Trend for Location: 6d01014 and Reference Profile Set

Area Above MP Trend: Accreting at 1.313 m²/Year

Survey Date

Recycling Event  Area Above MP  Area Trend  Area Between MP & DP
Profiles: 6d01229
Cross-sectional Area above MP Trend for Location: 6d01220A and Reference Profile Set

Area Above MP Trend: Accreting at 8.739 m²/Year

Survey Unit 6d6D2-13
Cross-Sectional Area Charts
Cross Sectional Area above MP Trend for Location: 6d01233 and Reference Profile Set.

Area Above MP Trend Eroding at -7.427 m²/Year

Survey Unit 6d6D2-13
Cross-Sectional Area Charts
Survey Unit 6d6D2-15
Cross-Sectional Area Charts

Cross Sectional Area above MF Trend for Location: 6d01291 and Reference Profile Set

Area Above MF Trend: Accreting at 1.033 m²/Year

Survey Date

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

SAILDS
Cross Sectional Area above MP Trend for Location: 6d01374 and Reference Profile Set

Area Above MP Trend: Accreting at 3.176 m²/year
Cross Sectional Area above MP Trend for Location: 6d01377 and Reference Profile Set

Area Above MP Trend: Accreting at 0.359 m²/Year
Cross Sectional Area above MF Trend for Location: 6d01526 and Reference Profile Set

Area Above MF Trend: Accreting at 0.797 m²/Year
Area Above MP Trend Eroding at -4.015 m²/Year

Survey Unit 6d6D3-6
Cross-Sectional Area Charts
Cross Sectional Area above MP Trend for Location: 6d01746 and Reference Profile Set.

Area Above MP Trend Eroding at -2.037 m²/Year.
Cross Sectional Area above MP Trend for Location: 6d01750 and Reference Profile Set

Area Above MP Trend Eroding at -0.615 m²/Year

Survey Unit 6d6D3-10
Cross-Sectional Area Charts
Cross Sectional Area above MP Trend for Location: 6d61754 and Reference Profile Set

Area Above MP Trend Eroding at -4.271 m²/Year
Cross Sectional Area above MF Trend for Location: 6d01821 and Reference Profile Set

Area Above MF Trend: Accreting at 0.350 m²/Year
Survey Unit 6d6D5-2
Cross-Sectional Area Charts

Cross Sectional Area above MP Trend for Location: 6d02083 and Reference Profile Set

Area Above MP Trend: Accreting at 1.408 m²/Year

Survey Date

View options:
- Recycle Event
- Area Above MP
- Area Trend
- Area Between MP & DP

SAIDS
Cross Sectional Area above MP Trend for Location: 6d62148 and Reference Profile Set

Area Above MP Trend: Accreting at 0.462 m²/Year
Cross Sectional Area above MF Trend for Location: 6dD2327 and Reference Profile Set

Area Above MF Trend: Accreting at 0.049 m²/Year

Survey Date

0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500


Peach Area (m²)
Cross Sectional Area above MP Trend for Location: 6d02372 and Reference Profile Set

Area Above MP Trend: Eroding at -0.260 m²/Year
Cross Sectional Area above MP Trend for Location: 6d02481 and Reference Profile Set

Area Above MP Trend: Accreting at 5.382 m²/Year
Cross Sectional Area above MP Trend for Location: 6d02485 and Reference Profile Set

Area Above MP Trend: Accreting at 5.261 m²/Year
Cross Sectional Area above MP Trend for Location: 6d02646 and Reference Profile Set

Area Above MP Trend Eroding at -3.961 m2/Year

Survey Date:

- 08/08/2007
- 15/08/2008
- 16/08/2008
- 14/02/2009
- 15/02/2009
- 13/02/2010
- 14/06/2010
- 12/02/2011
- 13/06/2011
- 11/02/2012
- 11/06/2012
- 09/02/2013
- 10/08/2013
- 08/02/2014
- 09/08/2014
- 07/02/2015

Survey Unit 6dD5-15
Cross-Sectional Area Charts
Cross-Sectional Area above MF Trend for Location: 6d03651 and Reference Profile Set

Area Above MF Trend: Eroding at -1.767 m²/Year

Survey Date:


Survey Unit 6d0365-15

Cross-Sectional Area Charts
Cross Sectional Area above MP Trend for Location: 6d02700A and Reference Profile Set

Area Above MP Trend: Accreting at 0.731 m²/Year

Survey Date:
- 16/02/2008
- 16/08/2008
- 14/02/2009
- 15/08/2009
- 13/02/2010
- 14/08/2010
- 12/02/2011
- 13/08/2011
- 11/02/2012
- 11/08/2012
- 09/02/2013
- 10/08/2013
- 08/02/2014
- 09/08/2014
- 07/02/2015

Graphical representation showing the trend of cross-sectional area above the Mean Position (MP) over time.