HYDROWAVE TEST

Final report

By; Jake Bussolini

A complimentary Hydrowave unit was provided to the writer in December of 2011 with the intent to provide a series of controlled tests to determine the effectiveness of the unit under a series of different fishing conditions. Since the receipt of the equipment was in the colder winter months in North Carolina, the initial series of test were conducted during December, January and February on Lake Norman in western North Carolina. The author's fishing procedure during these colder months is to troll, using a 16 foot pontoon boat. The first series of tests used this fishing method and this boat. The author understood that this fishing procedure was not the procedure for which the Hydrowave was designed. The author felt that it would be a good test of the basic theory of the Hydrowave if it was used under conditions different from its intended mission.

The initial plan was to switch to a different fishing mode in the spring months when the water warmed and the bass moved to the shallower water. At that time the Hydrowave was switched to an 18.5 foot Sea Chaser boat, where the fishing technique was to be the traditional casting around docks and other structure.

There was a third phase of testing planned, where the unit was to be used in Canada fishing for smallmouth bass, but that phase was cancelled due to scheduling conflicts.

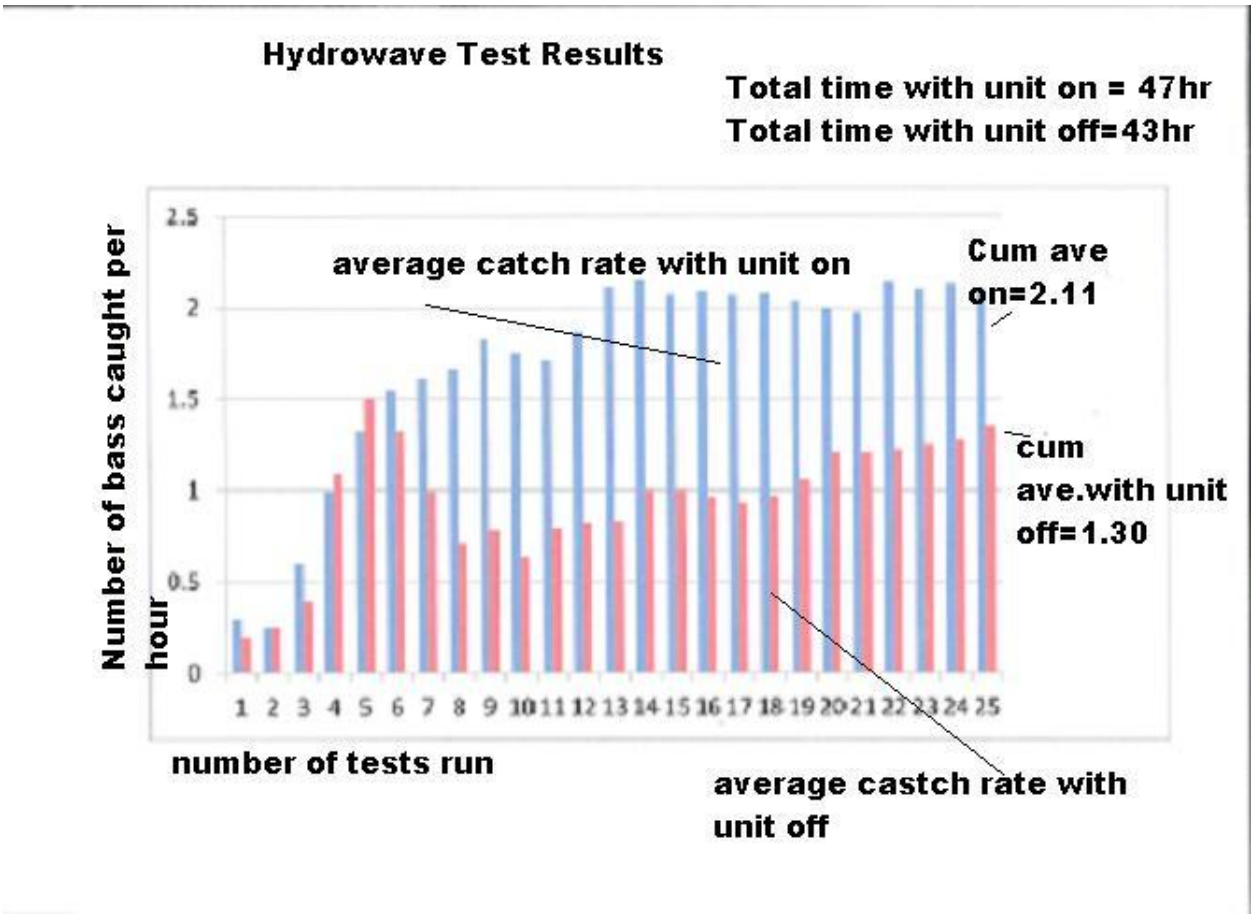
The procedure used was to record all catch activity during times when the author was fishing during the testing period. The unit was turned on for a period of one hour, then turned off for the same time period. This was repeated on each day of fishing. Most fishing days consisted of at least four hours, so there were two opportunities on each day for the unit to be on and the same time period for the unit to be off. The fishing procedure, bait, weather and all other factors were always the same on a given day of fishing so that the catch rate would not be influenced by external factors such as weather, water temperature or fishing procedure. Records were kept of all fish caught including catfish, crappie and perch, but only the largemouth and spotted bass were counted in the test results. During the entire test period, 95% of the fish caught were bass so there was no opportunity to determine if the Hydrowave had any effect on the other fish species.

During all of the test periods, both boats used fish-finding sonar equipment, Lowrance 332c sonars. Hundreds of sonar image photos were taken using a digital camera to get data on fish activity when catches were made. Sonar image photos were also taken of any bait schools that were spotted in the immediate fishing area that might also influence the results. Recording bait

school activity would also indicate if the sounds emitted by the Hydrowave were having any effect on the bait schools in the area.

Results

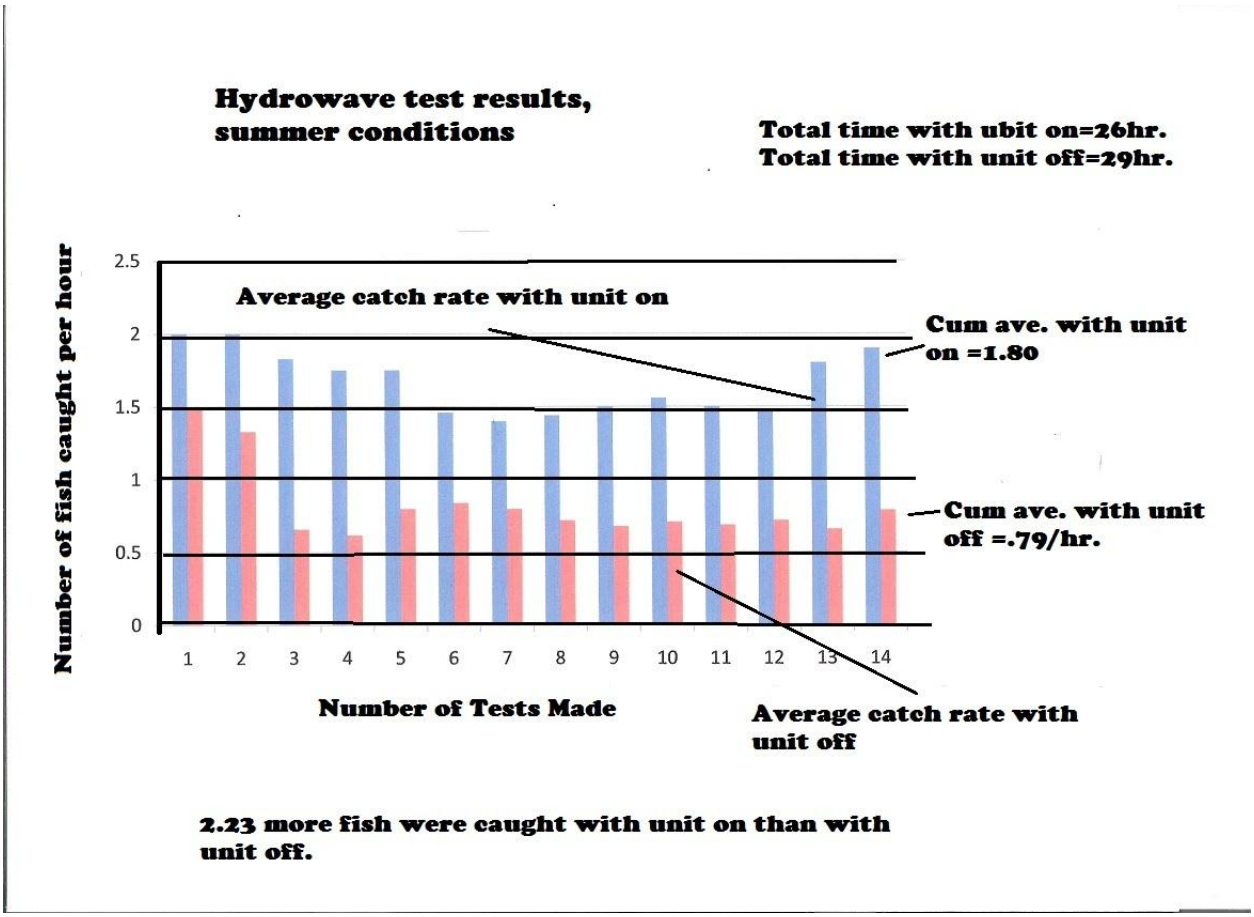
1. During the initial cold water tests, there were 30 days of testing, not all sequential. Five of the tests were discounted due to the suspicion that the unit had become disconnected, leaving 25 individual days of cold water testing. During this first phase, there were 100 hours of fishing with nearly equal on and off time for the Hydrowave. When the unit was on, the individual settings of sound were varied randomly, so there are no results based on the most or least effective bait school sounds. During these first phase cold water tests, there were 156 bass caught, 100 bass caught with the unit on and 56 caught with the unit off. The test results for the first phase of testing are shown below.



2. The results shown above indicate that the cumulative catch rate when the Hydrowave was on was 2.11 per hour. The cumulative catch rate when the unit was off was 1.30 per

hour. **This would make the catch rate 1.62 times better when the Hydrowave was turned on.**

3. Water temperature and barometric pressure were carefully monitored during these tests and evaluation showed that the variations in these two elements appeared to have no effect on the catch rate.
4. During the second phase of the testing, the waters had warmed and the bass were moving into the shallow waters. The tests were run during the months of May and June. There were 58 hours of testing during this period covering 14 days of testing. The results of this phase of testing are shown below.



5. These results showed that during the times that the Hydrowave was turned on (29 hours) there were 47 bass caught for a cumulative catch rate of 1.80 per hour. During the 29 hours that the Hyrdowave was turned off, there were 23 bass caught in a period of 29 hours for a cumulative catch rate of 0.79 per hour. **This indicates a catch rate 2.23 times larger when the Hydrowave was on compared to when it was off.**
6. Because the shad had schooled during the warmer months, there were many more shad schools visible during the second phase of the test periods. There were some repeated indications that the shad schools had a tendency to scatter when the Hyrdowave was

turned on. This was observed several times but it must be stated that it is possible that the bass in the area were the cause of the shad schools scattering. In either case shad school scatter was a definite observation.

7. Most of the fish caught were measured and photographed to determine if there was any difference in the size of the fish caught with the Hydrowave on, compared to when it was off. There appeared to be no difference in size.
8. Catch rates for both unit conditions were slightly better at times when there were large schools of shad in the area during the warm weather months. This was an expected situation.
9. There were a few instances when the sonar indicated that fish had risen in the water column to investigate the sound source, and then descended again when no bait was observed.

Other Observations

1. It was sometimes difficult to determine audibly of the Hydrowave was actually working. The control unit sound should be made slightly more audible.
2. The display window was often unreadable during sunny days due to reflection. Improvement in the display is needed.
3. The sequence of settings required to turn the various sounds on is confusing to the user. The settings should either be redesigned or the instruction manual clarified. I had to discard 5 days of testing because I was not sure if the unit was actually on.

Author Qualifications

Jake Bussolini who planned and conducted these tests is a 76 year old former engineer and executive. He is experienced in statistically valid testing and was careful during these tests to insure that there were no external factors that influenced the test results. During his professional career, Jake published more than 50 technical papers and articles and has been listed in several issues of Who's Who in Engineering and Who's Who in Aviation. Jake has been doing lake and river research for more than 15 years since his retirement and has written 5 books on freshwater fishing that emphasize mixing the science of fishing with the sport of fishing. Jake is a member of SEOPA (Southeast Outdoor Press Association) and a regular staff writer for ODUmagazine.com, an online outdoor publication. He has been published in several other publications. Much of Jake's background can be obtained by Googling his name. His web site is www.jakestakeonfishing.com, his blog is www.jakesfishingfacts.blogspot.com. His email is allandco@roadrunner.com. He resides with his wife Mary Lou on Lake Norman in Mooresville North Carolina.