

Bass

Before and After Turnover

by Brian Sak

Fooling bass into biting is the easy part of fishing. Putting your offering where your quarry lives is another story. Learn how lake and reservoir conditions dictate where bass locate, and you'll catch fish more times than not.



What makes warm-water fish species like bass special? For one thing, anglers like outdoor journalist Bill Adelman can catch them on top whether a lake is stratified or not.

Stratification and turnover: Two relatively common words that most serious anglers have heard or spoken several times during their fishing careers. The two terms are related, and when applied correctly they can help to both locate an angler's quarry and make the fish they're after bite. Stratification and turnover, however, are also two of the most misunderstood words that anglers use.

For those that want to maximize their chances at success when on the water, memorizing the definitions of stratification and turnover is not enough – you'll have to understand the two concepts and recognize how each influences the fish being targeted.

Although the stillness of lakes and reservoirs make them look rather inanimate, these tranquil waters are as alive as you and the fish you're trying to catch. They are complex systems made up of physical and biological components that are constantly altering in response to conditions. Bass, being a part of this system, must adapt to any changes that take place.

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Stratification and turnover are two seasonal conditions that occur in most relatively deep lakes and reservoirs. Each affects several components of the bodies of water where they occur, but the two factors that influence bass most, both directly and indirectly, are concentrations of dissolved oxygen and temperature.

STRATIFICATION

During the winter, most lakes and reservoirs throughout the country provide ideal conditions for bass and other fishes from top to bottom. The wave action and turbulence that accompany storms this time of year ensure that there's plenty of dissolved oxygen, while the relatively strong winds mix waters well.

Bass-holding areas, during the coldest months, are not limited by oxygen level and temperature, and fish can be anywhere. This is a great time for anglers – everyone that likes to fish shallow will have success casting to the bank, while those that prefer probing the depths can catch fish in offshore areas.

Lakes and reservoirs, however, begin to go through a dramatic change when spring arrives. As the sun gets higher in the sky and days lengthen, the more direct rays, striking the earth for longer periods of time, warm surface waters rapidly.

Temperature differences between surface and bottom waters create a corresponding density difference, which grows as spring progresses, making it more difficult for winds to mix lakes and reservoirs. Toward the end of spring and into summer, as winds decrease substantially, there isn't enough energy for this top to bottom mixing – it comes to an abrupt stop, and lakes and reservoirs that are deep enough become stratified or layered.

The upper layer is composed of warm water, and because its density is low the remaining summer breezes have sufficient energy to mix the layer. Plenty of mixing,

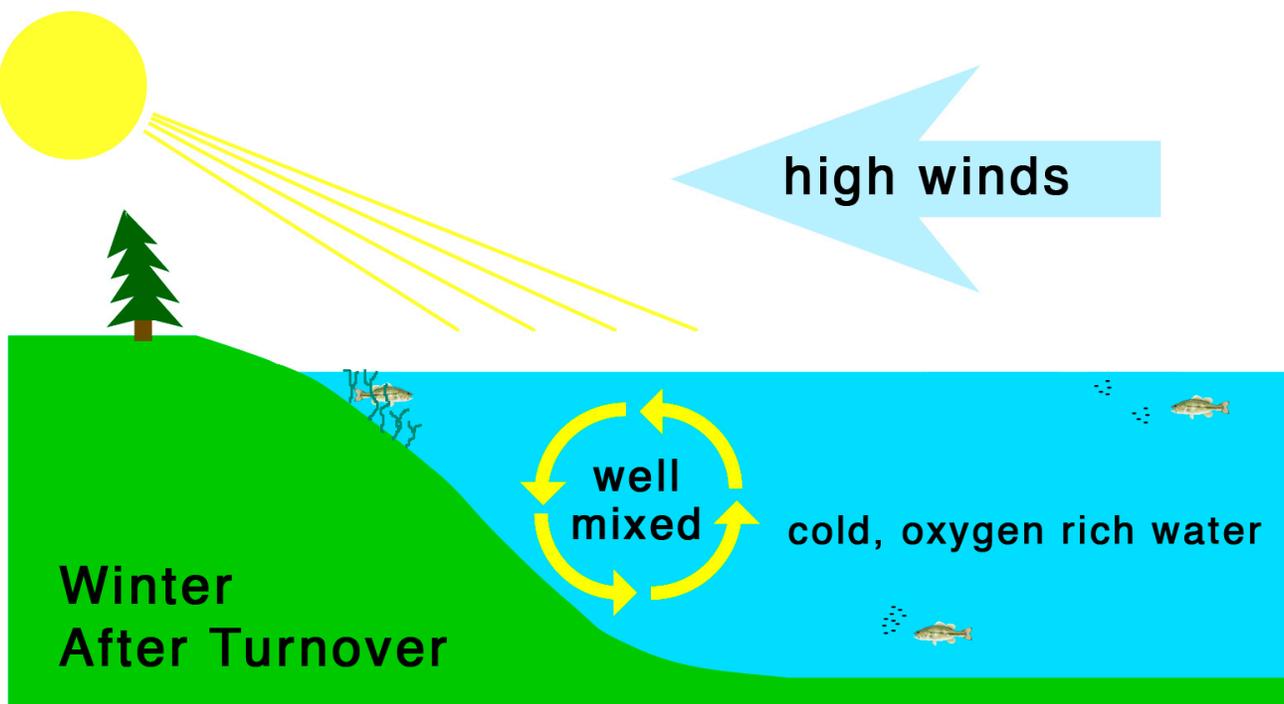
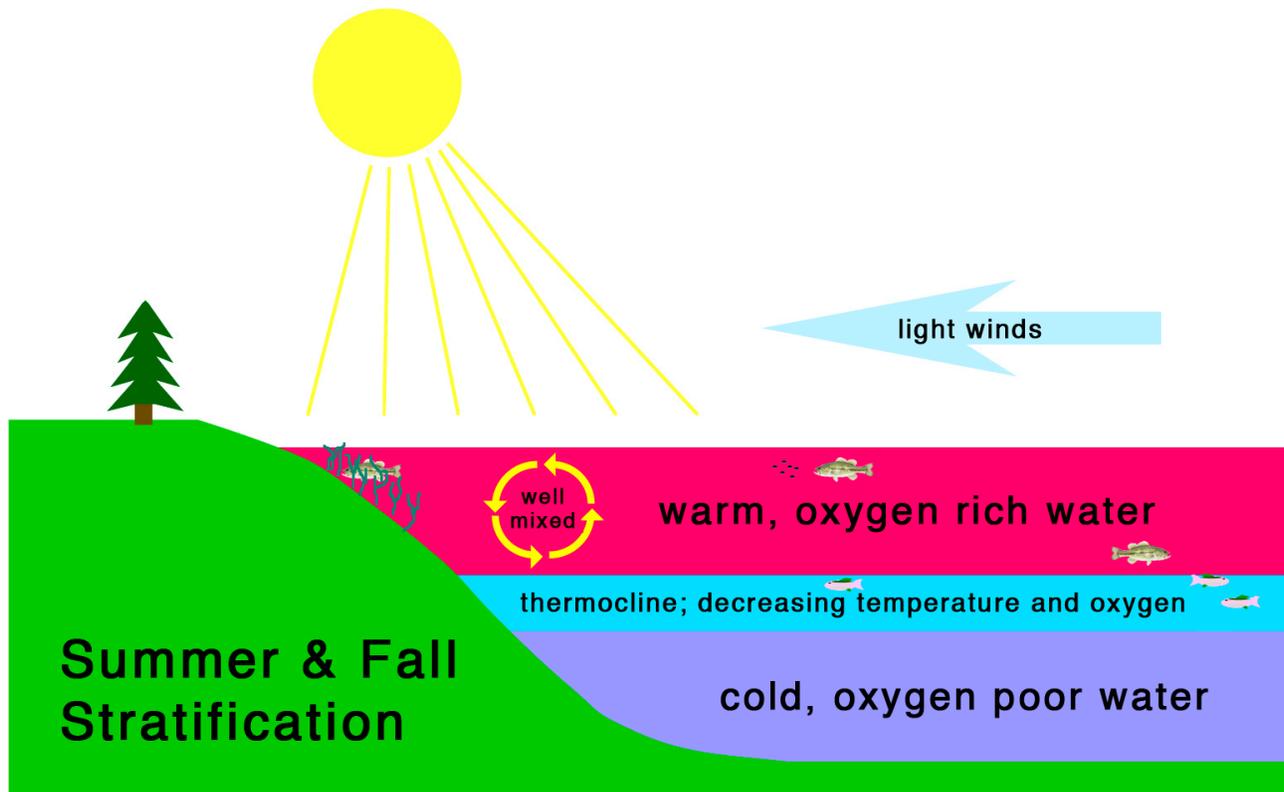
combined with lots of photosynthetic activity, keeps the dissolved oxygen concentrations at or near saturation.

Although in most instances the surface layer provides suitable oxygen and temperature conditions for bass, there are times when the shallowest waters present problems. The most common is when the upper layer of stratified lakes and reservoirs with large algae populations undergo dissolved oxygen concentration crashes during the night as plant respiration depletes oxygen to critical levels – in extreme cases the shallowest waters become uninhabitable by first light.

The bottom layer of stratified lakes and reservoirs remains relatively cold, and even though these frigid waters have the ability to hold more dissolved oxygen, the decomposition of organic materials and other biological processes use it up quickly. Without a source of oxygen (sunlight doesn't penetrate deep enough for photosynthesis here) and with the absence of mixing, the depths soon become unsuitable for bass and other fishes.

Stratified waters also have a middle layer, otherwise known as the thermocline, which acts as a barrier between the surface and bottom layers. Within the thermocline dissolved oxygen and water temperature levels drop rapidly. The thermocline tends to be livable for most fishes, and is the summertime and autumn home to those that require cold water.

The timing of stratification, and the depths at which each of the three layers becomes established, varies with both geographical location (due to different weather patterns) and lake- or reservoir-specific characteristics (shape, depth, orientation, and water level fluctuations). Although most bodies of water go through a single stratification and de-stratification cycle each year, some have two while others none.



Thanks to warming temperatures and little circulation, many lakes and reservoirs stratify during the warmest months of the year, leaving them with layers of varying water conditions. Bass become concentrated in the warmer surface layer during summer and fall – you'll find them in cover, chasing bait in open water and looking for a cold-water meal just above the thermocline. When winds and dropping temperatures cause bodies of water to turnover, the entire water column becomes suitable and you'll catch bass from top to bottom.

4—Bass Before and After Turnover

To locate the thermocline in your favorite lake or reservoir you'll need a quality depth finder. You can graph the invisible barrier, where low-density water meets high-density water, by turning up your unit's sensitivity – see your instruction manual for details.



San Francisco Public Utilities Commission limnologist Mike Horvath uses sophisticated equipment to locate the thermocline of a stratified reservoir, but you can find it by setting the sensitivity of your depth finder to high.

TURNOVER

The de-stratification of a lake or reservoir is known as turnover – a poor word choice for the annual event. Most fishery biologists agree that one of the most frequently asked questions is; ‘what brings the bottom water to the top, and the top water to the bottom?’ A typical response would be along the lines of ‘that’s really not how it works.’

When autumn arrives the sun gets further away and the days become shorter, causing the surface waters of lakes and reservoirs to cool. There is also an increase in the frequency of storms, with their associated winds supplying more energy for mixing. As the density difference between the layers of

stratified waters is reduced, and mixing increases, the surface layer becomes thicker – the thermocline is consequently pushed deeper. The upper layer slowly reaches the bottom, leaving lakes and reservoirs mixed from the surface to the depths. Fishes can once again go wherever they want to go.

An additional benefit of autumn turnover is the explosion of food made available by the phenomenon. Nutrients, which are commonly bound tightly to the sediments, are released into the water column when oxygen is depleted during the latter stages of stratification.

Unused, because nothing is able to survive in these oxygen-starved

layers, the nutrients are up for grabs following turnover. The process provides a shot of fertilizer, resulting in a burst of feeding activity from the bottom of the food chain to the top.

CATCHING BASS

Largemouth, smallmouth and spotted bass are considered warm water fishes. Each does fine in the oxygen-rich surface layer of stratified lakes and reservoirs. Both food and cover tend to be plentiful, allowing you to catch bass using a variety of presentations.

To fool fish holding in the upper layer into biting, you should be casting something that represents what they are keyed into

feeding on. Bass generally eat the prey-types that are most available (opportunistic feeders), so it's probably best to avoid something they're not accustomed to seeing.

Bass living in, or around the perimeter of thick weed beds may be eating other sunfishes or looking for a frog or mouse scurrying across the top of the vegetation – a bulky brown and orange spinnerbait or surface frog may be the ticket here. Trying plastic-tipped jigs around rocks for bass feeding on crawdads, or your favorite shad-pattern crankbaits for fish chasing threadfin (another warm water species), would be good bets too.

Although you may still catch a few fish, it's not in your best interests to tie on baits that represent cold-water prey when fishing the warm surface layer. Anglers that routinely use oversized trout-pattern swimbaits on stratified waters do best when getting their offering in the vicinity of the

thermocline – one exception is in areas where dazed hatchery rainbows are stocked.

Avoid targeting waters below and toward the bottom of the thermocline altogether – oxygen concentrations are unlivable or stressful at best, while temperatures are below the comfort level of bass.

When the turnover process is well underway, bass anglers can expect the fishing to be tough for a short time regardless of what depths they're targeting. The slowdown can be contributed to falling water temperatures, and can last from a few days to several weeks depending on how quickly conditions stabilize.

Once bass become reconditioned to the cooler water, and the infusion of nutrients from the bottom works their way up the food chain, you should expect some of the best fishing of the year. It's again possible to catch bass from shallow to deep with whatever method suits your mood. *g*

LAKES ARE NOT ALIKE

Two made-up bodies of water, taken from a real-life example, show why it's vital to understand stratification and turnover.

Lake Bucketmouth and Spots Reservoir, located in our hypothetical fishing wonderland, are only 80 miles apart by road, but when it comes to stratification and turnover they're like night and day. The two waters are similar in elevation and ecology, and each offers exceptional bass fishing. To look at them you would assume whatever works in one would work in the other.

But maybe not!

Bucketmouth is only 35-feet deep, and the valley nights tend to get chilly year-round. Its surface area is large relative to its volume, and because its upper waters cool each night it almost never stratifies. When a warming trend does stratify Lake Bucketmouth it's weak, and as soon as the breeze begins to blow the layering is gone.

Spots Reservoir, on the other hand, pushes 140-feet at its deepest point and seasonal stratification is strong. By mid-summer the upper 30-feet of warm, oxygen-rich water is totally isolated from deeper water by a 10-foot thermocline. Within a few feet of the bottom of the thermocline, oxygen concentrations drop essentially to zero. The strong density differences keep the stratification intact, even in the event of an unseasonable storm.

Bucketmouth and Spots look the same from the surface, but it's obvious that bass will behave differently during much of the year.

Lake Bucketmouth may be slightly cooler during the summer and autumn months, but the bass have access to all its water. Casting a big trout-pattern swimbait will catch bass at any depth. Targeting stumps along the edges of a well-defined creek channel may catch fish too.

The bass at Spots, however, are restricted to waters above the thermocline during the warmer months of the year. The swimbait used at Bucketmouth may only produce when trolled near the home of resident trout that stick close to the thermocline. And chasing bass using the creek channel will probably work too – as long as you don't go deeper than 30-feet.

The only way to know whether the lakes and reservoirs you frequent stratify, how fishes respond and where to target bass is to get out on the water. Keeping a detailed log of weather conditions, water temperatures, the depth of the thermocline and where you do and don't catch fish will give you the details you need.