

Finding the Channel In Sandy Bottomed Rivers

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In the Midwest we often float and paddle canoes and kayaks on shallow sandy bottom rivers such as the Arkansas and the Kansas. The ability to find and stay in the channel can be the difference between an enjoyable float and an exhausting experience.

Under normal water level conditions these rivers contain shallow water, lots of sandbars and a narrow channel where the water is deeper. The tips included in this article can help novice paddlers avoid getting stuck in shallow water when the river is at a normal or below normal level.

Study all the tips and try to confirm them each time you float. No individual tip will work well by itself. Always look for two or more reasons why the channel should be where you think it is. If you judge incorrectly or a tip appears to fail, try to figure out why. I recently found the deeper water on the inside of a river bend and when I looked for the reason I discovered the river bottom had become hard and rocky.

This article covers rivers with bottoms that consist of loose sand. Loose sand is easily moved and shaped by the current. The included tips will not work with rivers and streams that have hard or rocky-bottoms such as found in the Ozarks or those rivers with little or no current to shift the sand and cut a channel. Remember it takes a current to shape a channel in the sand and the slower the current the more the channel fills in with sand.

Basic River Dynamics:

Water like all moving objects has the propensity to move in a straight line until deflected or forced to turn. When moving water comes to a bend in the river, the bank on the outside of the bend becomes the deflector that makes the water turn. The water runs faster on the outside of the bend and usually cuts a deeper groove in the sandy bottom known as the channel. The riverbank on the channel side frequently appears steep because the channel has been cutting away at the soft soil near the bottom and the top keeps caving into the river. This is where landowners frequently dump various items to stop the erosion. The opposite occurs on the inside of the bend where the water runs slower and sand bars develop. If the river bend switches directions then the current will cross the river at the end of one bend and be deflected by the next bend. If the river straightens out or has no obvious bends, the channel can meander around or dissipate until the next clearly defined bend in the river.

Where the water flows rapidly, the surface usually reflects the depth conditions with ripples or waves. This is caused because as water flows over an uneven surface (the river bottom, objects, etc.) turbulence is generated in the form of waves. These waves are reflected on the surface and appear as ripples. If the water is deep enough the waves dampen and/or disappear before they reach the surface. The closer the bottom or the object is to the surface the more apparent these waves are. Waves generated by wind are added to the waves generated by the bottom. The resulting ripples are bigger over shallow water and smaller over deeper water. The shiny water tip described below works even if it is windy.

Channel Finding Tips:

Tip #1: Where there is a well-defined river bend, the channel will be found on the outside of the turn. Higher and steeper banks are usually found on the outside of turns. Lower banks and sandbars are usually found on the inside of turns. The outside of the turns is also likely to contain log jams and strainers, so exercise great caution to avoid those extreme hazards while trying to find the deeper water.

Tip #2: When one well-defined bend is followed by another well-defined bend in the opposite direction the channel will have to cross the river between the two bends. It will most likely begin to cross soon after the first bend stops deflecting or turning the current.

Tip #3: Watch for shiny and darker colored water. Even in windy conditions shallow water will have more ripples than deeper water. Tiny waves are generated when fast moving water flows across the bottom. In deeper water these waves are dampened before they reach the surface. Beware of areas of still water and areas that are shielded from a strong breeze. These areas can appear shiny and still be shallow. This tip will be especially helpful when there are no clearly defined bends in the river and the current is free to meander around.

Tip #4: Watch the silt, seeds, cotton and suds on the surface of the water. They are often more concentrated over the channel and in the faster water. The objects on surface can help you locate the faster moving water, where the channel is usually located.

Tip #5: Watch your path for a line of ripples followed by shiny water. The ripple line will usually mark the shallowest downstream part of a sandbar. The water will be deeper right after the line and you may get stuck before reaching it. If you spot a break in the line of ripples, this area will be less shallow.

Tip #6: Watch others in your group and learn from their successes and their mistakes. If possible observe the undisturbed water surface in front of the lead boat. If a canoe is in the lead, observe a change in the depth that canoe paddle is inserted in the water. Canoe paddles can sometimes provide a clue because they are usually inserted nearly vertical and the full paddle can't be inserted vertically in shallow water.

Tip #7: If you do get stuck, stand up and observe what happened and where you should go next. Lines identifying sandbars and narrow paths of shiny water are much easier to see when your eyes are elevated.

Tip #8: If the river straightens out, expect the channel to become much less defined and not so deep. The channel can split in two or more paths and sometimes disappear. The shiny water tip may be the only one that provides hope.

Tip #9: If sandbars are prevalent, watch for thick sharp edges on the sandbars that appear as though they are caving into the water. This is evidence that the sandbar is being carved away by the current. Deeper and darker colored water is usually found near these thick sharp edges. Sandbars that gradually taper into the water indicate shallow water near the sandbar.

Tip #10: Attach a leash to your boat. Sometimes the river channel simply disappears into multiple and shallow threads. Bow and stern lines can make it easy to pull your boat with your back straight or secure it while you get a snack or help a friend.

Tip #11: A kayak or canoe that is well balanced does much better in drafting the shallow areas than one in which either the bow or stern is heavier or unbalanced. Often, one can reposition gear and/or extra paddlers to help balance the load.