



# MarClim: Marine Biodiversity and Climate Change



## Project Background

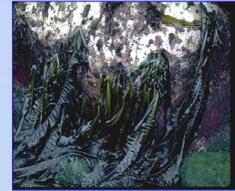
- The project will use novel syntheses of existing long-term data on temperature-sensitive, readily observed intertidal climate indicator species to make predictions on changes in coastal diversity that may result from global warming.
- The species investigated will include *Bifurcaria bifurcata*, *Chthamalus montagui*, *Gibbula umbilicalis*, *Semibalanus balanoides*, *Fucus serratus*, *Osilinus lineatus* and *Patella vulgata*.
- Current scenarios suggest that warming of sea and air temperature will continue in the short term (2020s) but in the longer term there are fears that the North-Atlantic thermohaline circulation may switch off leading to regional cooling in north-western Europe<sup>3</sup>.
- The MarClim project is co-ordinated by the Marine Biological Association and includes the many partners listed on this poster. It will run for four years from April 2001.



Right:  
*Bifurcaria  
bifurcata*  
Left:  
Current  
distribution<sup>2</sup>



Right:*Alaria  
esculenta*  
Left: Current  
distribution<sup>1</sup>



Left:  
*Osilinus  
lineatus*  
Right:  
Current  
distribution<sup>2</sup>



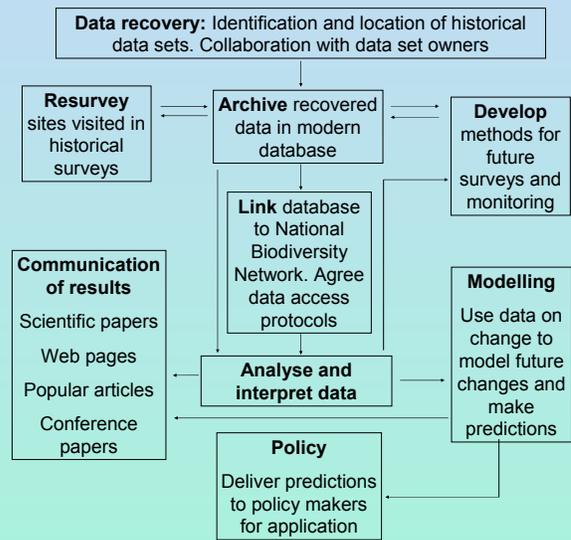
Left:  
*Gibbula  
umbilicalis*  
Right:  
Current  
distribution<sup>2</sup>



## Aims

- To use a combination of archival and contemporary data to develop and test hypotheses on the impact of climatic change on rocky intertidal animals and plants.
- Forecast future community changes based on Met. Office Hadley centre models and UKCIP models.
- Establish a low-cost fit-for-purpose network to enable regular updates of climatic impact projections.
- Assess and report likely consequences of predicted changes on coastal ecosystems.
- To provide general contextual time-series data to support marine management and monitoring.
- Evaluate use of intertidal indicator species as sustainability indices.
- Disseminate the results as widely as possible.
- Provide a basis for the development of a pan-European monitoring network.

## Project Components



Right:*Semibalanus  
balanoides*  
Left: Current  
distribution<sup>2</sup>



Right:*Patella  
aspera*  
Left: Current  
distribution



1: From [www.marlin.ac.uk](http://www.marlin.ac.uk)  
2: After Lewis 1964

3: Hiscock, K., Southward, A., Tittley, I., Jory, A. & Hawkins, S. The impact of climate change on subtidal and intertidal benthic species in Scotland. *Scottish Natural Heritage Research, Survey and Monitoring Report* No. 182.