



**SID 5** **Research Project Final Report**

● **Note**

In line with the Freedom of Information Act 2000, Defra aims to place the results of its completed research projects in the public domain wherever possible. The SID 5 (Research Project Final Report) is designed to capture the information on the results and outputs of Defra-funded research in a format that is easily publishable through the Defra website. A SID 5 must be completed for all projects.

● This form is in Word format and the boxes may be expanded or reduced, as appropriate.

● **ACCESS TO INFORMATION**

The information collected on this form will be stored electronically and may be sent to any part of Defra, or to individual researchers or organisations outside Defra for the purposes of reviewing the project. Defra may also disclose the information to any outside organisation acting as an agent authorised by Defra to process final research reports on its behalf. Defra intends to publish this form on its website, unless there are strong reasons not to, which fully comply with exemptions under the Environmental Information Regulations or the Freedom of Information Act 2000.

Defra may be required to release information, including personal data and commercial information, on request under the Environmental Information Regulations or the Freedom of Information Act 2000. However, Defra will not permit any unwarranted breach of confidentiality or act in contravention of its obligations under the Data Protection Act 1998. Defra or its appointed agents may use the name, address or other details on your form to contact you in connection with occasional customer research aimed at improving the processes through which Defra works with its contractors.

**Project identification**

1. Defra Project code

2. Project title

3. Contractor organisation(s)

4. Total Defra project costs (agreed fixed price)

5. Project: start date .....

end date .....

6. It is Defra's intention to publish this form.  
Please confirm your agreement to do so..... YES  NO

(a) When preparing SID 5s contractors should bear in mind that Defra intends that they be made public. They should be written in a clear and concise manner and represent a full account of the research project which someone not closely associated with the project can follow.

Defra recognises that in a small minority of cases there may be information, such as intellectual property or commercially confidential data, used in or generated by the research project, which should not be disclosed. In these cases, such information should be detailed in a separate annex (not to be published) so that the SID 5 can be placed in the public domain. Where it is impossible to complete the Final Report without including references to any sensitive or confidential data, the information should be included and section (b) completed. NB: only in exceptional circumstances will Defra expect contractors to give a "No" answer.

In all cases, reasons for withholding information must be fully in line with exemptions under the Environmental Information Regulations or the Freedom of Information Act 2000.

(b) If you have answered NO, please explain why the Final report should not be released into public domain

## Executive Summary

7. The executive summary must not exceed 2 sides in total of A4 and should be understandable to the intelligent non-scientist. It should cover the main objectives, methods and findings of the research, together with any other significant events and options for new work.

### Background to the study

Defra is assessing a number of options designed to enable coastal communities to adapt to coastal erosion risk. To ensure that the assessment of the options is based on the best information available, there is a need to better understand how coastal erosion risk affects local property values. In particular, Defra needs to understand how property values change over time as erosion progresses and as properties are brought closer to the edge of the cliff up to the point that they are uninhabitable.

### Main aims and objectives

The objective of the study is to provide information and analysis that will help in the understanding of how property prices respond to coastal erosion risk. The study considers two specific contexts: where there has never been a defence and where there has been a decision to withdraw public investment from publicly funded coast protection works.

The aim of the study is to answer two overall study questions:

1. How do asset values respond to coastal erosion risk?
2. How do asset values in England respond to coastal erosion risk and in particular to a decision to withdraw investment in publicly funded coast protection works?

### Results and conclusions

#### *How do asset values respond to erosion risk?*

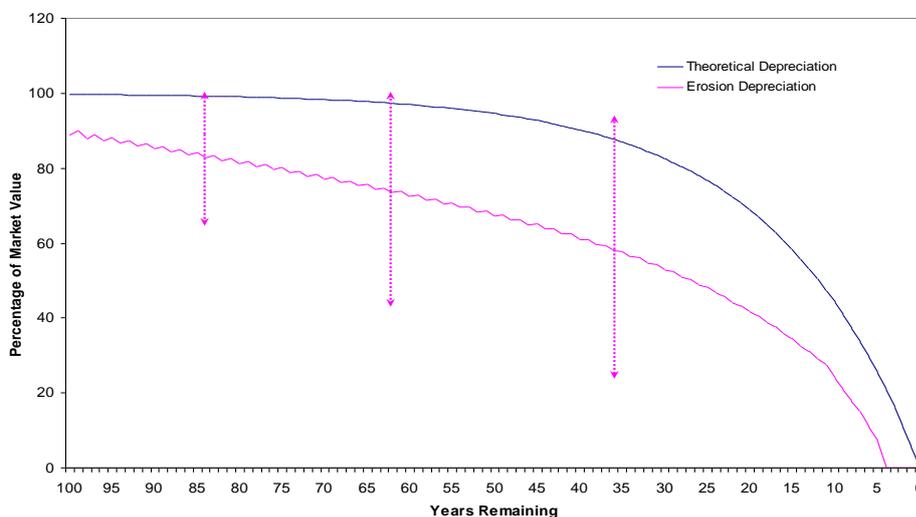
Theory, practical UK evidence and literature from overseas (mainly the US) all suggest that property values decline as the residual life of the property declines. Reductions in value of between 10% and 25% have been reported during the study once the risks of erosion became known. The reductions are expected to increase as the residual life of a property decreases. Since many mortgage lenders require a residual life of 60 years; a property with a residual life of (around) 60 years may only be available to a reduced number of potential buyers (i.e. those who do not require a mortgage). This would reduce demand for the property and is likely to result in a reduced price.

It is important to note, though, that buyers are not always fully informed (and may not fully understand) the risk. This can result in *all* properties within a parish seeing a reduction in value even those properties not at risk of erosion. The condition of the market is also an over-riding factor in how property values respond. A strong market is one defined by a surplus of buyers, hence, the impact of erosion risk may be masked due to a lack of available properties. Conversely, a weak market (with a surplus of sellers) may exacerbate the property value reduction as buyers look elsewhere, avoiding risky or problem properties.

As a result, it is difficult to precisely define how the erosion curve may relate to a theoretical depreciation curve. Factors, such as premiums paid for sea views may mask the effect of property value reductions such that the erosion curve could lie above the depreciation curve. This is more likely in a strong market. In a weak market, the erosion curve could lie significantly below the depreciation curve.

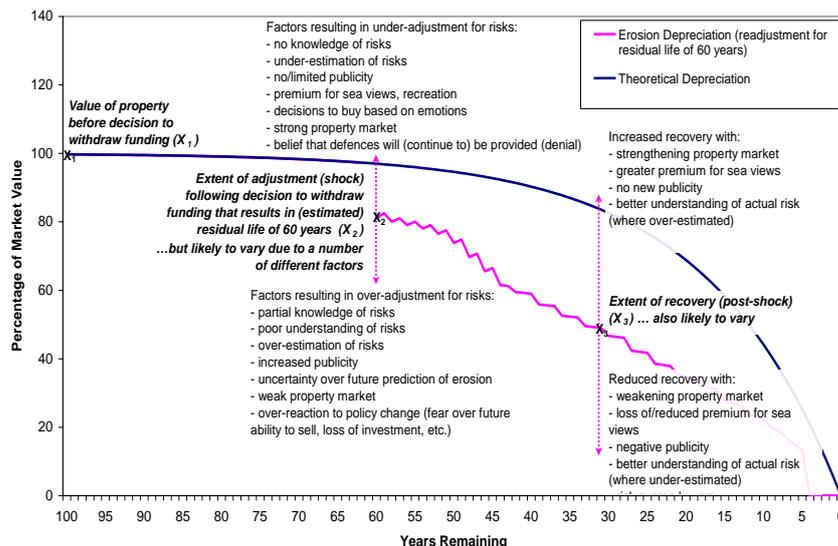
**How do asset values respond in particular to a decision to withdraw investment in publicly funded coast protection works?**

Before a decision is made to withdraw investment in defences, a property is usually assumed to have a residual life of ‘in perpetuity’ giving it 100% of its not at-risk property value. It is unlikely that any discount would be attributed to the property because there would be no assumption that the property is at coastal erosion risk (due to the presence of defences) (shown at point  $X_1$  in Figure 1). If a decision is then made to withdraw funding for defences, the residual life of the property would have to be reassessed. In Figure 2, the residual life is shown to decrease to 60 years ( $X_2$ ). In reality, there would be uncertainty over the residual life and this lack of information and knowledge of the risk could mean that the residual life is over-estimated (i.e. assumed to be longer) such that any property price reduction is lower.



**Figure 1**  
**Erosion**  
**depreciation**  
**compared with**  
**theoretical**  
**depreciation**  
 (the arrows highlight the direction of uncertainty, not the magnitude)

Conversely, the residual life of the property could be under-estimated (i.e. assumed to be shorter) so the property price reduction would be greater. As well as uncertainty over the erosion rates, there is also subjective interpretation of information; this can both increase and decrease the property value.



**Figure 2**  
**Readjustment**  
**of property**  
**values due to**  
**coastal**  
**erosion risk**  
**and the**  
**decision to**  
**withdraw**  
**investment in**  
**coast**  
**protection**  
**works**

The potential recovery of property values following the initial 'shock' associated with a decision to withdraw funding is similarly difficult to identify with a high degree of confidence. The same factors as applied to the initial reduction also affect the likely recovery. A lack of example sites (and sufficient time between decisions to withdraw funding and this study) mean that the extent of any 'shock' period is also uncertain. Figure 2 shows an indicative point  $X_3$  which suggests that the recovery could be to a value greater than that suggested by the theoretical depreciation curve (e.g. in a strong property market with significant premiums attached to sea views). Conversely, the recovery could be limited (e.g. in a weak market where many buyers are risk averse or over-estimate the risks).

Overall, the combined (and potentially conflicting) result of all the factors affecting property values is that a decision to withdraw funding could (where the negative factors predominate) result in a significant property price reduction.

## Project Report to Defra

8. As a guide this report should be no longer than 20 sides of A4. This report is to provide Defra with details of the outputs of the research project for internal purposes; to meet the terms of the contract; and to allow Defra to publish details of the outputs to meet Environmental Information Regulation or Freedom of Information obligations. This short report to Defra does not preclude contractors from also seeking to publish a full, formal scientific report/paper in an appropriate scientific or other journal/publication. Indeed, Defra actively encourages such publications as part of the contract terms. The report to Defra should include:
- the scientific objectives as set out in the contract;
  - the extent to which the objectives set out in the contract have been met;
  - details of methods used and the results obtained, including statistical analysis (if appropriate);
  - a discussion of the results and their reliability;
  - the main implications of the findings;
  - possible future work; and
  - any action resulting from the research (e.g. IP, Knowledge Transfer).

## ■ **References to published material** ---

9. This section should be used to record links (hypertext links where possible) or references to other published material generated by, or relating to this project.

None