Box 1

5 Boxes for Legend:

Late

Devonian

OH – Old Head Formation
Shallow Marine Shelf

TH – Toe Head Formation
Coastal Plain Rivers

CE – Castlehaven Formation
Alluvial Floodplain

SK - Sherkin Formation
Coastal Pain Rivers

Lower Paleozoic Basement

Part of Sediment Record preserved at Mizen Head today.

Age: **Late Devonian-Early Carboniferous (380-355Ma)**
Map: **Latitude of Mizen Head-Equatorial**

Title: **Environmental Model of Southwest Munster at the Beginning of the Carboniferous Period (about 355Ma).**

Text: **Sediments accumulated to a thickness in excess of 7km in a crustal depression known as the Munster Basin. The oldest sediments, which were deposited in this basin, are older than 380Ma and are not visible.**

The northern periphery of the basin was located along a line from Dingle Bay to Clonmel. The mountainous area, which supplied sediment to the basin, was probably located in the north and northwest of Ireland and in the region of the Leinster Mountains to the northeast.

The basin consisted of a semi-desert landscape in which occasional ephemeral rivers transported sediment southwards from their source area onto an extensive alluvial plain. The rivers were sluggish at times, torrential at others, depositing silt, sand and gravel which cemented into purple sandstones and and mudstones or ORS-Old Red Sandstone, including the Castlehaven Formation. This led to a broad coastal plain in which grey and green sandstones and mudstones accumulated - Toe Head Formation.

A shallow tropical sea invaded the alluvial landscape from the southeast. This established a fully marine environment over much of Munster by the end of the Carboniferous Period and resulted in the deposition of grey sandstones - Old Head Formation.

Only a small part of the sediment, which was originally deposited, is preserved today. The vertical black line in the right hand side of the model shows the sediments preserved in the Mizen Head area.

Note that this model only shows the scene at the end of the Devonian. The environment was changed radically through the course of the Carboniferous as a result of the continuing rise in sea level, which transformed Ireland in a tropical sea.

Dr. I. A. J. MacCarthy,
Department of Geology,
University College Cork.

Extensive sediment accumulated through the course of the Carboniferous. The sea was warm and productive; over million of years thick sediments of calcareous debris from shellfish and coral compressed to form Limestone. The sea was clear, but then sand and clay were deposited on top of the Limestone to form in time Sandstone and Shale. Later as the water became shallow, swampy tropical forests invaded the sea and the skeletons of plant material were compressed to form Lignite and Coal.

Dr. I. A. J. MacCarthy,
Department of Geology,
University College Cork.