

**Poole Bay & Harbour Coastal Group**  
**POOLE BAY & HARBOUR**  
**STRATEGY STUDY**  
**Assessment of Flood**  
**and Coast Defence Options**  
**DURLSTON BAY**

**Contents Amendment Record**

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Signed
0	1	Draft to Purbeck District Council	25 Sept 03	LSBanyard
0	2	Draft to High Point Rendel and PDC	12 Feb 04	LSBanyard
1	0	Final	5 Mar 04	LSBanyard

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# 1

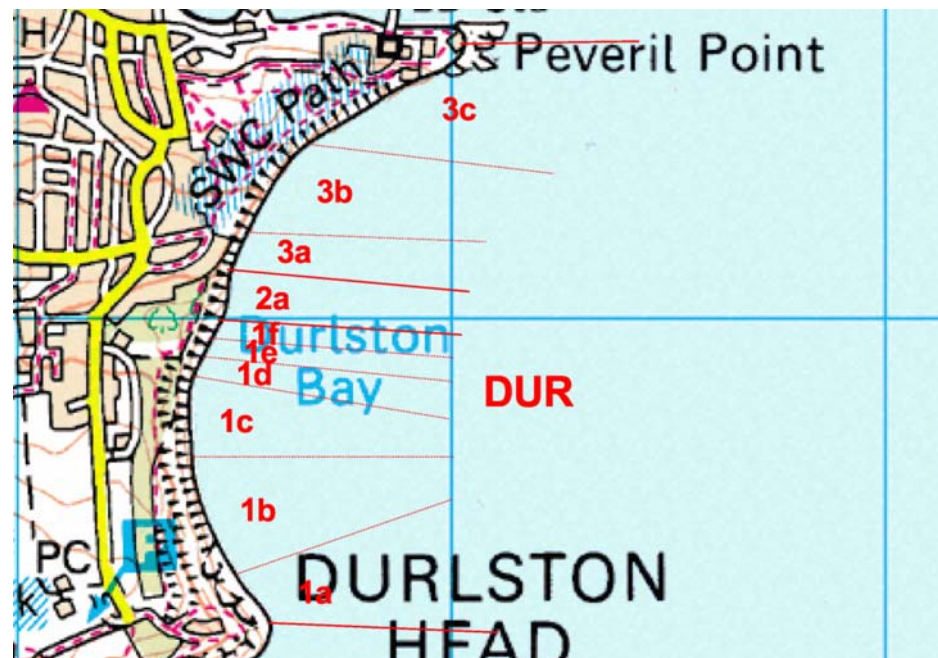
## Introduction

The contents of the Durlston Bay section of the strategy draw principally from the Durlston Bay Coastal Strategy Study that was carried out by High Point Rendel for Purbeck District Council in parallel with the Poole Bay & Harbour Strategy Study.

In the course of the studies, analysis was carried out by Halcrow regarding waves, water levels and sediment transport to inform the Durlston Bay Coastal Strategy Study. Beyond this, no additional analysis or verification has been carried out by Halcrow of the findings of High Point Rendel's work.

The results of the Durlston Bay Coastal Strategy Study are reproduced here for to fulfil the Coastal Group's requirements of having a single strategy document covering the entire coastline between Durlston Head and Hengistbury Head.

The shoreline has been divided into a number of management units, as shown in **Figure 1.1**.



*Figure 1.1 Durlston Bay Management Units*

## 2 Durlston Bay

### 2.1 *Durlston Head - DUR 1a*

This management unit was entitled DUR 1/1 in the Durlston Bay Coastal Strategy Study



#### 2.1.1 *Existing Shoreline & Defences*

This area lies within Durlston Country Park. Two listed features, The Globe and Durlston Head Castle also lie within this area of headland, with grassy slopes leading to sub-vertical cliffs. There are no artificial defences.

#### 2.1.2 *Flood and Coast Defence Problem*

The Durlston Bay Coastal Strategy Study found that:

- The wave erosion on the over steepened coastal cliffs poses a potential threat to the long-term security of Durlston Head Castle.
- Substantial intervention in the form of coastal defences or slope stabilisation measures does not represent an appropriate management strategy.

#### 2.1.3 *Current SMP Policy (adopted 1999)*

The SMP policy is Do Nothing in the Short Term (involving observe and monitor) and Retreat the Existing Line in the Long Term.

2.1.4

*Strategic Options*

The following options have been identified as ways of achieving the SMP Policy:

<b>Strategic Option</b>	<b>Description</b>
Do Nothing	No action taken apart from fulfilling statutory health & safety requirements
Do Nothing (but Inspect)	No action taken apart from fulfilling statutory health & safety requirements plus: Monitoring and inspection focussing on the northern slopes below the castle to assist in the identification of ground movements in these slopes.

2.1.5

*Strategic Environmental Assessment*

An assessment of the potential environmental impacts for this area was undertaken as part of the Durlston Bay Coastal Strategy Study. These have been summarised in **Table 2.1.1**.

Do Nothing (but Inspect) would meet the objectives of avoiding interference with the earth science, nature conservation and coastal processes. However this policy would detrimentally affect the Jurassic Coast World Heritage Site, landscape and recreation, as well as potentially damage Durlston Head Castle in the medium/long term.

2.1.6

*Economic Appraisal*

No economic appraisal was carried out.

2.1.7

*Preferred Strategy*

***It is recommended that the SMP policy be amended to No Active Intervention, in line with the 2001 SMP Guidance.***

***The way of achieving the SMP Policy recommended by the Durlston Bay Coastal Strategy Study is:***

- ***Do Nothing (but Inspect)***
- ***Monitoring and inspection focussing on the northern slopes below the castle to assist in the identification of ground movements in these slopes***

### 2.1.8

#### *Risks and Implications*

There is a potential for damage to Durlston Castle in medium/long-term. In the long term with the onset of instability of the slope, most likely resulting for toe erosion, reactive intervention may be appropriate in the event that such instability poses a threat to the castle and cliff-top infrastructure.

*Table 2.1.1 - Durlston Head Strategy Options (from Durlston Bay Coastal Strategy Study)*

	DESCRIPTION
	Do Nothing (but Inspect)
Heritage Issues	= <sup>1</sup>
Ecology	Neutral
Landscape & Townscape	=/ Neutral
Recreation Amenity	=/ Neutral
Material Assets	= <sup>1</sup>
Socio economics	Neutral
Hydrology & Geology	Neutral
Coastal Processes	Neutral

<sup>1</sup> Potential for damage to Durlston Castle in medium/long term (substantial engineered intervention likely to be unacceptable / impractical)

Key		
Negative Impacts		Positive impacts
=	Minimal Impact	+
=====	Major Impact	+++++

## 2.2

### ***Country Park - DUR 1b***

This management unit was entitled DUR1/2 in the Durlston Bay Coastal Strategy Study



### 2.2.1

#### *Existing Shoreline & Defences*

The shoreline comprises densely vegetated cliffs and slopes (up to 45m high) which back onto the undeveloped land of Durlston Country Park. There are no artificial defences.

### 2.2.2

#### *Flood and Coast Defence Problem*

The Durlston Bay Coastal Strategy Study found that:

- There are no properties or utility services foreseen to be at risk in the next 50 years.
- However the cliff top path is within 4m of the clifftop, so will be threatened by recession of the cliff line

### 2.2.3

#### *Current SMP Policy (adopted 1999)*

The SMP policy is Do Nothing in the Short Term (involving observe and monitor) and Retreat the Existing Line in the Long Term.

### 2.2.4

#### *Strategic Options*

The following options have been identified as ways of achieving the SMP Policy

<b>Strategic Option</b>	<b>Description</b>
Do Nothing	No action taken apart from fulfilling statutory health & safety requirements
Do Nothing (but Inspect)	No action taken apart from fulfilling health & safety requirements A regular cliff top inspection programme to assist the early identification of potential slope failure

2.2.5

*Strategic Environmental Assessment*

An assessment of the potential environmental impacts for this area was undertaken as part of the Durlston Bay Coastal Strategy Study. These have been summarised in **Table 2.2.1**.

Adopted policy of Do Nothing (but Inspect) would meet all the objectives of avoiding interference with the earth science, nature conservation, landscape value and recreation. However there is a possibility that the clifftop path may be lost with the recession of the coastline.

2.2.6

*Economic Appraisal*

No economic appraisal was carried out.

2.2.7

*Preferred Strategy*

***It is recommended that the SMP policy be amended to No Active Intervention, in line with the 2001 SMP Guidance.***

***The way of achieving the SMP Policy recommended by the Durlston Bay Coastal Strategy Study is:***

- ***Do Nothing (but Inspect)***
- ***A regular cliff top inspection programme to assist the early identification of potential slope failure***

## 2.2.8

### *Risks and Implications*

There will be the potential loss of the clifftop path. There is an opportunity to set-back the cliff top path in advance of long-term erosion, through consultation with landowners.

*Table 2.2.1 – Country Park Strategy Options*

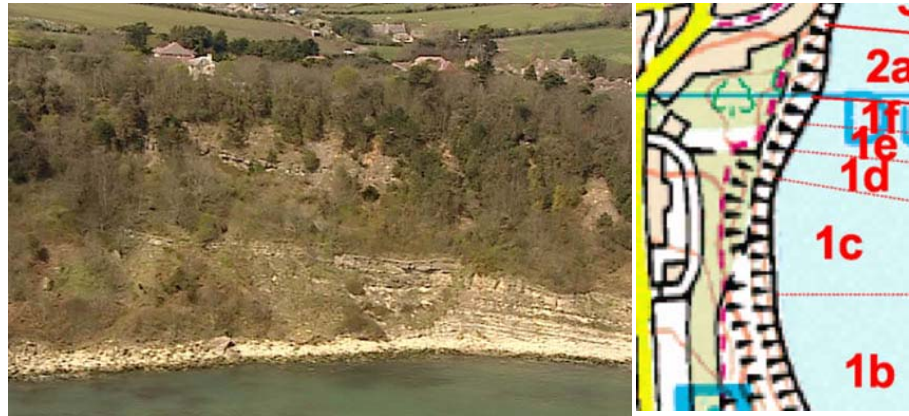
	DESCRIPTION
	Do Nothing (but Inspect)
Heritage Issues	Neutral
Ecology	Neutral
Landscape & Townscape	Neutral
Recreation Amenity	Neutral
Material Assets	Neutral
Socio economics	Neutral
Hydrology & Geology	Neutral
Coastal Processes	Neutral

Key		
Negative Impacts		Positive impacts
=	Minimal Impact	+
=====	Major Impact	+++++

## 2.3

### *Durlston Road - DUR 1c*

This management unit was entitled DUR1/3 in the Durlston Bay Coastal Strategy Study



#### 2.3.1

##### *Existing Shoreline & Defences*

The shoreline comprises flat parkland fronted by steep, high and densely vegetated slopes. There are no artificial defences.

#### 2.3.2

##### *Flood and Coast Defence Problem*

The Durlston Bay Coastal Strategy Study found that:

- There are a number of residential houses to the landward side of Durlston Road. It is considered that these properties and associated roads are situated far enough back from the cliffline to be safe from the impacts of any potential landslide activity likely to occur within the strategy timeframe.
- However the cliff top path is only 8m from an active retreating escarpment, so will be threatened by recession of the cliffline.

#### 2.3.3

##### *Current SMP Policy (adopted 1999)*

The SMP policy is Do Nothing in the Short Term (involving observe and monitor) and Retreat the Existing Line in the Long Term.

#### 2.3.4

##### *Strategic Options*

The following options have been identified as ways of achieving the SMP Policy

<b>Strategic Option</b>	<b>Description</b>
Do Nothing	No action taken apart from fulfilling statutory health & safety requirements
Do Nothing (but Inspect)	No action taken apart from fulfilling statutory health & safety requirements A regular cliff top inspection programme to assist the early identification of potential slope failure

### 2.3.5

#### *Strategic Environmental Assessment*

An assessment of the potential environmental impacts for this area was undertaken as part of the Durlston Bay Coastal Strategy Study. These have been summarised in **Table 2.3.1**.

Adopted policy of Do Nothing (but Inspect) would meet all the objectives of avoiding interference with the earth science, nature conservation, landscape value and recreation. However there is a possibility that the clifftop path may be lost with the recession of the coastline.

### 2.3.6

#### *Economic Appraisal*

No economic appraisal was carried out.

### 2.3.7

#### *Preferred Strategy*

***It is recommended that the SMP policy be amended to No Active Intervention, in line with the 2001 SMP Guidance.***

***The way of achieving the SMP Policy recommended by the Durlston Bay Coastal Strategy Study is:***

- ***Do Nothing (but Inspect)***
- ***A regular cliff top inspection programme to assist the early identification of potential slope failure***

### 2.3.8

#### *Risks and Implications*

There will be the potential loss of the clifftop path. There is an opportunity to set-back the cliff top path in advance of long-term erosion, through consultation with landowners.



*Table 2.3.1 - Durlston Road Strategy Options*

	DESCRIPTION
	Do Nothing (but Inspect)
Heritage Issues	Neutral
Ecology	Neutral
Landscape & Townscape	Neutral
Recreation Amenity	Neutral
Material Assets	Neutral
Socio economics	Neutral
Hydrology & Geology	Neutral
Coastal Processes	Neutral

Key		
Negative Impacts		Positive impacts
=	Minimal Impact	+
=====	Major Impact	+++++

## 2.4

### *Old Slip - DUR 1d*

This management unit was entitled DUR1/4 in the Durlston Bay Coastal Strategy Study



### 2.4.1

#### *Existing Shoreline & Defences*

The shoreline comprises flat parkland fronted by sloping, high and densely vegetated slopes. There is evidence of recent failure of the cliffline. There are no artificial defences.

### 2.4.2

#### *Flood and Coast Defence Problem*

The Durlston Bay Coastal Strategy Study found that:

- There are no properties or utility services foreseen to be at risk in the next 50 years.
- However the cliff top path may be threatened by recession of the cliffline.

### 2.4.3

#### *Current SMP Policy (adopted 1999)*

The SMP policy is Do Nothing in the Short Term (involving observe and monitor) and Retreat the Existing Line in the Long Term.

### 2.4.4

#### *Strategic Options*

The following options have been identified as ways of achieving the SMP Policy

<b>Strategic Option</b>	<b>Description</b>
Do Nothing	No action taken apart from fulfilling statutory health & safety requirements
Do Nothing (but Inspect)	No action taken apart from fulfilling statutory health & safety requirements A regular cliff top inspection programme to assist the early identification of potential slope failure

#### 2.4.5

##### *Strategic Environmental Assessment*

An assessment of the potential environmental impacts for this area was undertaken as part of the Durlston Bay Coastal Strategy Study. These have been summarised in **Table 2.4.1**.

Adopted policy of Do Nothing (but Inspect) would meet all the objectives of avoiding interference with the earth science, nature conservation, landscape value and recreation. However there is a possibility that the clifftop path may be lost with the recession of the coastline.

#### 2.4.6

##### *Economic Appraisal*

No economic appraisal was carried out.

#### 2.4.7

##### *Preferred Strategy*

***It is recommended that the SMP policy be amended to No Active Intervention, in line with the 2001 SMP Guidance.***

***The way of achieving the SMP Policy recommended by the Durlston Bay Coastal Strategy Study is:***

- ***Do Nothing (but Inspect)***
- ***A regular cliff top inspection programme to assist the early identification of potential slope failure***

#### 2.4.8

##### *Risks and Implications*

There will be the potential loss of the cliff top path. There is an opportunity to set-back the cliff top path in advance of long-term erosion, through consultation with landowners.



*Table 2.4.1 - Durlston Head Strategy Options*

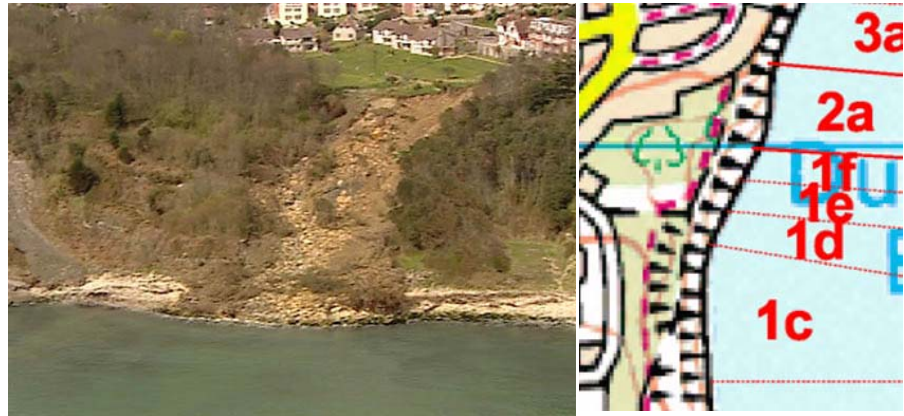
	DESCRIPTION
	Do Nothing (but Inspect)
Heritage Issues	Neutral
Ecology	Neutral
Landscape & Townscape	Neutral
Recreation Amenity	Neutral
Material Assets	Neutral
Socio economics	Neutral
Hydrology & Geology	Neutral
Coastal Processes	Neutral

Key		
Negative Impacts		Positive impacts
=	Minimal Impact	+
=====	Major Impact	+++++

## 2.5

### *Pinecliff Walk Landslide - DUR 1e*

This management unit was entitled DUR1/5 in the Durlston Bay Coastal Strategy Study



### 2.5.1

#### *Existing Shoreline & Defences*

The shoreline comprises a cliff of limestones and mudstones forming a substantial landslide which was subject to extensive activity in 2000/2001. There are no artificial defences.

### 2.5.2

#### *Flood and Coast Defence Problem*

The Durlston Bay Coastal Strategy Study found that:

- There are 53 properties foreseen to be at risk in the next 50 years, which if no action is taken would result in damages to a Present Value of £3.9million

### 2.5.3

#### *Current SMP Policy (adopted 1999)*

The SMP policy is Do Nothing in the Short Term (involving observe and monitor) and Retreat the Existing Line in the Long Term.

### 2.5.4

#### *Strategic Options*

Since the SMP Policy was adopted, the extensive activity in 2000/2001 has prompted the following options to be considered:

Strategic Option	Description
Option 1	<ul style="list-style-type: none"> <li>• Emergency stream diversion (completed)</li> <li>• Do Nothing</li> </ul>
Option 2	<ul style="list-style-type: none"> <li>• Emergency stream diversion (completed)</li> <li>• Cliff top drainage improvements</li> <li>• Landslide surface drainage</li> <li>• Partial treatment of landslide inc. shear piles in Upper Escarpment</li> </ul>
Option 3	<ul style="list-style-type: none"> <li>• Emergency stream diversion (completed)</li> <li>• Cliff top drainage improvements</li> <li>• Landslide surface drainage</li> <li>• Full treatment of landslide inc. shear piles in Upper Escarpment and Mid Escarpment</li> </ul>
Option 4	<ul style="list-style-type: none"> <li>• Emergency stream diversion (completed)</li> <li>• Cliff top drainage improvements</li> <li>• Landslide surface drainage</li> <li>• Full treatment of landslide inc. reprofiling of Upper Escarpment and construction of earth-fill buttress against Mid Escarpment</li> </ul>
Option 5	<ul style="list-style-type: none"> <li>• Emergency stream diversion (completed)</li> <li>• Cliff top drainage improvements</li> <li>• Landslide surface drainage</li> <li>• Partial treatment of landslide inc. reprofiling of Upper Escarpment</li> </ul>

### 2.5.5

#### *Strategic Environmental Assessment*

An assessment of the potential environmental impacts for this area was undertaken as part of the Durlston Bay Coastal Strategy Study. These have been summarised in **Table 2.5.1**.

The assessment found none of the options would affect heritage issues, recreation and amenity, hydrology and geology and coastal processes. All of the options would have some degree of negative impact on the ecology of the area in particular those features associated with the Isle of Portland to Studland Cliffs cSAC. It was considered that Option 5 could be accommodated without serious environmental damage whilst those associated with the more extensive Option 3 works may need to be subject of a more detailed assessment should this option be pursued.

2.5.6

*Economic Appraisal*

An economic appraisal was carried out as part of the Durlston Bay Coastal Strategy Study, the results of which are presented below:

	Option 1	Option 2	Option 3	Option 4	Option 5
PV costs PV <sub>c</sub> <sup>(1)</sup>		909,540	871,000	874,090	777,970
PV damage PV <sub>d</sub>	3,946,580	938,780	1,318,080	1,318,080	1,087,420
PV damage avoided		3,007,800	2,628,500	2,628,500	2,859,160
Net Present Value NPV		3,007,800	2,628,500	2,628,500	2,859,160
Average benefit/cost ratio		3.31	3.02	3.01	3.68

Notes

(1) including Optimism Bias

Option 5 achieves the highest benefit cost ratio, but Option 3 is proposed as the preferred solution.

The Study considered that there were, however, exceptional circumstances surrounding this area that do not conform to normal rules of economic assessment:

- “There is uncertainty around the actual probabilities of loss, which are based on a subjective assessment of loss of value in effected properties. This uncertainty is greater were minimal intervention to occur
- The losses will be borne directly by local residents in terms of loss of property value rather than tangible structural damage
- The diminishing value is likely to be marked in the short term due to the risk (perceived and real) posed by recent landslide activity
- The cost of short-term engineering intervention can be more readily calculated than that of future intervention where circumstances become less readily definable. In this respect the optimism bias factor (60% in all cases) is likely to lead to an overestimate in short-term costs, and underestimate of long-term costs. Notwithstanding the details of the economic assessment that are based on the best cost forecast possible given current knowledge, comprehensive short-term intervention should be considered more favourably than arises from economic appraisal
- The engineering and economic appraisals are based on historical precedent, including large-scale landslide activity recurring on a 20-30 year

return period. Changes in circumstances especially arising from the altered stress regime within the coastal slopes, but also arising from the increased precipitation rates lead to particular difficulties in accurately predicting risk and the future pattern of landslide movements. Whilst monitoring is proposed to assist in quantification of the future risk, a comprehensive intervention at this stage must assist in controlling unprecedented and unpredictable ground movements.”

2.5.7

*Preferred Strategy*

***On the basis of the Durlston Bay Coastal Strategy Study, it is recommended that the SMP policy be amended to Limited Intervention on the basis that the shoreline would not be constrained from ongoing erosion.***

***The way of achieving the SMP Policy recommended by the Durlston Bay Coastal Strategy Study is:***

- ***Emergency stream diversion (completed)***
- ***Cliff top drainage improvements***
- ***Landslide surface drainage***
- ***Full treatment of landslide inc. shear piles in Upper Escarpment and Mid Escarpment***

2.5.8

*Scheme Prioritisation*

The scheme prioritisation scores for the preferred option under the LDW14 system are provided.

economic score	people score	environment score	total
5.04	5.56	0.65	11.25

***Table 8.6 New Scheme Prioritisation Scoring (LDW14 rev 4/02)***

2.5.9

*Risks and Implications*

The following risks were identified during the Study:

- Slope instability within the Pinecliff Walk Landslide

- Loss of debris at the toe of the Pinecliff Walk Landslide
- Slope instability in the vicinity of the Durlston Cliff Flats
- Slope instability in the vicinity of Durlston Wall
- Cliff top drainage and third party interference
- Slope instability elsewhere
- The design life of the preferred scheme
- Timing of the works
- Cost estimates

*Table 2.5.1 - Durlston Head Strategy Options*

	DESCRIPTION				
	Option 1	Option 2	Option 3	Option 4	Option 5
<b>Heritage Issues</b>	Neutral	Neutral	Neutral	Neutral	Neutral
<b>Ecology</b>	= <sup>1</sup>	== <sup>5</sup>	=== <sup>5</sup>	==== <sup>7</sup>	= <sup>9</sup>
<b>Landscape &amp; Townscape</b>	= <sup>2</sup>	+	++	++	++
<b>Recreation Amenity</b>	Neutral	Neutral	Neutral	Neutral	Neutral
<b>Material Assets</b>	= <sup>3</sup>	+++	++++	++++	+++
<b>Socio economics</b>	= <sup>4</sup>	+++	++++	++++	+++
<b>Hydrology &amp; Geology</b>	Neutral	Neutral <sup>6</sup>	Neutral <sup>6</sup>	Neutral <sup>8</sup>	Neutral <sup>6</sup>
<b>Coastal Processes</b>	Neutral	Neutral	Neutral	Neutral	Neutral

Key		
Negative Impacts		Positive impacts
=	Minimal Impact	+
=====	Major Impact	+++++

<sup>1</sup> Temporary disruption during stream construction but habitat recovery anticipated

<sup>2</sup> Loss of gardens and possible damage to structures unsightly

<sup>3</sup> Potential loss of properties

<sup>4</sup> Economic and general disruption to residents of threatened properties

<sup>5</sup> In addition to the stream construction some temporary intrusion onto the Upper Escarpment (pioneer species habitat) and for drainage installation. Improved drainage and stability may encourage establishment of different habitat. Possible implications for cSAC.

<sup>6</sup> Drainage regime would be affected by measures but adverse impacts not anticipated

<sup>7</sup> In addition to the stream construction some temporary intrusion onto the Upper Escarpment (pioneer species habitat) and for drainage installation. Improved drainage, stability and new buttress fill likely to encourage establishment of different habitat.

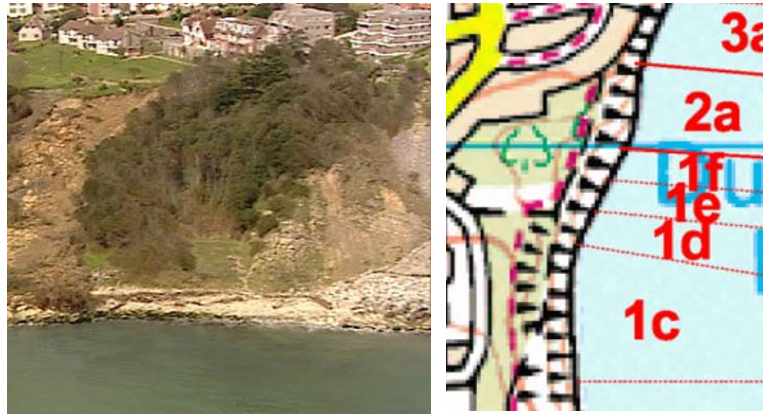
<sup>8</sup> Drainage regime would be affected by measures but adverse impacts not anticipated. Possible implications for cSAC.

<sup>9</sup> In addition to the stream construction some temporary intrusion onto the Upper Escarpment (pioneer species habitat) and for drainage installation. Re-profiling largely confined to gardens.

## 2.6

### *Purbeck Heights Woods - DUR 1f*

This management unit was entitled DUR1/6 in the Durlston Bay Coastal Strategy Study



### 2.6.1

#### *Existing Shoreline & Defences*

The Durlston Bay Coastal Strategy Study found that the coastal cliffs and foreshore of this management unit share the principal characteristics of the southern sections of the Bay, comprising a sea cliff at the toe of the cliff, rising through a series of escarpments separated by more gentle colluvium slopes. The escarpments show no sign of activity. The sea cliff and the immediate area inland form a back tilted block. This is a block of land that has been displaced by sliding along its base at or about the foreshore level. The displacement occurred with the toe being pushed out relative to the crest of the block resulting in an overall tilt back. This movement is evidently of long standing.

### 2.6.2

#### *Flood and Coast Defence Problem*

Assets at risk from longer term cliff movement include properties on Belle Vue Road. The location of this management unit is a spur between two active landslide areas, together with incipient ground movement within the sea cliff, must indicate a high probability of future mass movement in the longer term.

### 2.6.3

#### *Current SMP Policy (adopted 1999)*

The SMP policy is Do Nothing in the Short Term (involving observe and monitor) and Retreat the Existing Line in the Long Term.

2.6.4

*Strategic Options*

The following options have been identified as ways of achieving the SMP Policy

Strategic Option	Description
Do Nothing	No action taken apart from fulfilling statutory health & safety requirements
Do Nothing (but Inspect and Monitor)	No action apart from fulfilling statutory health and safety requirements but including inspection & monitoring: <ul style="list-style-type: none"> <li>• Six-monthly inspection of the coastline to assist early identification of changing slope conditions</li> <li>• Installing a system of inclinometers and remote instruments including early warning system</li> </ul>

2.6.5

*Strategic Environmental Assessment*

An assessment of the potential environmental impacts for this area was undertaken as part of the Durlston Bay Coastal Strategy Study. These have been summarised in **Table 2.6.1**.

Adopted policy of no intervention is the preferred environmental option and would meet the objectives of avoiding interference with the earth science, nature conservation and landscape value. It is possible that this option would reduce the recreational resources within this process unit.

2.6.6

*Economic Appraisal*

No economic appraisal was necessary

2.6.7

*Preferred Strategy*

***On the basis of the Durlston Bay Coastal Strategy Study, it is recommended that the SMP policy be amended to Limited Intervention.***

***The way of achieving the SMP Policy recommended by the Durlston Bay Coastal Strategy Study is:***

***No action apart from fulfilling health and safety requirements but including inspection & monitoring:***

- ***Six-monthly inspection of the coastline to identify changes in landslide activity***
- ***Installing a system of inclinometers and remote instruments***

2.6.8

*Risks and Implications*

There is considerable uncertainty regarding the future stability of the cliff. In the event of a renewed instability either by re-activation of scarp retreat or instability of the sea cliff, large scale engineering intervention is likely to be required.

*Table 2.6.1 - Durlston Head Strategy Options*

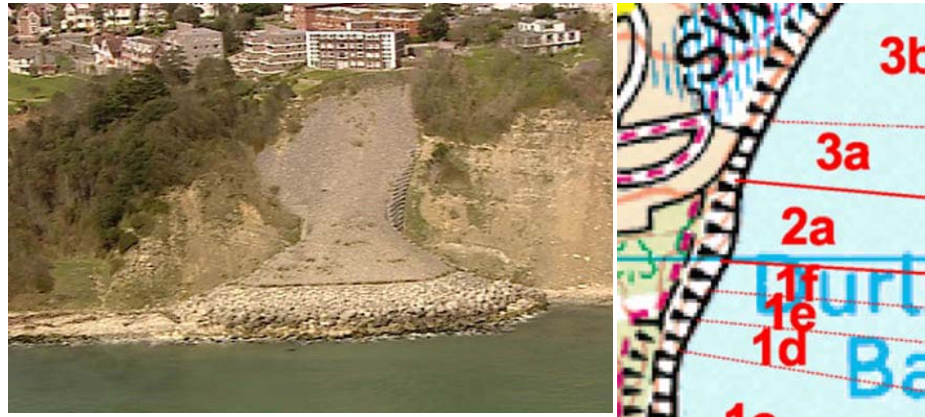
	DESCRIPTION
	Do Nothing (but Inspect and Monitor)
Heritage Issues	Neutral
Ecology	Neutral
Landscape & Townscape	=
Recreation Amenity	Neutral
Material Assets	=
Socio economics	=
Hydrology & Geology	Neutral
Coastal Processes	Neutral

Key		
Negative Impacts		Positive impacts
=	Minimal Impact	+
=====	Major Impact	+++++

## 2.7

### *Durlston Cliff Flats Scheme - DUR 2*

This management unit was entitled DUR2/1 in the Durlston Bay Coastal Strategy Study



### 2.7.1

#### *Existing Shoreline & Defences*

The shoreline comprises a cliff approximately 50m high, supported by a rock armour revetment with rockfill and cliff drainage measures above. The revetment was constructed in 1989 to improve the ground stability for the Durlston Cliff Flats.

### 2.7.2

#### *Flood and Coast Defence Problem*

The Durlston Bay Coastal Strategy Study found that the stabilisation works appear to be in good condition, but this does not however provide surety that the works will perform over the long-term. The performance of cliff drainage and condition of the cliff material cannot be assessed as these are obscured by the works. Extension of the ground is apparent in cracks in structures behind and south of the flats. This may be the result of settlement of the ground below these structures, an indication of incipient ongoing clifftop instability, or the result of poor drainage in the walls. However these cracks are believed to be of long standing and have not widened in recent years.

However the combination of movement in the grounds cannot be ignored as precursor indications of landslide activity. Further information on ground movement is required and the installation of a monitoring system would provide the most suitable means of gathering data. An early warning system may also be

incorporated into the system in order that notice is given in the event of accelerated movements that could compromise the stability of Flats.

2.7.3

*Current SMP Policy (adopted 1999)*

Hold the Line in the Short Term (involving observe and monitor) and Do Nothing in the Long Term (subject to erosion rates, cliff fall rates, economic viability and future planning policy for Durlston Cliff Flats).

2.7.4

*Strategic Options*

The following options have been identified as ways of achieving the SMP Policy

Strategic Option	Description
Do Nothing	No action taken apart from fulfilling statutory health & safety requirements
Do Nothing (but Inspect and Monitor)	No action taken apart from fulfilling statutory health & safety requirements but including inspection & monitoring: <ul style="list-style-type: none"> <li>• Six-monthly inspection of the coastline to assist early identification of changing slope conditions</li> <li>• Installing a system of inclinometers and remote instruments including early warning system</li> </ul>

2.7.5

*Strategic Environmental Assessment*

An assessment of the potential environmental impacts for this area was undertaken as part of the Durlston Bay Coastal Strategy Study. These have been summarised in **Table 2.7.1**.

Do Nothing would meet the objectives of avoiding interference with the earth science, nature conservation, recreation and coastal processes. However this policy would lead to the potential loss of properties and gardens, with socio-economic disruption to residents of threatened property.

2.7.6

*Economic Appraisal*

No economic appraisal was necessary

2.7.7

*Preferred Strategy*

***It is recommended that the SMP policy be remain as Hold the Line in the Short Term and Do Nothing in the Long Term, as a result of the findings of the Durlston Bay Coastal Strategy Study.***

***The way of achieving the SMP Policy recommended by the Durlston Bay Coastal Strategy Study is:***

***No action taken apart from fulfilling health & safety requirements but including inspection & monitoring:***

- ***Inspections to assist early identification of changing slope conditions***
- ***Install remote monitoring instrumentation including early warning system***

2.7.8

*Risks and Implications*

There is a potential threat to one property (No. 3 Belle Vue Road), as well as a loss of gardens.

*Table 2.7.1 - Durlston Cliff Flats Scheme Strategy Options*

	DESCRIPTION
	Do Nothing (but Inspect and Monitor)
Heritage Issues	Neutral
Ecology	Neutral
Landscape & Townscape	=
Recreation Amenity	Neutral
Material Assets	=
Socio economics	=
Hydrology & Geology	Neutral
Coastal Processes	Neutral

Key		
Negative Impacts		Positive impacts
=	Minimal Impact	+
=====	Major Impact	+++++

## 2.8

### *Durlston Wall - DUR 3a*

This management unit was entitled DUR3/1 in the Durlston Bay Coastal Strategy Study



#### 2.8.1

##### *Existing Shoreline & Defences*

The shoreline comprises a cliff of Portland limestone, partially vegetated with a narrow natural rock beach. There are no artificial defences.

#### 2.8.2

##### *Flood and Coast Defence Problem*

The cliff is immediately to the north of the stabilisation works undertaken in 1989. These works have reduced the rate of marine erosion from the toe of the cliff. The exposed upper cliff will continue to be weakened by weathering. Properties at Belle Vue Road are in close vicinity to the cliff top. It is possible that cliff top footpaths may be lost in the long-term to cliff failure.

#### 2.8.3

##### *Current SMP Policy (adopted 1999)*

Do Nothing in the Short Term (involving observe and monitor) and Do Nothing in the Long Term (subject to erosion rates, cliff fall rates, economic viability and future planning policy for Durlston Cliff Flats).

#### 2.8.4

##### *Strategic Options*

The following options have been identified as ways of achieving the SMP Policy

Strategic Option	Description
Do Nothing	No action taken apart from fulfilling statutory health & safety requirements
Limited Intervention	No action taken initially apart from fulfilling statutory health & safety requirements but including inspection & monitoring and possible minor engineering intervention: <ul style="list-style-type: none"> <li>• Six-monthly inspection of the coastline to assist early identification of changing slope conditions</li> <li>• Minor engineering intervention be considered if necessary as a result of future slope failure</li> </ul>

As a result future slope failure, action may then involve minor engineering intervention as landslide activity is manifest, but full protection of the cliff top properties is unlikely to provide a positive benefit cost, unless the instability also affected adjacent properties within DUR 1f and DUR 2a.

2.8.5

*Strategic Environmental Assessment*

An assessment of the potential environmental impacts for this area was undertaken as part of the Durlston Bay Coastal Strategy Study. These have been summarised in **Table 2.8.1**.

Adopted policy of Do Nothing but Inspect is the preferred environmental option and would meet all the objectives of avoiding interference with the earth science, nature conservation and landscape value. A regular cliff top inspection programme would assist the early identification of potential slope failure.

2.8.6

*Economic Appraisal*

No economic appraisal was necessary

2.8.7

*Preferred Strategy*

***It is recommended that the SMP policy be amended to Limited Intervention, as a result of the findings of the Durlston Bay Coastal Strategy Study,***

***No action taken apart from fulfilling health & safety requirements but including inspection & monitoring:***

- ***Six-monthly inspection of the coastline to assist early identification of changing slope conditions***
- ***Minor engineering intervention be considered if necessary***

2.8.8

*Risks and Implications*

There will be the potential loss of the clifftop path. This would need to be set back, and it is recommended that each time this is done, the area of land between the footpath and the new cliff edge could be used for creating cliff top grassland, to provide an area of habitat and landscape feature. There is an opportunity to set-back the cliff top path in advance of long-term erosion, through consultation with landowners.

*Table 2.8.1 - Durlston Wall Strategy Options*

	DESCRIPTION
	Do Nothing (but Inspect)
Heritage Issues	Neutral
Ecology	Neutral
Landscape & Townscape	Neutral
Recreation Amenity	Neutral
Material Assets	Neutral
Socio economics	Neutral
Hydrology & Geology	Neutral
Coastal Processes	Neutral

Key		
Negative Impacts		Positive impacts
=	Minimal Impact	+
=====	Major Impact	+++++

## 2.9

### *Swanage Town Park - DUR 3b*

This management unit was entitled DUR3/2 in the Durlston Bay Coastal Strategy Study



#### 2.9.1

##### *Existing Shoreline & Defences*

The shoreline comprises the coastal frontage of Swanage Town Park, with cliffs at the southern end with steep grassy slopes leading down to sub-vertical lower profiles. The foreshore is composed of a wave action platform overlain by boulders. There are no artificial defences.

#### 2.9.2

##### *Flood and Coast Defence Problem*

The cliffline is backed by the open grassy expanse of the Town Park that falls within the Swanage Conservation area. No properties or other structures are located in the vicinity of the cliffline. A network of footpaths cross the park, which are potentially vulnerable in the long-term to cliff failure.

#### 2.9.3

##### *Current SMP Policy (adopted 1999)*

Do Nothing in the Short Term (involving observe and monitor) and Do Nothing in the Long Term (subject to erosion rates, cliff fall rates and economic viability).

2.9.4

*Strategic Options*

The following options have been identified as ways of achieving the SMP Policy

<b>Strategic Option</b>	<b>Description</b>
Do Nothing	No action taken apart from fulfilling statutory health & safety requirements
Do Nothing (but inspect)	No action taken apart from fulfilling statutory health & safety requirements but including inspection & monitoring: <ul style="list-style-type: none"> <li>• Six-monthly inspection of the coastline to assist early identification of changing slope conditions</li> </ul>

2.9.5

*Strategic Environmental Assessment*

An assessment of the potential environmental impacts for this area was undertaken as part of the Durlston Bay Coastal Strategy Study. These have been summarised in **Table 2.9.1**.

Adopted policy of Do Nothing but Inspect would meet all the objectives of avoiding interference with the earth science, nature conservation and landscape value. A regular cliff top inspection programme would assist the early identification of potential slope failure. Subsequent action may then involve the landward realignment of the clifftop footpath.

2.9.6

*Economic Appraisal*

No economic appraisal was necessary

2.9.7

*Preferred Strategy*

***It is recommended that the SMP policy be amended to No Active Intervention, as a result of the findings of the Durlston Bay Coastal Strategy Study,***

***No action taken apart from fulfilling health & safety requirements but including inspection & monitoring:***

- ***Six-monthly inspection of the coastline to assist early identification of changing slope conditions***

### 2.9.8

#### *Risks and Implications*

There will be the potential loss of the cliff top path. This would need to be set back, and it is recommended that each time this is done, the area of land between the footpath and the new cliff edge could be used for creating cliff top grassland, to provide an area of habitat and a landscape feature. There is an opportunity to set-back the cliff top path in advance of long-term erosion, through consultation with landowners.

*Table 2.9.1 - Swanage Town Park Strategy Options*

	DESCRIPTION
	Do Nothing (but Inspect)
Heritage Issues	Neutral
Ecology	Neutral
Landscape & Townscape	Neutral
Recreation Amenity	Neutral
Material Assets	Neutral
Socio economics	Neutral
Hydrology & Geology	Neutral
Coastal Processes	Neutral

Key		
Negative Impacts		Positive impacts
=	Minimal Impact	+
=====	Major Impact	+++++

## 2.10

### *Peveril Point - DUR 3c*

This management unit was entitled DUR3/3 in the Durlston Bay Coastal Strategy Study



#### 2.10.1

##### *Existing Shoreline & Defences*

The shoreline comprises a town car park. There are no artificial defences.

#### 2.10.2

##### *Flood and Coast Defence Problem*

The Durlston Bay Coastal Strategy Study found that the assessment of historic recession rates indicates there to be no threat to properties by cliff top recession during the timeframe of the Strategy. This may alter as this section is exposed to the most aggressive marine conditions within the Bay, and recession rates may increase due to effects of climate change.

#### 2.10.3

##### *Current SMP Policy (adopted 1999)*

Do Nothing in the Short Term (involving observe and monitor) and Do Nothing in the Long Term (subject to erosion rates, cliff fall rates, economic viability and future planning policy for Durlston Cliff Flats).

#### 2.10.4

##### *Strategic Options*

The following options have been identified as ways of achieving the SMP Policy

Strategic Option	Description
Do Nothing	No action taken apart from fulfilling statutory health & safety requirements
Do Nothing (but inspect)	No action taken apart from fulfilling statutory health & safety requirements but including inspection & monitoring: <ul style="list-style-type: none"> <li>• Six-monthly inspection of the coastline to assist early identification of changing slope conditions</li> </ul>

A cliff top monitoring programme would assist the early identification of cliff line retreat and permit measurements of rates of retreat, thereby helping to inform the development of future coastal management strategy. A regular inspection programme should be implemented to provide early indications of slope failure. Subsequent action may then involve the landward realignment of the cliff top footpath and a possible reassessment of the 'Do Nothing' strategy with regard to properties within this section.

#### 2.10.5

##### *Strategic Environmental Assessment*

An assessment of the potential environmental impacts for this area was undertaken as part of the Durlston Bay Coastal Strategy Study. These have been summarised in **Table 2.10.1**.

Adopted policy of Do Nothing but Inspect is the preferred environmental option and would meet all the objectives of avoiding interference with the earth science, nature conservation and landscape value.

#### 2.10.6

##### *Economic Appraisal*

No economic appraisal was necessary

#### 2.10.7

##### *Preferred Strategy*

***It is recommended that the SMP policy be amended to No Active Intervention, as a result of the findings of the Durlston Bay Coastal Strategy Study,***

***No action taken apart from fulfilling health & safety requirements but including inspection & monitoring:***

- ***Six-monthly inspection of the coastline to assist early identification of changing slope conditions***

### 2.10.8

#### *Risks and Implications*

There will be the potential loss of the clifftop path. This would need to be set back, and it is recommended that each time this is done, the area of land between the footpath and the new cliff edge could be used for creating cliff top grassland, to provide an area of habitat and a landscape feature. There is an opportunity to set-back the cliff top path in advance of long-term erosion, through consultation with landowners.

*Table 2.10.1 – Peveril Point Strategy Options*

	DESCRIPTION
	Do Nothing (but Inspect)
Heritage Issues	Neutral
Ecology	Neutral
Landscape & Townscape	Neutral
Recreation Amenity	Neutral
Material Assets	Neutral
Socio economics	Neutral
Hydrology & Geology	Neutral
Coastal Processes	Neutral

Key		
Negative Impacts		Positive impacts
=	Minimal Impact	+
=====	Major Impact	+++++