Cover photograph: Lulworth Cove
S.Hawkins
Southeast Strategic Regional Coastal Monitoring Programme

Annual Report 2013 – Durlston Head to Portland Bill

1. Introduction
Analysis presented in this interim report provides an overview of beach changes and wave and tidal measurements since the commencement of the Southeast Strategic Regional Coastal Monitoring Programme. The first beach surveys took place during the winter of 2003 and changes are reported until spring/summer 2013.

Data are presented at several levels:
- Process cell summary of profile change from 2012 to 2013
- Process cell summary of profile change from 2003/4/5 to 2013
- Detailed beach profile change from 2012 to 2013
- Detailed beach profile change from 2003/4/5 to 2013
- Difference models where applicable between previous topographic baseline surveys and 2013
- Profile envelope graphs (on CD)
- Trend analysis of beach cross-sectional area (on CD)

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.

2. Hydrodynamic data
   a. Waves
   A directional Waverider buoy was deployed in Weymouth Bay on 18 December 2006. The full wave report is given at Annex A.
   
   b. Tides
   A tide gauge was installed on Swanage Pier in March 2007 with kind permission of Swanage Pier Trust.

3. Survey data – topographic
From Worbarrow Tout around to Weymouth most changes have been relatively minor over the past year with notable exception of St Oswald's Bay near Durdle Door where a major landslip occurred. Over the longer term the most notable erosion has occurred at the western end of units.

Dates of the surveys are given in Annex E and the detailed topographic survey report is given in Annex F.
4. **Survey data- bathymetry**

A swath bathymetry survey was conducted in conjunction with the Maritime and Coastguard Agency’s Civil Hydrography Programme, Dorset Wildlife Trust and the Royal Navy, with contributions from Viridor Credits Environmental Company (the DORIS survey) in 2011.

- **Annex A** Weymouth Interim Wave Report
- **Annex B** N/A
- **Annex C** N/A
- **Annex D** N/A
- **Annex E** High Level Report – field data collection (SCOPAC)
- **Annex F** Topographic Survey Report for Dorset.
- **Annex G** N/A

**Explanatory Notes**
Weymouth Directional Waverider Buoy

Location
OS: 370833E 80423N
WGS84: Latitude: 50° 37.366' N  Longitude: 02° 24.820' W

Water Depth
~10 m CD

Instrument Type
Datawell Directional Waverider Mk III

Data Quality

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Storm Analysis

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* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Weymouth). The surge shown is the residual at the time of the highest $H_s$. The maximum tidal surge is the largest positive surge during the storm event.
Distribution plots

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

- Wave roses (Direction vs. $H_s$) from July 2012 to June 2013 (top) and for all measured data (bottom)
- Percentage of occurrence of $H_s$, $T_p$, $T_z$ and Direction from July 2012 to June 2013
- Monthly time series of $H_s$ (red line is 2.4 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

Summary

This reporting period was relatively quiet with only one storm exceeding the 2.4m threshold in January. However, there were no data for almost a month from November to December when the buoy went missing following a suspected collision with a large vessel in the vicinity. The wave direction continued to predominate from SSE.

General

The buoy was first deployed on 18 December 2006.

Acknowledgements

The shore station is kindly hosted by the Weymouth and Portland National Sailing Academy. 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.
Annex A

Interim Wave Report

Storms at Weymouth from Jul 2012 to Jun 2013

Storm threshold is $H_s > 2.4 \text{m}$

Storms at Weymouth - all years

$H_s (\text{m})$

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Southeast Regional Coastal Monitoring Programme - Phase III - Channel Coastal Observatory Topographic Surveys

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2 To be done by lidar, February 2013  
3 Re-scheduled due to nesting birds
1. **Introduction**

Analysis has been conducted for those sites where a minimum of four surveys have been recorded. In general, changes are measured relative to the Mean Low Water Springs level, although this has not been possible for much of the historic data at many of the sites. Where possible, longer-term records from earlier programmes are also presented in the profile analysis, although historical data was often collected using significantly different survey techniques, specifications and even datums. Continuity of record has been attempted but is not always possible.

The profile envelope, along with the two most recent profiles at each profile location, is shown superimposed and relative to a Master Profile (on the accompanying CD). The Master Profile provides the basis for calculation of beach cross-section 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)
As part of the monitoring programme specification, each survey unit receives a full topographic baseline survey once every 5 years, with the exception of Beach Management Plan (BMP) sites which receive an annual baseline. Baseline surveys are now conducted using a laser scanner and continuous spot height data is collected at approximately 1m intervals across the lower beach to the level of MLWS.

Where there are at least two baseline surveys for each management unit a topographic difference model has been produced based on the spot height elevations or laser scan data. The data has been processed into a grid model and successive models have been subtracted from one another to produce a difference model for the survey unit.

2. Condition of process sub-cell
The Beach Change Summary map contains an at-a-glance condition of the whole of the Durlston Head to Portland Bill area, with the lines representing the percentage of accretion, no change or erosion within each Survey Unit for which there is topographic data.
3. Condition of individual Survey Units
Changes within each Survey Unit are summarised on up to four maps: Beach change maps (Spring to Spring and Baseline to Spring), and topographic difference models (year to year where possible and baseline to this year).

Beach Change maps show the location of each beach profile, superimposed on 2008 aerial photography (note that the line may have been extended for clarity). Where possible, the annual change in cross-sectional area has been calculated from spring 2012 to spring 2013 and from baseline 2003/04 to spring 2013.

In 5gSU13-15, as in previous years, spring to spring analysis was conducted to the Mean Low Water Spring level of -0.83mOD while baseline (2003) to Spring uses a level of 0mOD as the earlier surveys were not measured to the MLWS depth. It is also worth noting that sediment is routinely moved from 5gSU13 to 5gSU14 and re-profiling occurs in these units; consequently change in this area is not entirely natural.

5gSU05: Arish Mell (East) to Worbarrow Tout
Spring 2012 to Spring 2013
The inclusion of more profiles over the last couple of years shows the bay to be generally stable with only the two most westerly profiles showing more than 15% change. The increase here has occurred to the lower beach.

Baseline 2003 to Spring 2013
A general pattern of erosion to the west and accretion to the east can be seen over the longer term; the notable increase in area to profile 5g00119 has largely occurred at the back of the profile due to the cliff slumping over the last few years.

5gSU06: Lulworth Cove
Spring 2012 to Spring 2013
The majority of profiles show stability over the year with only the two most westerly profiles showing more than 5% change.

Baseline 2003 to Spring 2013
Over the longer-term most profiles show some erosion, particularly a section to the west of the cove, adjacent to the café and slipway.

Topographic Difference Model, 2012 to 2013
The majority of this unit shows no change but on the eastern section there has been some erosion to the landward side and accretion to the seaward side, perhaps illustrating a seaward movement of material since the change to cross-sectional areas (CSA) of profiles in this section is minimal.

Topographic Difference Model, 2003 to 2013
Over the longer term a similar pattern can be seen but the changes are less pronounced.

5gSU07: Bats Head to Stair Hole
Spring 2012 to 2013
The annual fluctuation to the most westerly profile in this unit continues, with a significant increase in CSA this year. Extra lines were added as interims in 2012 so a comparison can be made this year and they show accretion to the west and little change or slight erosion towards Durdle Door. The most dramatic changes can be seen in Man O’ War Bay and St. Oswald’s...
Bay where a large landslip occurred in April, thus significantly increasing the amount of material on the beach; it is not possible to make a comparison for the line closest to the landslip as it has been moved forward to such an extent.

**Baseline 2003 to 2013**
To the west of Durdle Door there is a general trend of erosion to the western end of the bay and little change or some accretion to the eastern end. As is to be expected the profile lines in St Oswald’s Bay show significant accretion due to the increase in material on the beach from the landslip. Man O’War Bay appears to be unaffected.

**Topographic Difference Model, January to June 2013**
The area affected by the landslip can be clearly seen on the difference model using data collected by laser scan surveys which took place before and after it occurred. Material has spread along the beach to show accretion along its entire length although Man O’War Bay shows little overall change.

**5gSU08: White Nothe to Ringstead Bay (west)**
**Spring 2012 to Spring 2013**
The most westerly profile shows an increase in volume and the most easterly a decrease while the remainder of the unit has been stable over the year.

**Baseline 2003 to Spring 2013**
All profiles show relatively minor changes over the longer term.

**Topographic Difference Model, 2012 to 2013**
Over the last year a pattern of accretion to the west and erosion to the east can be seen.

**Topographic Difference Model, 2003 to 2013**
Over the longer period there is a strip of erosion along the length of the beach; material has generally accreted behind and in front of this strip. The far eastern end shows erosion.

**5gSU09: Ringstead Bay (west) to Ringstead**
**Spring 2012 to Spring 2013**
Extra lines have been added to this unit and comparison of them over the year shows little change with only some minor erosion through the central section. The offshore reefs offer considerable protection at this site.

**Baseline 2007 to Spring 2013**
Using a comparison with the autumn 2007 survey data, all profiles show less than 15% change.

**Topographic Difference Model, 2012 to 2013**
Now that two laser scan surveys have been carried out encompassing the full extent of this survey unit, a more detailed view of any changes over the year can be seen; generally a strip of erosion to the west has occurred but material has accreted either side of it whereas more general but relatively minor erosion has occurred to the east.

**Topographic Difference Model, 2005 to 2013**
Over the longer term only the eastern section of the beach can be compared; here slight accretion to the crest has occurred with pockets of erosion around it.
**5gSU12: Bowleaze Cove**
*Spring 2012 to Spring 2013*
Both profile lines show erosion over the year.

**Baseline 2006 to Spring 2013**
Very little difference in CSA’s can be seen over the longer term.

**Topographic Difference Model, 2012 to 2013**
Little change has occurred across this small unit. Since 2006 Bowleaze Cove has been given a full baseline survey each year as it is the down-drift end of Preston Beach.

**Topographic Difference Model, 2007 to 2013**
Patches of slight erosion can be seen over the longer term.

**5gSU13: Bowleaze Cove (west) to Overcombe**
*January 2012 to February 2013*
All profiles show small increases in their cross-sectional areas. This area is generally used for the extraction of material but no record of material being moved alongshore has been received this year, which may account for the increase.

**Baseline 2003 to February 2013**
Over the longer period, all profiles show accretion, more significantly towards the western end.

**Topographic Difference Model, 2012 to 2013**
Little change has occurred to the lower beach over the year whilst some minor accretion can be seen towards the back of the beach.

**Topographic Difference Model, 2005 to 2013**
Over the longer term accretion has occurred above the crest apart from an area towards the northeast end which appears to have eroded at the base of the cliffs.

**5gSU14: Overcombe to Preston Beach Groyne**
*Spring 2012 to Spring 2013*
Preston Beach has shown only minor changes over the year with just two profiles towards the western end and one at the eastern end showing more than 5% increase in cross-sectional area. Note that re-profiling occurred in early 2013 across this unit as part of the on-going management scheme.

**Baseline 2003 to Spring 2013**
The majority of profiles in this unit have generally been stable over the long term but generally all show some slight erosion with the notable exceptions of 5g00297 and 5g00296 which shows a considerable increase in cross-sectional area.

**Topographic Difference Model, 2012 to 2013**
The difference model shows very little change; the strip of slight erosion below the crest & accretion above it could be due to re-profiling.
Topographic Difference Model, 2005 to 2013
Overall little change can be seen, but a more pronounced strip of erosion along the crest is apparent at the southern end of the survey unit while an area of accretion above the crest can be seen at the northern end.

5gSU15: Preston Beach Groyne to Commercial Pier
Spring 2012 to Spring 2013
The majority of this unit shows very little change with some slight erosion at the eastern end of the unit.

Baseline 2003 to Spring 2013
Overall, the majority of this management unit has been stable or accreting over the longer term, with the exception of profile 5g00318 which shows a decrease in volume. However, the 2003 value was relatively high for this particular profile on the survey used in this analysis, which accounts for this.

Topographic Difference Model, 2005 to 2013
The upper beach at the southern end of the bay has accreted while some minor erosion has occurred to the lower beach in patches at the southern end and towards the northern end.
% change in cross-sectional area 2012 to 2013

Durlston Head to Portland Bill

Survey Unit Boundary
Kilometers
Line name (actual change, m²)

% change in cross-sectional area

Accretion
> 30 %
15 - 30 %
5 - 15 %
Less than 5 %
No Change
Erosion
15 - 30 %
> 30 %
% Change in Cross-sectional Area

**Southeast Regional Coastal Monitoring Programme**

**Dorset Annual Survey Report 2013**

% change in cross-sectional area Baseline to 2013

- **Accretion**
  - > 30%
  - 15 - 30%
  - 5 - 15%
  - Less than 5%

- **Erosion**
  - 15 - 30%
  - > 30%
  - No Change

**Example:** 5gSU04 (45)

Line name (actual change, m²)

Survey Unit Boundary

Aerial Photography: 2008
Actual Change in Cross-sectional Area (m²)

SU Boundary

Actual change in cross-sectional area

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

500420 (45)

Line name (actual change, m²)

Aerial Photography: 2008

Actual change in cross-sectional area 2012 to 2013
Actual change in cross-sectional area Baseline to 2013

- **Accretion**: > 30m², 15 - 30m², 5 - 15m², Less than 5m²
- **Erosion**: 15 - 30m², > 30m²
- **No Change**

**Actual Change in Cross-sectional Area (m²)**

- **Line name**: SU Boundary
- **Aerial Photography**: 2008

Durlston Head to Portland Bill
% change in cross-sectional area August 2012 to August 2013

Arish Mell (East) to Worbarrow Tout: 5gSU05
Southeast Strategic Regional Coastal Monitoring Programme

% change in cross-sectional area May 2003 to August 2013

Dorset Annual Report 2013

% change in cross-sectional area

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

eg: 5f00420 (45)
Line name (actual change, m²)

SU Boundary

Aerial Photography: 2008

Arish Mell (East) to Worbarrow Tout: 5gSU05
Southeast Strategic Regional Coastal Monitoring Programme

% change in cross-sectional area October 2012 to May 2013

Dorset Annual Report 2013

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

Erosion
- > 30 %
- 15 - 30 %
- 5 - 15 %
- Less than 5 %

No Change
- No Change

eg: 5f00420 (45)
Line name (actual change, m²)

SU Boundary

Aerial Photography: 2008

% change in cross-sectional area October 2012 to May 2013

Lulworth Cove : 5gSU06
Southeast Strategic Regional Coastal Monitoring Programme

% change in cross-sectional area February 2003 to May 2013

Dorset Annual Report 2013

Lulworth Cove: 5gSU06

% change in cross-sectional area

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

Aerial Photography: 2008
% change in cross-sectional area January 2013 to June 2013

- Bat's Head to Stair Hole: 5gSU07 (1 of 2)

Southeast Strategic Regional Coastal Monitoring Programme

Aerial Photography: 2008

Dorset Annual Report 2013
% change in cross-sectional area May 2003 to June 2013

SU Boundary

Aerial Survey: 2008

Bat's Head to Stair Hole: 5gSU07 (1 of 2)
% change in cross-sectional area December 2012 to June 2013

**Bat's Head to Stair Hole : 5gSU07 (2 of 2)**
Southeast Strategic Regional Coastal Monitoring Programme

% change in cross-sectional area May 2003 to June 2013

Dorset Annual Report 2013

SU Boundary

% change in cross-sectional area

- > 30 %
- 15 - 30 %
- 5 - 15 %
- Less than 5 %
- 15 - 30 %
- > 30 %

eg: 5f00420 (45)

Line name (actual change, m²)

Aerial Photography: 2008

Bat's Head to Stair Hole: 5gSU07 (2 of 2)
Southeast Strategic Regional Coastal Monitoring Programme

% change in cross-sectional area May 2012 to June 2013

Dorset Annual Report 2013

% change in cross-sectional area

- > 30%
- 15 - 30%
- 5 - 15%
- Less than 5%
- 5 - 15%
- 15 - 30%
- > 30%

eg:
5f00420 (45)

Line name (actual change, m²)

SU Boundary

Aerial Photography: 2008

White Nothe to Ringstead Bay (west): 5gSU08
% change in cross-sectional area August 2003 to June 2013

White Nothe to Ringstead Bay: 5gSU08
% change in cross-sectional area May 2012 to June 2013

Ringstead Bay (west) to Ringstead : 5gSU09
% change in cross-sectional area September 2007 to June 2013

Ringstead Bay (west) to Ringstead : 5gSU09
% change in cross-sectional area May 2012 to May 2013

Dorset Annual Report 2013

Southeast Strategic Regional Coastal Monitoring Programme

Aerial Photography: 2008

% change in cross-sectional area

- > 30 %
- 15 - 30 %
- 5 - 15 %
- Less than 5 %

No Change

Erosion

eg: 5f00420 (45)

Line name (actual change, m²)

SU Boundary

Bowleaze Cove : 5gSU12
% change in cross-sectional area April 2006 to May 2013

Dorset Annual Report 2013

Southeast Strategic Regional Coastal Monitoring Programme

Aerial Photography: 2008

% change in cross-sectional area

- > 30 %
- 15 - 30 %
- 5 - 15 %
- Less than 5 %
- 5 - 15 %
- 15 - 30 %
- > 30 %

eg: 5g00420 (45)

Line name (actual change, m²)

SU Boundary

Aerial Photography: 2008

Bowleaze Cove : 5gSU12
Southeast Strategic Regional Coastal Monitoring Programme

% change in cross-sectional area January 2012 to February 2013

Dorset Annual Report 2013

- 5g00291 (8)
- 5g00292 (5)
- 5g00293 (5)
- 5g00294 (5)
- 5g00295 (4)
- 5f00420 (45)

Line name (actual change, m²)

- SU Boundary

Aerial Photography: 2008

Bowleaze Cove (west) to Overcombe: 5gSU13
Southeast Strategic Regional Coastal Monitoring Programme

Dorset Annual Report 2013

Aerial Photography: 2008

% change in cross-sectional area

- > 30%
- 15 - 30%
- 5 - 15%
- Less than 5%
- 5 - 15%
- 15 - 30%
- > 30%

eg: 5g00420 (45) Line name (actual change, m²)

Line name
SU Boundary

% change in cross-sectional area April 2003 to February 2013

Bowleaze Cove (west) to Overcombe: 5gSU13
% change in cross-sectional area May 2012 to May 2013

Overcombe to Preston Beach Groyne: 5gSU14
Southeast Strategic Regional Coastal Monitoring Programme

% change in cross-sectional area April 2003 to May 2013

Dorset Annual Report 2013

Overcombe to Preston Beach Groyne: 5gSU14

- No Change
- 5 - 15%
- 15 - 30%
- > 30%
- Less than 5%
Southeast Strategic Regional Coastal Monitoring Programme

% change in cross-sectional area May 2012 to May 2013

Dorset Annual Report 2013

% change in cross-sectional area

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

eg: 5f00420 (45)
Line name (actual change, m²)

SU Boundary

Aerial Photography: 2008

Preston Beach Groyne to Commercial Pier: 5gSU15
<table>
<thead>
<tr>
<th>Line name</th>
<th>% change in cross-sectional area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preston Beach Groyne to Commercial Pier : 5gSU15</td>
<td></td>
</tr>
</tbody>
</table>

% change in cross-sectional area February 2003 to May 2013

Dorset Annual Report 2013

Southeast Strategic Regional Coastal Monitoring Programme

Aerial Photography: 2008
Change in elevation (Topographic Difference Models) 2003 to 2013

Aerial Photography: 2008

Southeast Strategic Regional Coastal Monitoring Programme

Dorset Annual Report 2013
Change in elevation (Topographic Difference Models) January to June 2013

Bat's Head to Stair Hole: 5gSU07
Change in elevation (Topographic Difference Models) 2012 to 2013

White Nothe to Ringstead Bay (west) : 5gSU08
Change in elevation (Topographic Difference Models) 2003 to 2013

White Nothe to Ringstead Bay (west) : 5gSU08
Change in elevation (Topographic Difference Models) 2012 to 2013

Ringstead Bay (west) to Ringstead: 5gSU09
Change in elevation (Topographic Difference Models) 2012 to 2013

Bowleaze Cove: 5gSU12
Aerial Photography: 2008
Southeast Strategic Regional Coastal Monitoring Programme

Change in elevation (Topographic Difference Models) 2007 to 2013

Dorset Annual Report 2013

±0 50 10 20 30 40 m

Accretion

Erosion

Change in Elevation (m)

>= 3
2.5 - 3
2 - 2.5
1.5 - 2
1 - 1.5
0.5 - 1
0.25 - 0.5
-0.25 - 0.25
-0.5 - 0.25
-1 - 0.5
-1.5 - -1
-2 - -1.5
-2.5 - -2
-3 - -2.5
<= -3

Model Extent

Bowleaze Cove : 5gSU12
Aerial Photography: 2008

Southeast Strategic Regional Coastal Monitoring Programme

Change in elevation (Topographic Difference Models) 2012 to 2013

Dorset Annual Report 2013

Bowleaze Cove (west) to Overcombe: 5gSU13
Change in elevation (Topographic Difference Models) 2005 to 2013

Model Extent

Change in Elevation (m)

<= -3
-3 - -2.5
-2.5 - -2
-2 - -1.5
-1.5 - -1
-1 - -0.5
-0.5 - -0.25
-0.25 - 0.25
0.25 - 0.5
0.5 - 1
1 - 1.5
1.5 - 2
2 - 2.5
>= 3

Bowleaze Cove (west) to Overcombe: 5gSU13
Change in elevation (Topographic Difference Models) 2005 to 2013

Overcombe to Preston Beach Groyne : 5gSU14
Change in elevation (Topographic Difference Models) 2005 to 2013

Preston Beach Groyne to Commercial Pier: 5gSU15
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.

\[
\frac{CSA_1 - CSA_2}{CSA_2} \times 100 \quad \text{Eqn (1)}
\]

where CSA\(_1\) = most recent springtime 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.
Accretion = 5.47  Erosion = -3.66  Total = 1.81
Beach Profiles: 5g00186
Changes between 2013-01 and 2013-06

Accretion = 3.01m, Erosion = -0.67m, Total = 2.35m
Beach Profiles 5g90251
Changes between 2012-05 and 2013-06

Accretion = 9.95  Erosion = 5.89  Total = 4.04
Beach Profiles: 5q00766
Changes between 2012-05 and 2013-06

Accretion = 2.54 Erosion = -5.65 Total = -3.11
Beach Profiles: 5900293
Changes between 2012-01 and 2013-02

Accretion = 7.58  Erosion = -0.15  Total = 7.43
Beach Profiles: 5p00295
Changes between 2012-01 and 2013-02

Accretion = 0.10  Erosion = -1.29  Total = 4.01
Beach Profiles: 5p00299
Changes between 2012-05 and 2013-05

Accretion = 2.17 Erosion = -5.06 Total = -2.99
Beach Profiles: 5q90003
Changes between 2012-05 and 2013-05

Accretion = 1.82  Erosion = -0.22  Total = 4.59
Beach Profiles: 5g00318
Changes between 2012-05 and 2013-05

Accretion = 2.38 Erosion = -2.27 Total = -0.19
Beach Profiles: 5g90322
Changes between 2012-05 and 2013-05

Accretion = 0.48 Erosion = -3.98 Total = -3.50
Beach Profiles: 590326
Changes between 2012-05 and 2013-05

Accretion = 7.78 Erosion = -10.62 Total = -2.84
Beach Profiles 5g00330
Changes between 2012-05 and 2013-05

Accretion = 16.05  Erosion = -9.31  Total = 6.74
Cross sectional area above MP trend for Location: 5g00140 [Wor10] and Reference Profile Set

Area above MP trend, decreasing at -0.365 m2/Year

Survey Date:
- 23/02/2003
- 21/02/2004
- 01/03/2005
- 19/03/2006
- 18/03/2007
- 17/03/2008
- 16/03/2009
- 14/03/2010
- 13/03/2011
- 11/03/2012
- 09/03/2013
- 10/03/2013

Recycling Event: Area Above MP: Area Trend

Graph shows a trend of decreasing area above the MP over time.
Cross-Sectional Area above MP Trend for Location: 5g00181 (LC14) and Reference Profile Set

Area Above MP Trend Slope = -0.179 m²/Year
Cross Sectional Area above MP Trend for Location: 5g00230 [12400] and Reference Profile Set 2

Area Above MP Trend: According at 1.347 m²/year
Cross-sectional Area above MP Trend for Location: 5j03820 [8400] and Reference Profile Set 2

Area Above MP Trend: Increasing at 1.885 m²/Year