**Aim: To evaluate the effectiveness of coastal protection methods**

Student instructions

You are going on a virtual field trip to see different types of coast protection used in the Bahamas.

1. For each type of coastal protection shown on the power point you need to fill in a score card to evaluate how effective it is. (See cost chart located below and p160 in textbook for further information)

2. Once you have visited each type of protection decide which you think is the most effective. Below the scorecards write a short paragraph justifying your decision.

* Are there any features of the coastal protection which you think are more important than others? You could weight these so they have a greater influence on the final total. For example, if you think that ‘expensive to build’ is the most important consideration, you could multiply this score by 3
* Add up your scores
* Which is the most successful type of coast protection? Justify your opinion using your scorecard and thinking about the way that the land is used by people.

3. Complete the “To Do” Questions on p.161 – Use an example from your scorecards to answer question “e”

|  |  |
| --- | --- |
| **Groyne** | 7000 pounds each |
| **Gabion** | 100 pounds per meter |
| **Revetment** | 2000 pounds per meter |
| **Sea wall** | 3-4000 pounds per meter |
| **Rock armour** | 3000 pounds per meter |
| **Habitat restoration** | Very cheap – $1.50 per plant in Abaco |
| **Managed retreat** | Cost in lost land |
| **Breakwater** | Very expensive |

**Seawall at Williamstown**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Negative feature of coast protection** | **-2** | **-1** | **0** | **+1** | **+2** | weighting | **Positive feature of coast protection** |
| Expensive to build |  |  |  |  |  |  | Cheap to build |
| Expensive to maintain |  |  |  |  |  |  | Cheap to maintain |
| Poor protection from coastal flooding |  |  |  |  |  |  | Effective protection from coastal flooding |
| Does not reduce coastal erosion |  |  |  |  |  |  | Reduces rate of coastal erosion |
| High visual impact – does not fit in with surroundings |  |  |  |  |  |  | Low visual impact – blends in well with surroundings |
| Prevents access to the beach |  |  |  |  |  |  | Enables access to the beach |
| Causes noise and visual pollution during construction |  |  |  |  |  |  | No noise and visual pollution during construction |
| May disturb wildlife |  |  |  |  |  |  | No disturbance to wildlife |
| Possible danger to tourists or local people |  |  |  |  |  |  | Safe for tourists and local people |
| **Totals** |  |  |  |  |  |  | **Total score**  |

**Groynes at Treasure Cay and Our Lucaya**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Negative feature of coast protection** | **-2** | **-1** | **0** | **+1** | **+2** | weighting | **Positive feature of coast protection** |
| Expensive to build |  |  |  |  |  |  | Cheap to build |
| Expensive to maintain |  |  |  |  |  |  | Cheap to maintain |
| Poor protection from coastal flooding |  |  |  |  |  |  | Effective protection from coastal flooding |
| Does not reduce coastal erosion |  |  |  |  |  |  | Reduces rate of coastal erosion |
| High visual impact – does not fit in with surroundings |  |  |  |  |  |  | Low visual impact – blends in well with surroundings |
| Prevents access to the beach |  |  |  |  |  |  | Enables access to the beach |
| Causes noise and visual pollution during construction |  |  |  |  |  |  | No noise and visual pollution during construction |
| May disturb wildlife |  |  |  |  |  |  | No disturbance to wildlife |
| Possible danger to tourists or local people |  |  |  |  |  |  | Safe for tourists and local people |
| **Totals** |  |  |  |  |  |  | **Total score**  |

**Habitat Restoration at Elbow Cay**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Negative feature of coast protection** | **-2** | **-1** | **0** | **+1** | **+2** | weighting | **Positive feature of coast protection** |
| Expensive to build |  |  |  |  |  |  | Cheap to build |
| Expensive to maintain |  |  |  |  |  |  | Cheap to maintain |
| Poor protection from coastal flooding |  |  |  |  |  |  | Effective protection from coastal flooding |
| Does not reduce coastal erosion |  |  |  |  |  |  | Reduces rate of coastal erosion |
| High visual impact – does not fit in with surroundings |  |  |  |  |  |  | Low visual impact – blends in well with surroundings |
| Prevents access to the beach |  |  |  |  |  |  | Enables access to the beach |
| Causes noise and visual pollution during construction |  |  |  |  |  |  | No noise and visual pollution during construction |
| May disturb wildlife |  |  |  |  |  |  | No disturbance to wildlife |
| Possible danger to tourists or local people |  |  |  |  |  |  | Safe for tourists and local people |
| **Totals** |  |  |  |  |  |  | **Total score**  |

**Gabions at Paradise Cove**

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| **Negative feature of coast protection** | **-2** | **-1** | **0** | **+1** | **+2** | weighting | **Positive feature of coast protection** |
| Expensive to build |  |  |  |  |  |  | Cheap to build |
| Expensive to maintain |  |  |  |  |  |  | Cheap to maintain |
| Poor protection from coastal flooding |  |  |  |  |  |  | Effective protection from coastal flooding |
| Does not reduce coastal erosion |  |  |  |  |  |  | Reduces rate of coastal erosion |
| High visual impact – does not fit in with surroundings |  |  |  |  |  |  | Low visual impact – blends in well with surroundings |
| Prevents access to the beach |  |  |  |  |  |  | Enables access to the beach |
| Causes noise and visual pollution during construction |  |  |  |  |  |  | No noise and visual pollution during construction |
| May disturb wildlife |  |  |  |  |  |  | No disturbance to wildlife |
| Possible danger to tourists or local people |  |  |  |  |  |  | Safe for tourists and local people |
| **Totals** |  |  |  |  |  |  | **Total score**  |

**Offshore Breakwater in Nassau**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Negative feature of coast protection** | **-2** | **-1** | **0** | **+1** | **+2** | weighting | **Positive feature of coast protection** |
| Expensive to build |  |  |  |  |  |  | Cheap to build |
| Expensive to maintain |  |  |  |  |  |  | Cheap to maintain |
| Poor protection from coastal flooding |  |  |  |  |  |  | Effective protection from coastal flooding |
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| May disturb wildlife |  |  |  |  |  |  | No disturbance to wildlife |
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| **Totals** |  |  |  |  |  |  | **Total score**  |

**Revetment in Marsh Harbour, Abaco**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Negative feature of coast protection** | **-2** | **-1** | **0** | **+1** | **+2** | weighting | **Positive feature of coast protection** |
| Expensive to build |  |  |  |  |  |  | Cheap to build |
| Expensive to maintain |  |  |  |  |  |  | Cheap to maintain |
| Poor protection from coastal flooding |  |  |  |  |  |  | Effective protection from coastal flooding |
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| May disturb wildlife |  |  |  |  |  |  | No disturbance to wildlife |
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| **Totals** |  |  |  |  |  |  | **Total score**  |

**Managed Retreat in Gold Rock**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Negative feature of coast protection** | **-2** | **-1** | **0** | **+1** | **+2** | weighting | **Positive feature of coast protection** |
| Expensive to build |  |  |  |  |  |  | Cheap to build |
| Expensive to maintain |  |  |  |  |  |  | Cheap to maintain |
| Poor protection from coastal flooding |  |  |  |  |  |  | Effective protection from coastal flooding |
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| **Totals** |  |  |  |  |  |  | **Total score**  |