

So What? Aids to Navigation (AtoNs)

Aids to navigation (AtoNs - <http://go.usa.gov/7BM>) are placed along coasts and in navigable waters as guides to mark safe water and hidden dangers as well as to assist in determining a vessel's position in relation to land. Buoys (<http://www.sailingissues.com/navcourse9.html>) and beacons are considered AtoNs, and different types communicate different safety or navigation messages. Some AtoNs indicate safe travel or signify dangerous paths (for example, paths in shallow water). Other AtoNs mark small obstructions or large land masses. People might not know that some AtoNs mark new hazards, research areas, and aquaculture areas. At times, several AtoNs are linked together to form a local navigation system aid that can help mariners follow natural and improved channels. AtoNs are important to note while you're out on a boat as well as when you're looking at a map of the ocean and planning a renewable energy site. For more information, go to the U.S. Coast Guard's AtoN site (http://www.uscgaan.com/federal_aton%27s.htm) or look at the NOAA Office of Coast Survey's Chart No. 1 (<http://go.usa.gov/7Bt>).

So why should ocean energy planners pay attention to the AtoNs data set?

1. **AtoNs mark areas of potential avoidance.** Large sunken ships, shipping lanes, and other underwater obstructions need to be accounted for when people consider where to plan an ocean energy site. When they pay attention to the location of AtoNs, they can address potential issues early in the planning process.
2. **AtoNs indicate ocean use activity.** AtoNs direct ocean shipping traffic, shipping within inter-coastal waterways, and vessels entering or returning from the open ocean. Therefore, when more AtoNs are present, more ocean-use activity is happening in that area. Ocean planners need to pay attention to a high number of AtoNs—indicating potentially greater shipping traffic or more use conflicts—when determining an ocean energy site.
3. **Coast Guard data are in an ArcGIS-ready format.** The Coast Guard houses all the aids to navigation data and works to update the data on a weekly or monthly basis. However, many people, with the exception of the tech savvy, find the XML format difficult to use. MarineCadastre.gov developers convert the XML data into an easy-to-use ArcGIS format, then load the data into the cadastre viewer and registry. Data are updated on an annual basis. When using this data set, it is always best to double check with nautical charts before proceeding with the planning process.

Quick Caveats. The downloadable version of AtoN data housed in MarineCadastre.gov includes all types of AtoNs. Users can investigate the attributes table after downloading. The viewer, however, shows all AtoNs as a single symbol with no differentiation. If you need to know which type is where, download the data. Keep in mind that storms and other events can move buoys or break buoys free of anchors. It is best to double check all buoy locations with nautical charts before heading out to sea, and always be a vigilant captain. Pay particular attention to the blue and yellow vertically striped buoys; they mark new

wrecks and obstructions that can pop up at any time. This data set is made available for planning and never suitable for navigation.