Do moon phases affect bass fishing?

By MIKE S. ALLEN, Professor
BASS Times Contributor

ANGLERS OFTEN TALK about how fishing is best around full or new moon phases. Spawning activity for bass, bluegill and crappie peaks around full moon periods, they believe. Even in summer and winter, fish activity and fishing patterns are said to be associated with moon phase and various solar/lunar tables.

But is that true? Does moon phase or position relative to the sun really influence freshwater fish activity?

To investigate this question, I searched for scientific evidence about how moon phase could affect fish spawning and angler catches. I started looking for information related to bass, but I quickly realized I needed to look more broadly to include a range of species. You may find the results surprising.

Most scientific work evaluating moon phase has occurred in marine environments. Because moon phase influences the strength of the tides, many species of marine fish and shrimp spawn near full or dark moon phases, when tidal currents are the strongest. Marine fish often synchronize their spawning with strong tide events that occur at the full and new moon phases. This occurrence makes sense because many marine fish species depend on tidal currents to transport their larvae from offshore areas into shallow estuaries. Fish feeding activity also increases during these times because of increased current and food movement around predators during strong tides.

So, scientific evidence supports that moon phases can influence fish activity and spawning behavior in marine environments, but moon phase also substantially influences the physical environment (flow and water levels) and would be expected to directly influence fish.

In freshwater systems I found very little scientific work that addressed how moon phase influences fish spawning and behavior. Freshwater lakes and reservoirs don’t have tidal cycles, and therefore food or habitat availability should not change substantially with moon phases.

This conclusion is supported by one key study on largemouth bass conducted by Kyle Hanson, Dr. Steve Cooke and colleagues at the University of Carleton in Canada. The scientists used telemetry to track largemouth bass movements within a lake for one year. By deploying a large set of automated receivers, they were able to continuously track both the horizontal movements and the depth used by largemouth throughout the year.

They did find some evidence that during spring and summer, the fish used deeper water in the first quarter and last quarter moon phases, meaning just before the full and new moon phases. Nevertheless, the authors concluded: “The current study found no evidence suggesting that activity levels of largemouth bass are affected by the lunar cycle in a repeatable manner throughout the year as suggested by ‘solunar’ calendars.”

Spawning and the moon

Now let’s explore fish spawning. Dr. Mark Rogers with our group at the University of Florida showed that largemouth bass spawning was not synchronized with moon phase in Florida lakes ranging from the north (Lake Seminole) to the south (Lake Okeechobee).

Rogers measured when juvenile bass were hatched in lakes by determining their age with ear bones, and he found no evidence that spawning activities were concentrated around moon phases over two years.

Fish spawned when water temperatures were suitable and continued to spawn for two to six months thereafter. Rogers found strong peaks in spawning activity at nearly all lakes, but there were not clearly related to any particular moon phase.

Even if fish don’t move more or spawn heavier on a particular moon phase, they could still be easier to catch. Many anglers feel that moon phase especially influences trophy catches. To explore that concept, I enlisted the data from my friend and trophy bass angler Porter Hall.

Hall has pursued trophy largemouth bass in Alabama, California, Georgia, Florida and Mississippi over the past 35 years. In total, he has caught more than 450 bass weighing 10 or more pounds, and he has kept excellent records of these catches. His log books relative to moon phase showed some interesting trends. (See chart.)

These values are totals across all months, and each moon phase represents three days and three days after each moon phase. I looked for seasonal differences and couldn’t detect any clear pattern for any particular month or season. The results showed some evidence for higher trophy bass catches during the first quarter and full moon phases (half the time), but the differences were not extreme and thus not compelling. The new moon phase had the fewest catches but still represented 21 percent of the total (just less than the expected average of 25 percent).

Overall, the scientific and angling evidence for moon phase effects was weak at best. Planning your fishing trips around a full or new moon is not a surefire strategy for success.

Perhaps this means that anglers should go fishing at every opportunity they can and not worry about the moon phase.

Put another way, if you want to catch more and bigger bass, go every chance you get.