Fact Box 2 - Organisation of LOIS

LOIS Steering Committee   Chairman **Prof J S Gray**

  Secretary and Manager   Mr R L Barrett

LOIS Co-ordinator   **Dr A R D Stebbing**

LOIS Components

- **RACS**   Chairman **Prof D E Walling**
  (Rivers, Atmosphere, Coasts Study)

  RACS (R)   Chairman **Mr G J L Leeks**
  RACS (A)   Chairman **Dr J M C Plane**
  RACS (C)   Chairman **Prof D A Huntley**

- **LOEPS**   Chairman **Prof I Shennan**
  (Land-Ocean Evolution Perspective Study)

- **SES**   Chairman **Prof J H Simpson**
  (Shelf Edge Study)

- **NORMS**   Chairman **Dr J M Huthnance**
  (North Sea Modelling Study)

- **DATA**   Chairman **Mr R V Moore**

LoiS

Rivers-Atmosphere-Coasts Study (RACS)

Overall Objectives

- To estimate contemporary fluxes of materials, including water, fine particulates, biogeochemically important elements and representative contaminants, into, through and out of the coastal zone.

- To identify and quantify the physical, chemical and biological transformation processes within river basins, the coastal zone and the atmosphere that govern such fluxes.

- To develop models of these fluxes and transformation processes which can provide the basis for integrated models of the land-atmosphere-coastal system capable of predicting the effects of future environmental change.

River Basins - RACS(R)

Objectives

- To determine contemporary land-sea fluxes of water, sediment, biological matter, major dissolved constituents, nutrients and selected contaminants.

- To identify and characterise key processes governing the fluxes.

- To develop models capable of predicting changes in fluxes under future environmental changes (e.g. in land-use or climate).

LoiS

Atmosphere - RACS(A)

Objectives

- To estimate the land-sea fluxes of airborne nutrients and pollutants and their input to coastal waters, in both gaseous and aqueous phases.

- To characterise the chemical transformations influencing airborne pollutants in the coastal zone.

- To estimate the net fluxes to the atmosphere of climatically significant trace gases from estuarine and coastal systems.

- To undertake numerical simulations of the budgets of atmospheric pollutants on estuarine and coastal waters.

LoIS

Coasts and Estuaries - RACS(C)

Objectives

- To quantify fluxes of particles, biogeochemically important elements and representative contaminants from land-sources through the coastal zone.

- To generate new quantitative understanding of estuarine and coastal zone processes controlling the fluxes and reactivities of natural and anthropogenic materials.

- To provide interactive models of these processes as building-blocks for comprehensive coastal zone system models.

LoIS

Land-Ocean Evolution Perspective Study (LOEPS)

Objectives

- To determine, through study of the Holocene sedimentary record and changing coastal position and morphology, how sediment fluxes between the land and the ocean have been influenced by changes in sea-level, climate, geomorphology and land-use.

- To determine the regional history of sediment fluxes, sources and sinks at the RACS site, with particular reference to the relative importance of fluvial, coastal and sea-bed sediment sources.

- To determine the historical components of relative sea-level change along the coast, enabling refined predictions for the next 50 - 100 years.

- To improve absolute dating of Holocene sedimentary sequences.

- To model Holocene tidal and storm circulation affecting sedimentation in collaboration with NORMS.

LoIS

Shelf Edge Study (SES)

Objectives

- To identify the time and space scales of ocean-shelf momentum transmission and to quantify the contributions to ocean-shelf water exchange by physical processes.

- To estimate fluxes of water, heat and certain dissolved and suspended constituents across a section of the shelf edge with special emphasis on net organic carbon export from, and nutrient import to, the shelf.

- To incorporate process understanding into models which will be tested by comparison with observations and provide a basis for estimation of fluxes integrated over time and the length of the shelf edge.

LoIS

North Sea Modelling Study (NORMS)

Objectives

- To develop shelf-wide water quality models with appropriate land and ocean boundary conditions.

- To model sediment transport and geomorphological responses to environmental change in the coastal zone over timescales of decades to centuries.

- To model water quality variables in the coastal zone resulting from riverine and coastal inputs (Humber - Wash System).

- To model carbon and nutrient cycling and transport through the coastal ecosystem of the Humber plume.

- To model the evolution of the shelf system in response to changes during the Holocene.

LOIS

DATA

Objectives

- To develop techniques for the integrated management and distribution of environmental data.

- To provide data management capability for the LOIS community.