



# Data Management and GIS

MARINE SPATIAL PLANNING CONFERENCE, 1 JULY 2010



marine  
management  
organisation

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Knowledge Management

# Contents

- Marine Evidence Base
  - Data Management Framework
  - MMO Data and GIS Strategy
  - Information Audit
  - Supporting Initiatives
  - Role of GIS
  - AGI / IMarEST Initiative
- 

# Marine Evidence Base

Map  
Data

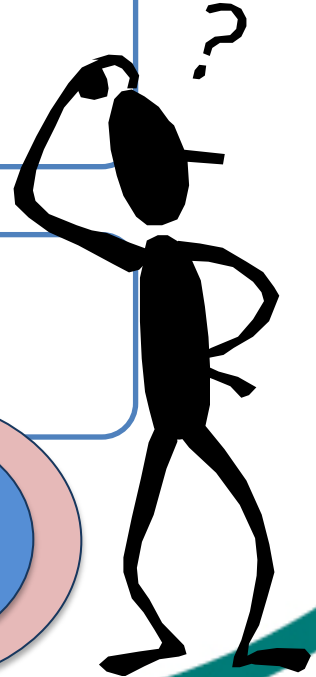
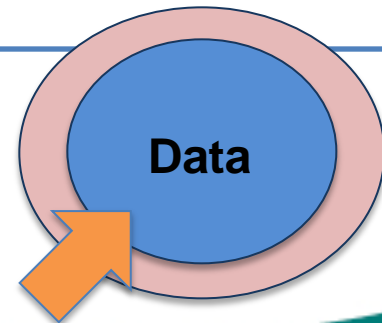
- Spatial Reference Data (e.g. Bathymetry)
- Spatial Application Data (e.g. Managed Areas)

Business  
Data

- Socio Economic Data (e.g. Activity Patterns)
- Existing Plans, Control Measures and SEAs

Science &  
Policy

- Outputs from Scientific and Policy Research
- Local Intelligence (Activities and Issues)
- Case Studies and more ...



# Evidence Gaps

Map  
Data

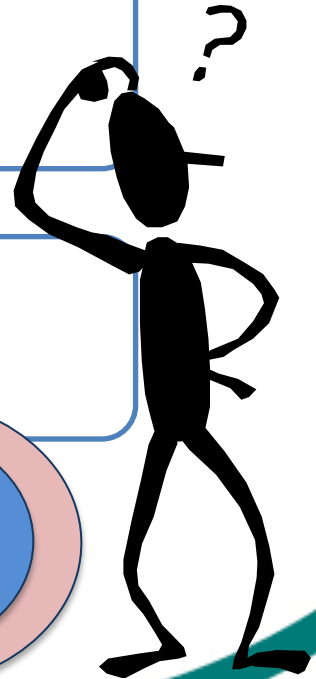
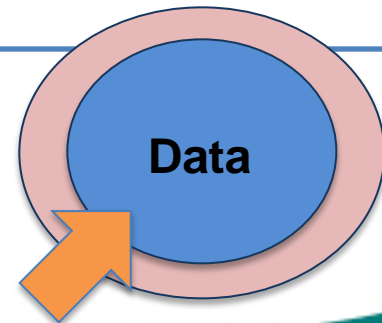
- High level data themes (e.g. from the UNESCO guidance) are not substantiated by authoritative, comprehensive and coherent datasets

Business  
Data

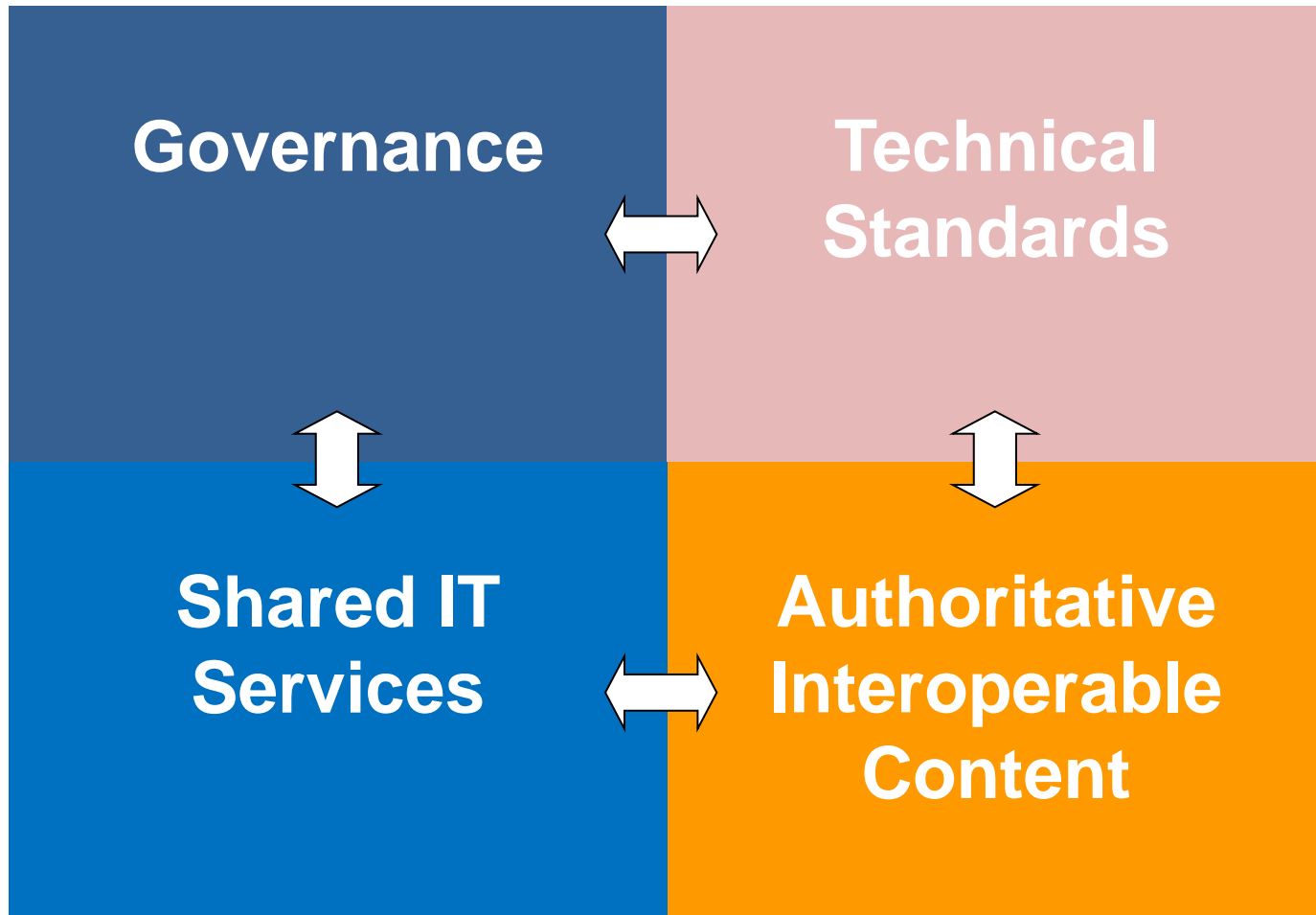
- Existing information on activities and human pressures and existing plans and measures is patchy and not set in a consistent framework

Science &  
Policy

- There are gaps in understanding (e.g. natural resources, ecosystem response and existing information is under utilised)



# Data Management Framework – SDI Principles



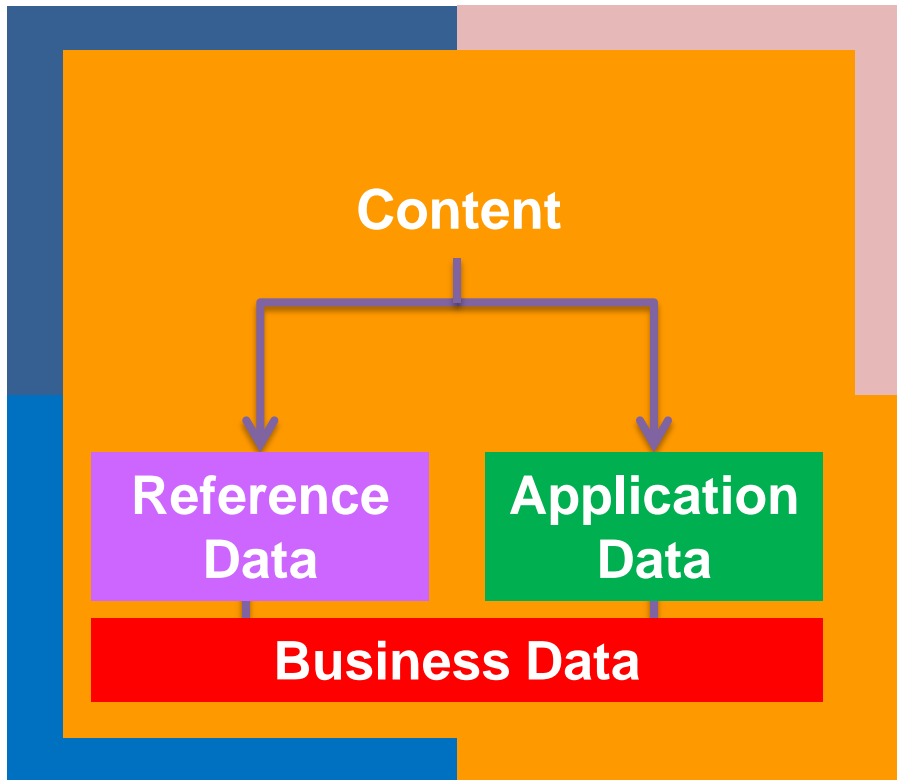
# Problems and Issues – Governance



## Governance

- Obstacles to data sharing and re-use are chronic and cultural
- Little appreciation of issues or importance by senior managers
  - insufficient skills and resources
- Data not available or easy to use
- No identifiable competent or responsible authority
- Authorities unwilling to share data
  - not my problem!
- Hidden or complex licensing conditions
- Limited means of exposing or sharing data with stakeholders

# Problems and Issues – Content



- Data suited for single often internal purpose only (e.g. navigation)
- No real world representation
- No metadata or product specification
- Quality assessment not undertaken or communicated
- No interoperability and regional inconsistency between dataset
- No funding for long term support and maintenance

# MMO Data Strategy – Principles

All data used in decision making will be controlled and quality assessed



Adoption of common standards ensures consistency and re-use



Use of shared services provides efficiency and co-working



Internal datasets will be coordinated with owners assigned



Data will be shared unless there is good reason not to (e.g. DPA)



# MMO Strategy – Data ‘Strengthening’

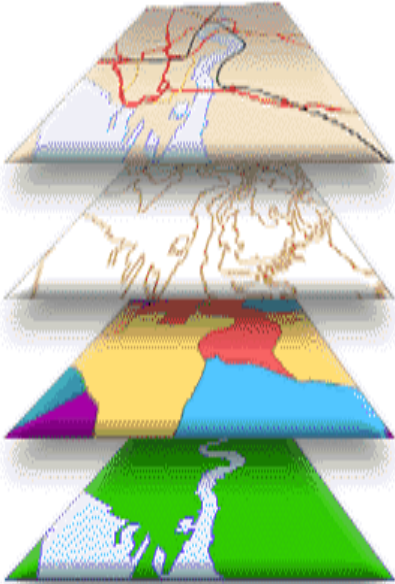
Review existing data sources against need

Build on existing principles / standards

Identify Data Asset Owners

Acquire existing datasets or seek to improve data for marine planning

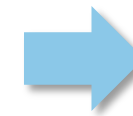
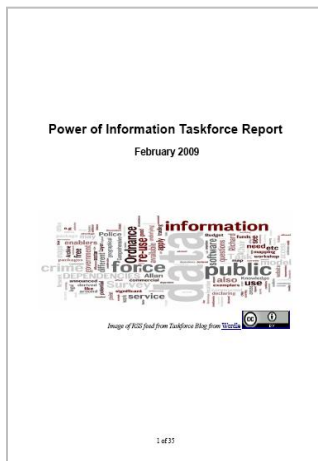
Assist data owners to improve data as input to planning process



# Policy Context



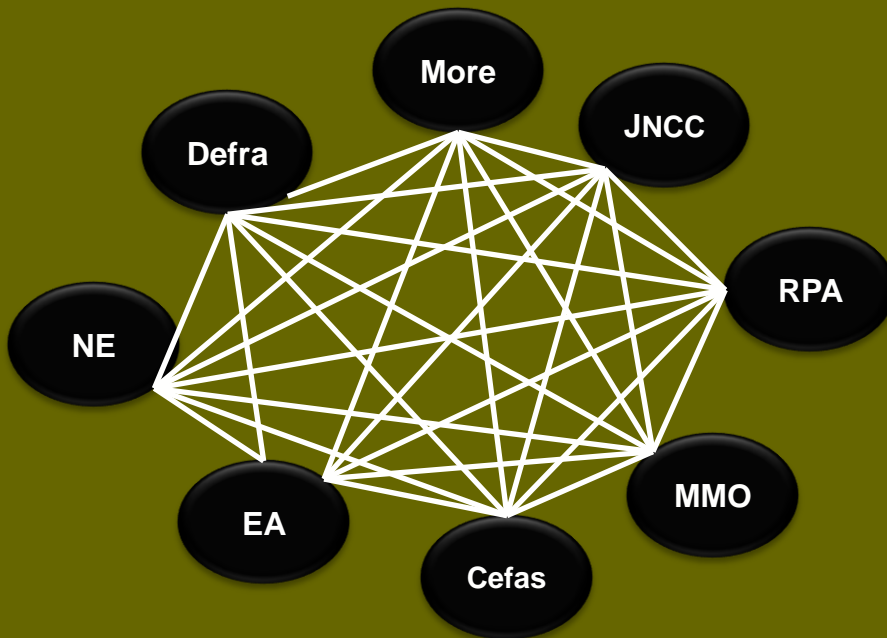
UK Location Programme



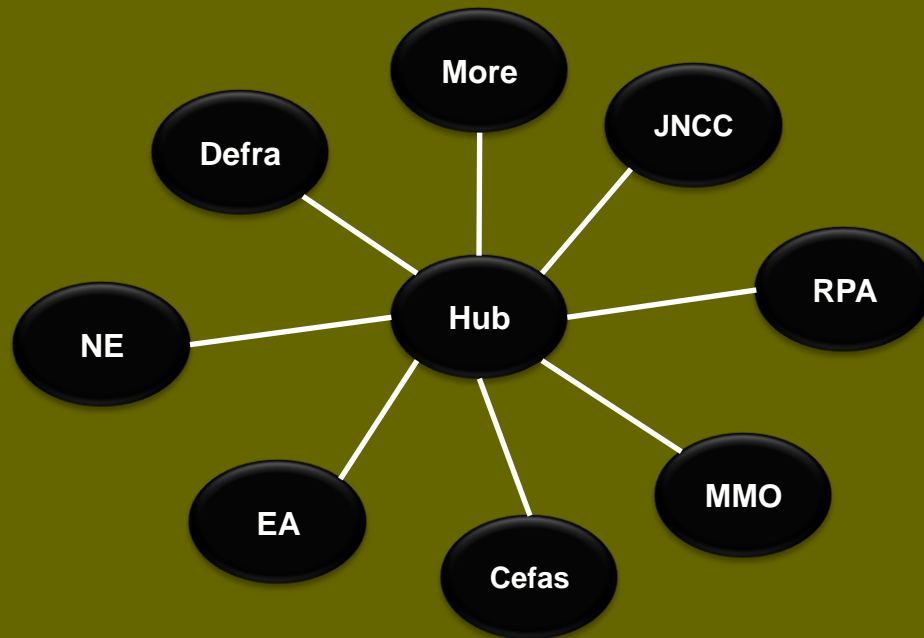
[data.gov.uk](http://data.gov.uk)

# Defra Data Sharing Initiative

- From this:



- To this:



- Aim - data to be provided via hub to authorised users under single central data agreement

# MEDIN

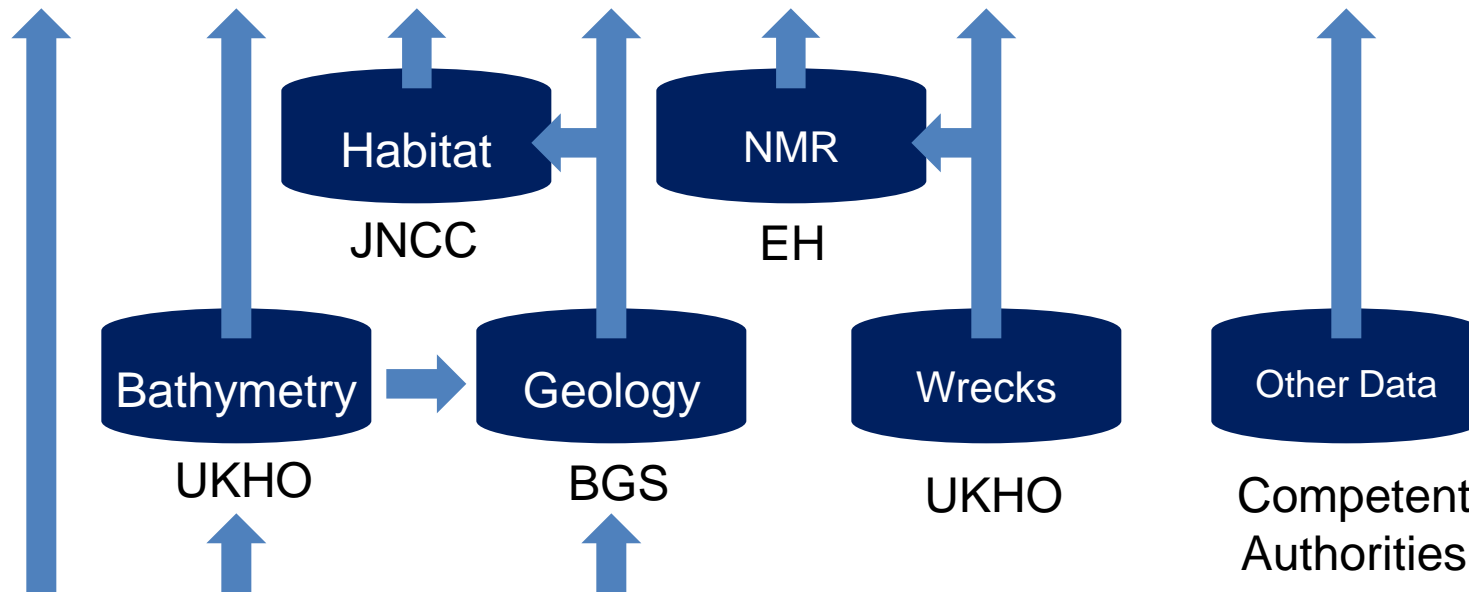
marine environmental  
data & information network

- Facilitating data sharing across the marine community
- A network of accredited Data Archive Centres
- Standards and guidance for data managers
- Discovery and resource portal
- Sub-group of the Marine Science Coordination Committee
- Tasked to consider a policy and plan for data that will underpin the Marine Science Strategy

# SOA Model for Managing & Sharing Reference Data



Shared IT Services (Defra / UKLP / MEDIN)



Data submitted to MEDIN DACs

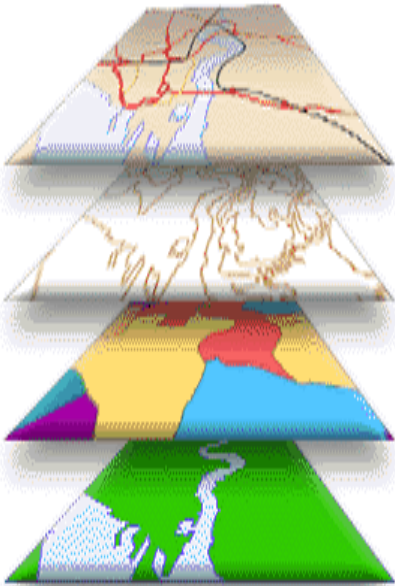
# Geographic Information Systems (GIS)

Tool for managing, interpreting & presenting information :

- Context and integrates wide range of spatial data e.g. Defra / MMO Map Viewer
- Means of gathering intelligence and opinion e.g. MCS and MCZ websites
- Ability to analyse data and other information spatially e.g. MaRS, Cefas Planning Tool
- Publishes data & plans to stakeholders e.g. MAGIC

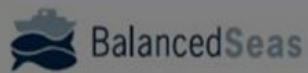
But :

- GIS cannot replace best practice data management
- Must be underpinned by robust policies that deliver accurate comprehensive and quality assessed data





# MCZ Project Interactive Map



Home View

## Interactive Map

Interactive Map

# Welcome

The Marine Conservation Act 2009 created a new type of Marine Protected Area (MPA), called a Marine Conservation Zone (MCZ). Together with existing MPAs in England, MCZs will help to deliver the Government's ambition for an ecologically coherent network of well managed marine areas.

# MCZ Project Interactive Map



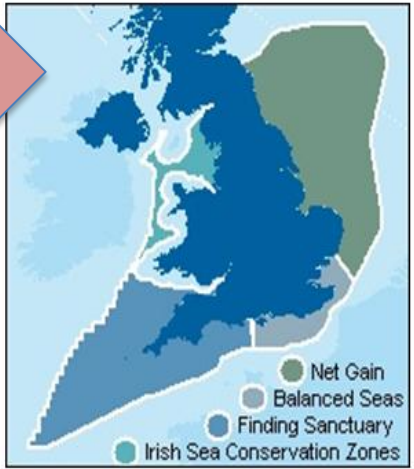
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### Application Shortcuts

- [Take me straight to the map](#)
  - [I'm new, show me the tutorial/help pages](#)
  - [I just want to view data](#)
- I need to add data, show me how:
- [Register for the interactive map](#)
  - [Log in](#)

# Stakeholder engagement and intelligence gathering

Stakeholder interest in the sea and the sea to be selected for supported. This ensure that they work goals that



Click on a project area to zoom the map.

information. Should you require using this site please [Terms and conditions](#)

This interactive map will allow people to input information on how and where they use the marine environment for a number of activities, such as diving and sea angling, at a regional level, so it's vital that

100 mi

lat : 0.00000, long : 0.00000

Data CC-BY-SA by [OpenStreetMap](#)

Open Street Map: The purple 12nm limit is incorrect, turn on the UK National Limits layer for the correct line

Marine Standard



**MAGIC**

Site Map Close

Search Options Map Tools Change Map Topic

Reload Map

**Public access to environmental information but datasets must be supported and maintained**

Scale: 1:1284374

Done

LayerList - Windows Internet Explorer


http://www.magic.gov.uk/website/magic/toc.htm#

**Switch map layers on or off**  
(up to a maximum of 15 layers on)

- Bathing Waters Directive (England)
- Bathing Waters (Wales)
- Seabird Nesting Counts (British Isles)
- Well Heads (GB)
- Surface Infrastructure (GB)
- Subsurface Infrastructure (GB)
- Offshore Windfarms (GB)
- Nuclear Power Stations (GB)
- Saltmarsh Points (Scotland)
- Saline Lagoons Points (Scotland)
- Shingle (Scotland)
- Fish Farms (Scotland)
- Waders and Wildfowl Spring Mean Peaks (GB)
- Waders and Wildfowl Winter Mean Peaks (GB)
- Waders and Wildfowl Autumn Mean Peaks (GB)
- Grey Seal Breeding Colonies (GB)
- Counties, Metropolitan Districts and Unitary Authorities (GB)
- NUTS1 - Government Office Regions (GB)
- Place Names (GB)
- Urban Areas (GB)

Internet | Protected Mode: Off 130%

# Summary and Next Steps

- Building a marine evidence base is a **big ask**
  - Gaps in available data and other information risk undermining the credibility of marine plans
  - A data policy and plan to create, support and improve reference data is essential
  - A framework for best practice data management, sharing and strengthening must be put in place
  - Only practical means of gathering activity data is by encouraging and assisting stakeholders in this task
  - Authorities must take on responsibility of providing good data – their contribution to the evidence base
- 

**Thank you ...**

# **Information Strategies for Marine Planning**

**Conference 2 Sep 2010, IMarEST, London**

**Organised by the joint AGI / IMarEST  
Marine and Coastal Zone Mapping  
Special Interest Group**



**Submit abstracts to  
<http://surveys.imarest.org>  
by 31 July 2010**

