

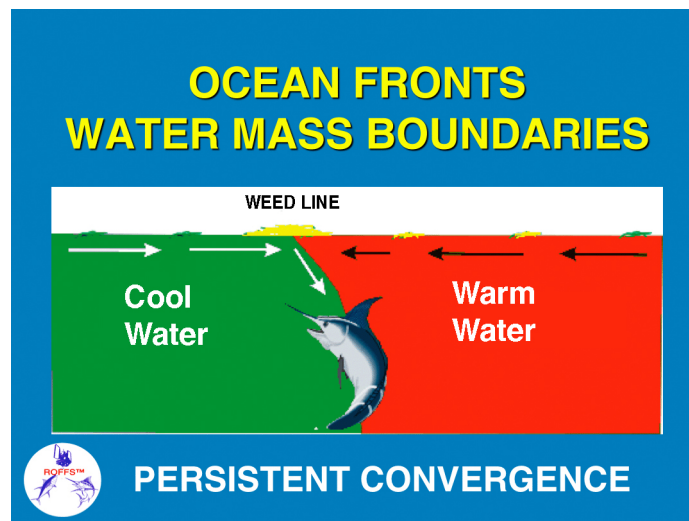
FIND FISH FASTER

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Seen in Coastal Angler Magazine – September 2011 - www.coastalanglermag.com/brevard

Time and fuel costs are always important considerations when fishing. How do you choose the location that will increase your chances for fishing action? Do you do this by blind luck? Reading internet forums? Call local captains who fish everyday and are in the know? Read the magazines and newspapers? All of these techniques have their value. However, there is a science to fish finding.

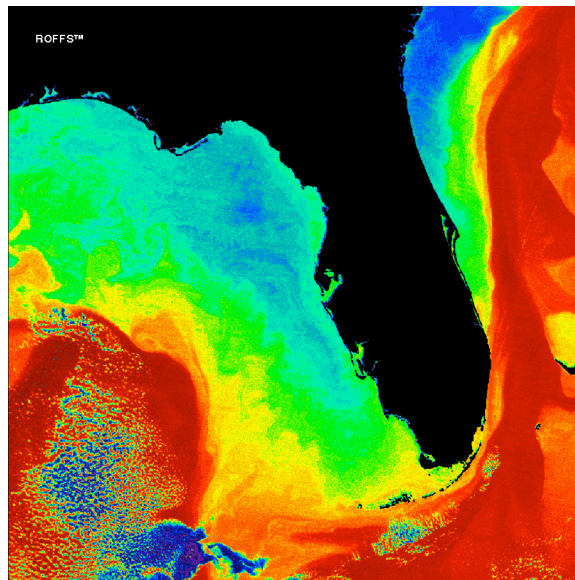
While it may seem self-evident to some anglers, fish occur in areas where their physiological functioning is optimized. Meaning they go where the conditions are best for them. Fish will make forays into sub-optimal, or uncomfortable waters for short time periods. But over the long term fish stay in habitats that are optimum for living comfortably. This allows them to grow faster and become faster swimmers to capture food and escape predators. Being good eaters also gives them an advantage to increase their fat storage and increase their reproductive potential. Successful reproduction allows for the species to survive for another generation. These optimal areas are known as preferred habitats. Thus, to find fish, find their preferred habitats. For many fish the preferred habitats are defined by water temperature, water color, salinity, dissolved oxygen, and water clarity – transparency in horizontal and vertical space, as well as, bottom structure. Once you locate this habitat, then you have to find areas where the fish are feeding. In the ocean, bays, rivers, and even lakes the food chain is concentrated in certain areas, not evenly distributed. There are physical forces that concentrate bait fish and larger fish and one main one is known as convergence zones. These are areas where water masses or distinct pools of water, i.e., those with different densities (usually different temperatures) meet. Along the boundaries the water is mixing, sinking, and the replacement water comes from nearby waters. (See figure 1).



As this process continues, weed and other floating material collect along the water mass boundaries along with concentrations of zooplankton, small fish that eat the plankton, and fish that eat the small fish. If the convergence is persistent for two to three days a concentration of fish occurs and larger predator fish have the opportunity to locate these fish and concentrate themselves. Anglers in the ocean often see the resultant slicks, rips, current edges, tide lines, weed lines, and unfortunately trash lines. The significant point is that if one can find these areas where persistence convergence occurs over good bottom structure, then one's chances for having an excellent day of catching is significantly increased, rather than riding around searching for fish.

There are many ways of locating these convergence zones. One is by observing them when you are on your boat, kayak, canoe or from a bridge catwalk, pier or walking along the coastline. But other

than studying the tide lines at an inlet it is very difficult to predict where these occur from day to day, as their location is controlled by the currents which are affected by tides, wind strength, direction, and persistence, as well as, other interacting currents. One can observe them from airplanes, but most people do not have access to aircraft every time they are thinking of fishing. The most cost effective way of locating these convergent areas where concentrations of fish are likely to occur, is by using Earth observing satellites such as the NOAA and NASA environmental satellites (e.g. NOAA_15, 16, 18, 19 or Terra and Aqua). As long as the skies are relatively clear of clouds, smoke, and fog the convergence zones can be identified by their signature characteristics of temperature, color, and transparency. Water temperature differences as low as 0.1°F can be seen from these satellites and depending on the season and where you are located, sometimes 0.25°F – 0.5°F differences in water temperature that occur over relatively short distances are important for concentrating the fish. For example the edge of the Gulf Stream or different pools of water (water masses) in the summer often has only a 0.5°F difference from the surrounding waters, but if you can find these differences or stronger ones and know that they have been over a particular good bottom structure for at least a day, then you will significantly increase your chances of finding fish.



There are several ways of gaining access to satellite imagery. A quick search on the internet for satellites, sea surface temperature, and fish will yield many different free and pay per view sources. When the skies are clear, then it is very easy to see the water mass boundaries and current edges. As one gains experience and when time is short, then many people realize that it is best to leave the satellite image interpretation and analyses to professional fisheries oceanographers who do this every day for a living. Be sure they are knowledgeable fishing oceanographers who know how to put you on the fish. For more information on the use of satellites for finding fish contact ROFFS™ at www.roffs.com and they will help you find fish faster. They provide road maps to the fish.