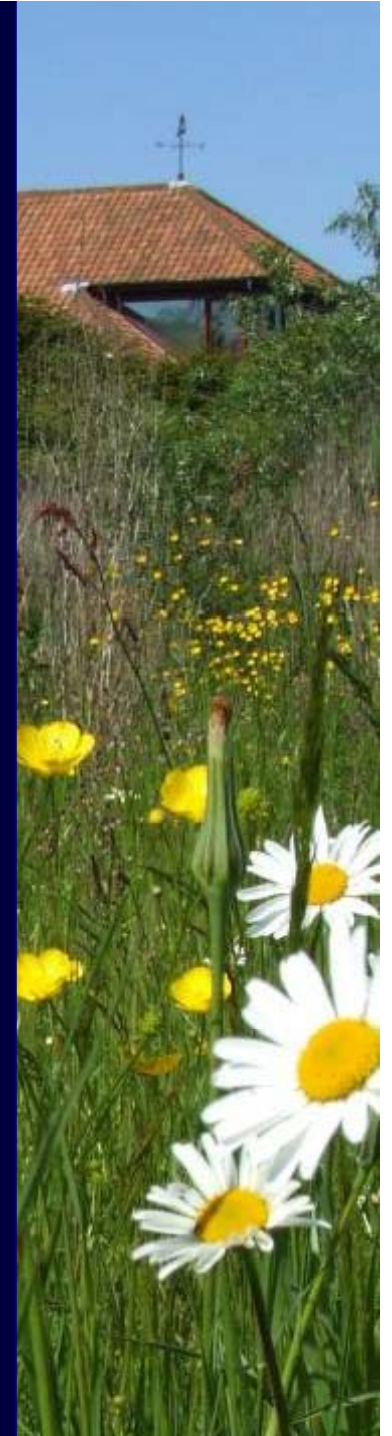




Information on shipping density and data integration on the web

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Background

- UNEP-WCMC - biodiversity monitoring part of UNEP
- UK registered charity
- Focus on delivering information to decision makers

Project background

- Project proposal with WWF on ship strikes, currently unfunded
- UNEP-WCMC role in web mapping

Shipping data - potential sources

- Ship data
 - International Registries
- Ship position
 - Ferry routes
 - Voluntary Observing Ships Scheme (VOS)
 - Automatic Identification Systems (AIS)
 - Remote sensing

Ship data - international registries

- Ship data has value in understanding collision events
- Lloyds Register of Ships
- Now included in IHS Fairplay
- 180000 ships over 100GT

Voluntary Observing Ship Scheme

- Voluntary, meteorology-based information source
- Currently about 4000 ships report position and track
- Geographic Coverage:
 - Potentially global
 - Not restricted to coastal areas
 - Many information gaps
- Temporal Coverage:
 - Temporal data is sporadic
 - Long data archive
- [Example 1](#)
- [Example 2](#)

Automatic Identification Systems

- IMO requirement for ships over 300GT
- Ideal system for enforcement of regulations
- Geographic Coverage:
 - Europe, US and major global ports
 - Restricted to coastal areas (up to 200nm max)
 - Satellite based systems are emerging (S-AIS) to offer global coverage
- Temporal Coverage:
 - Position reported at regular intervals
 - Short data archive
- [Example 1](#)

Remote sensing

- Use sensors to identify ship traffic patterns (Landsat and Radar)
- Medium to large vessels (more than 45m length)
- Can detect heading but not speed
- No ship information
- Geographic Coverage:
 - Global
 - Many data gaps and biases
- Temporal Coverage:
 - Single snapshot

Shipping data - requirements

- Range of requirements based on different mitigation measures
 - Understanding ship traffic patterns
 - Monitoring ship movements for enforcement/alerts
 - Delivery of data/alerts to ships
 - Etc
- Combine data from different sources

Shipping data - requirements

- Spatial
 - Positions
 - Tracks
 - Densities - at what scale?
- Temporal
 - Single snapshot
 - Multiple snapshots - by season/month/year
 - Real-time - useful for enforcement
- Ship attributes (e.g. size, speed, draft etc.)

Licensing and access

- Access to AIS data is normally through a paid subscription service
- UNEP-WCMC have an agreement with IHS
- Real-time data may be included

Technologies

- Emerging trends:
 - Distributed data management
 - Web services, e.g. Flickr, Geolocation
 - Big increase in content, especially remote sensing data
 - Community created content
- Web GIS is still very new
- Tools are in their infancy

Examples

- ArcGIS.com:
 - Data sharing platform
 - Map creation
 - Online data capture
- Critical Site Network tool:
 - Data integration
 - Web services
 - Analysis and visualisation

Recommendations

- Define the requirements for shipping data
- Develop a sustainable process to create the necessary analytical products
- Deliver access to these data so they can be integrated with other datasets



A world where biodiversity counts

www.unep-wcmc.org