Marine Spatial Planning

ASA provides services and technology solutions that address the need for balancing the various demands on marine areas and resources. This balance is most effectively achieved by marine spatial planning (MSP), a multi-sector (e.g., fisheries, energy, transport) and multi-disciplinary (e.g., engineers, scientists, policy analysts, planners) process of allocation and assessment of anthropogenic ocean uses to achieve and meet ecological, economic, and social objectives. ASA has experience in the marine environment from both ecological and human perspectives while integrating science, technology, and policy to support successful marine spatial plan development.

For complex data management and processing, assessing the implications of data (e.g., fisheries, vessel tracks, bathymetry), modeling (e.g., currents, sediment transport, waves), and providing support for policies and legislation, ASA provides unrivaled expertise for marine spatial planning. Since 1979, ASA has specialized in marine ecology and biological modeling, mapping, and associated analyses. ASA is involved in most facets of anthropogenic ocean uses, such as offshore energy siting analysis including oil and gas and renewable energy development using a variety of modeling and data management tools. ASA also has experience in marine planning and regulation having prepared environmental impact assessments (EIA), environmental impact statements (EIS), and natural resource damage assessments (NRDA) for many projects.

Developing a thorough marine spatial plan and weighing options requires accurate data at appropriate scales and tools that can visualize and process multiple layers of data into summary maps and tables, visualizations, and representative indices for planners. These tasks require a science-based organization with understanding of all marine sectors. With trained policy analysts, marine biologists, fisheries scientists, physical oceanographers, computer modelers, data management experts, and fossil, nuclear and renewable energy experts all in one organization, ASA is a leader in the multi-sector, multi disciplinary approach critical to successful marine spatial planning.

MARINE ECOLOGY & BIOLOGY

- Fisheries population data analysis
- Essential fish habitat assessment
- Habitat characterization and mapping
- Migratory species modeling
- Ecosystems and population modeling
- Biological data processing and modeling
- Ecological service value indices development
- Food web impacts
- Threatened and endangered species analysis

ANTHROPOGENIC OCEAN USES

- Defense and security
- Renewable energy, climate and sustainability
- Offshore energy including oil and gas
- Commercial and recreational fisheries
- Marine response and crisis management
- Dredging and pipeline and cable burial
- Offshore infrastructure
- Transportation and navigation
- Offshore discharge and dump sites

MARINE PLANNING & REGULATION

- Natural Resources Damage Assessment
- Environmental Impact Assessments and Statements
- Policy analysis for spatial planning
- Marine alternatives planning assessment and support
- Inundation and flood visualizations
- Permitting support
- Litigation support and expert testimony

Why Marine Spatial Planning?

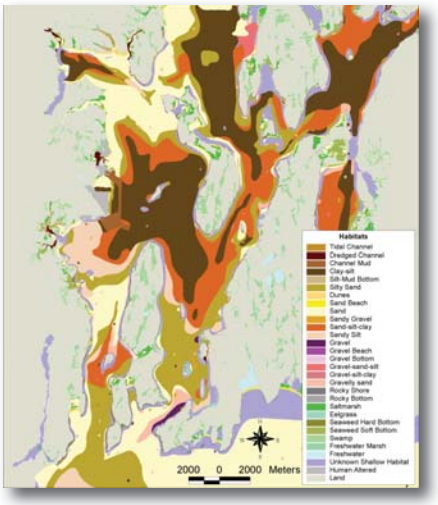
The current method of ocean zoning for individual ocean uses does not provide the holistic ocean plan necessary to reach specific targets and goals (i.e., offshore renewable energy development or maximizing fisheries protection). Growing knowledge about marine environments, higher resolution data, and GIS being broadly used allows multi-sector issues to collaborate through marine spatial planning, such as where to place new developments while not to limit existing marine uses. Whether it is to balance ocean uses, maximize economies, protect marine habitats or promote new renewable energy development, marine spatial planning allows planners to weigh alternatives and develop plans that meet these goals.

Ocean resources lie at the core of coastal economies and with almost three billon people living in close proximity to the world's coasts, the health of ocean resources is critical to both economic and environmental sustainability. Marine spatial planning can help maintain and restore valuable ocean resources while promoting sustainable marine use.

GIS & Data Integration

ASA has been involved in developing and utilizing environmental data management and Geographic Information Systems for water resources analysis since 1979. ASA's diverse project experience and multi-industry contract work has led to a wide spectrum of cutting edge GIS applications and data solutions. ASA has confronted and met the challenge of integrating disparate environmental data often stored in non-GIS data formats and by a wide array of data providers by developing integration tools and support for normalizing and homogenizing various data formats. GIS and data integration services include:

- Integrated ocean observation and modeling
- Data Management and Communications (DMAC)
- Custom GIS applications
- Web-based map services
- Web services architecture design and implementation
- Marine forecasting integration
- Web-based interactive GIS systems



Mapped shoreline and subtidal habitats of Narragansett Bay, Rhode Island.

ASA has worked with the states of Massachusetts and Rhode Island on their comprehensive marine spatial plans, the U.S. Minerals Management Service delivering a database and data synthesis of Outer Continental Shelf resources, and the Emirate of Abu Dhabi in development of a coastal resources atlas and environmental management tools to support coastal management and planning. ASA has also been involved in EIA and EIS development for offshore projects.

ASA science, services, and solutions provide functional answers to the world's toughest questions confronting industry, academia, energy, environment, defense and security. ASA's innovative technology solutions are combined with over 30 years of service experience with issues including: water quality management, biological assessment, and oil and hazardous materials modeling. ASA develops and applies modeling software, technology platforms, and data management solutions to solve problems relating to marine, freshwater, air, and land resources.

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