

Mussel Harvest and Techniques Used in Enforcement

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Abstract: The Japanese cultured pearl industry has caused the demand for the freshwater mussel shell to increase throughout the Southeast. With the market value of the resource increasing, enforcement officers must use varied enforcement techniques to apprehend law violators.

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In the early 1950s, Japan's cultured pearl industry discovered freshwater mussel shells made an excellent nucleus for the pearl. Predetermining the size and shape, a plug is cut from the shell and implanted in an oyster. The mantle secretion begins to form, and within 2 years a valuable cultured pearl is grown. Cultured pearls are also being produced in Tennessee by both the American and Tennessee shell companies.

Over the past 10 years, we have noted the market value of Kentucky's shells have increased dramatically. Shells from the Tennessee River have increased from \$650 per ton to \$14,000 per ton on some species. Shell prices have caused many people to get involved in harvesting the resource. We have noted that some people who have previously held good-paying jobs in offices and industry have given up those jobs to begin musseling. Some have gone into both legal and illegal harvesting. These people come from other states as well as Kentucky. In some cases, it's because the resource is depleted in their home state. Another reason has to do with the quality of shells found in some areas of Kentucky.

This continuing and increasing demand for shells prompted Kentucky's fishery division, in recent years, to make some changes in regulations governing the harvest of mussel shells. Some changes were made to insure a continued supply of the resource and others to settle the controversy among fishermen, both sport and

commercial, and among mussel harvesters themselves. Presently, the regulation requires that shells may only be harvested by licensed musselers during daylight hours, using a brail. Sanctuaries were established and legal size limits were set by regulation. Present size limits protect immature mussels from harvest, thus allowing natural reproduction to keep mussel populations stable.

Due to our state's many lakes and streams, effective law enforcement techniques differ somewhat. The quality and market value of shells found in various locations differ greatly. Musseling activities are greater in areas where the higher priced shells are found according to our enforcement officers.

It is our experience that the better quality shell is found in relatively shallow water. It is not uncommon, however, for harvest to occur in water depths up to 45 feet.

Although brailing is the only legal method of harvesting mussels in Kentucky, officers are continuously contacting violators taking shells by other methods. One of these is diving. Some shell harvesters use regular scuba gear and tanks, while others place a large air tank or air compressor in a boat and dive with only a mouthpiece and hose. Others "free dive" by merely holding their breath and picking up as many shells as possible before returning to the surface for air. This method usually occurs in water ≤ 10 feet deep.

One of the most common methods of illegal shell harvesting is referred to as "toe digging," feeling the shells with hands and feet and simply picking them up. A "toe digger" will normally have burlap bags, feed sacks, or buckets to put their shells in. Some simply pull a small johnboat, rubber raft, or a canoe along with them to hold their shells. Occasionally violators have been found using hand-held rakes as a means of harvesting shells.

Another method is dredging, and the design of these devices varies greatly. Dredging devices are designed to be pulled behind a boat and simply scoop the shells off the bottom and hold them until pulled to the surface.

These numerous methods of illegal harvest used on lakes and streams throughout our state cause the enforcement officer to be very versatile in his or her techniques to detect and apprehend a violator. First of all, the officer must pay close attention at times to even realize that a violation has been or is being committed.

A few things for which officers should be on the lookout to detect illegal musseling are: scraps of gray duct tape that divers commonly use to tape air hoses; burlap or feed sacks that have holes in them and therefore have been discarded by the violators; a small pipe wrench or a crescent wrench found in boats which are used to remove gauges from air tanks. The adjustable crescent wrenches are usually rusted and seized up at the setting that just fits an air tank. Discarded clothing is very common where heavy "toe digging" is taking place. Usual items found are T-shirts, cut-off blue jeans, old tennis shoes, and sometimes old rubber dishwashing-gloves.

An officer should be on the lookout for slides on the lake or river bank that are made by dragging heavy sacks up the bank. From a distance, these places greatly resemble a beaver slide and therefore require close inspection. Usually, there will

be vehicle tire tracks at the top of the bank. Sometimes the violators will leave their ropes and pulleys behind to be used later. At times we have found air tanks and hoses, dredges, wet suits, sacks and buckets hidden in the bushes along the bank. Sometimes these items are found submerged. We have also found boats that have been sunk to hide them from the patrolling officers.

Officers should be aware of legal-looking brail boats that are put on the water and return a short time later fully loaded. In most instances, these boats have simply gone to bags of shells left hidden by divers and hoisted them aboard. They return to shore pretending to have taken the shells by brail.

The officers need to know approximately how many shells a legal musseler can take in a given time frame. This will vary greatly from lake to lake and stream to stream. The time of year and water temperature also have a lot to do with this. The brailer usually puts shells in a bucket or crate. The diver or toe digger normally uses some type of sack. Some illegal musselers will go so far as to peck the edges of two mussels against one another to chip a piece out to simulate a brail mark found on legally taken shells.

On numerous occasions, officers will find that while a diver is diving from a boat, there will be someone in the boat posing as an innocent fisherman. Actually that person will be regulating the divers' air supply and acting as a lookout. On more and more occasions, officers will find camouflaged lookouts, equipped with walkie-talkies, police scanners, and binoculars to warn the violators of the officer's approach. When the officer arrives on the scene, everything will look like a normal legal activity. There seems to be an increase in the number of scanners being used, in both vehicles and boats. The use of coded maps and a call signal system will be of benefit to the officers and dispatchers.

Boats aren't always involved. Many times illegal musselers will come in by vehicle on some isolated farm road, or other remote access point and work directly from the bank. Frequently, violators use lookouts and if the officer is not on guard for this, he will never detect the violation. The lawbreakers will use every means possible to remain undetected.

Early morning and late at night are 2 favorite times to violate. Illegal musselers try to plan their activity when they think an officer is likely committed to another work detail, such as court appearances, meetings, the opening weekend of a hunting season or simply when the weather is bad.

Our officers have become very creative in detecting where and when the violations are occurring. Officers mark roads and trails being used with such things as sticks, tree limbs, light fishing line, a symbol in the dust or mud and tire tracks. These methods have been used to determine a time frame or pattern for the illegal activity.

As in every enforcement agency, we find that some of our officers are better at enforcing these laws than others. Those who enjoy this activity will be more observant and naturally do a better job. With this thought in mind, selection of personnel and task assignment is crucial.

Enforcement equipment needs must be met by the agency. An officer's equipment may be as simple as a radio, binoculars, boat and motor, camera, and flashlight.

For an officer to be completely effective, an agency also must consider providing officers with special equipment such as video camcorders, cameras with telephoto lenses, spotting scopes, military-style night vision goggles and starlight scopes, aircraft patrols, and boats and motors that are large enough to overtake a fleeing violator and protect the officer's safety.

Our officers apprehend the majority of those violating our musseling laws on large streams and lakes by boat patrol. Covert style enforcement is most effective during daylight hours. Officers may appear to be fishermen or merely pleasure boaters. On the other hand, night patrol should always be from a fish and wildlife patrol boat with proper markings and lighting, and for safety, officers should always be in uniform. An effective way to work large lakes and rivers that have commercial barge traffic is for the officers to travel with the barge, using the noise of the barge as cover. Barges usually tend to shine a boat near the navigational channel and any other boats they pick up on their radar.

We have previously had violators attempt to allude our officers by fleeing, and they have been somewhat successful. Some violators have led our officers on high speed chases and have been charged with wanton endangerment in addition to the mussel harvesting violation. Some have been charged for possession of drugs of various types. Other violators apprehended have felony arrest records, including attempted murder. In the first 8 months of 1991, in excess of 200 violators have been cited to court for taking shells illegally in the 14 western-most Kentucky counties alone. In addition, covert efforts were directed toward the harvest and illegal sales of undersized shells. Several thousand dollars in fines were paid by the buyers, resulting from the joint effort between Kentucky and the Tennessee Wildlife Resource Agencies. Several more citations have been issued across the state. Many of these have resulted in large fines and several thousand dollars worth of equipment and shells being confiscated.

On small streams and rivers across the state, an officer many times finds it necessary to park a patrol vehicle and walk for miles to apprehend a violator or to gather evidence. It is a good idea for an officer to work his way into an area before he expects the offenders to arrive. By doing so he defeats their lookouts. Officers sometimes have to do this several days and nights to be successful.

If educated on what to look for and who to report it to, landowners and sportsmen can be very helpful to an officer. Some illegal musselers are very careful not to leave any evidence behind. Legal musselers will sometimes report illegal activity. Mussel buying stations are a good place to watch for violators bringing in large quantities of shells. You can identify vehicles being used. This will help you when checking boat ramps and other access areas for activity. Local police agencies also have been a big help to us in the past.

Evidence collection is, as in all law enforcement, a vital part of the case. If your timing is not planned perfectly for apprehension, all evidence can and will be disposed of in a matter of seconds. Violators often throw all shells and equipment overboard. At times, the evidence can be retrieved, but a better case is made by careful planning and timing.

No matter how much time you spend or how successful you are at apprehension, you must have a good working relationship with your courts. Prior to prosecution, it is important that the officers fully inform the prosecuting attorney and the judge. They must be made aware of the value of the shells involved and the potential violators have for earning large sums of money illegally. All the laws and regulations dealing with the shell industry should be provided to the courts. In general, the court should have been informed and prepared in advance and have full knowledge concerning the resource. The officer must be certain the court does not look at the mussel as being just a muddy little clam. Make sure these people are aware that throughout the Southeast United States, musseling is a multi-million dollar industry, and that an experienced diver can easily earn \$300 per hour of work.

In Kentucky, we are including training concerning illegal musseling operations in both our Cadet Academy and in-service training for officers. Until recently, musseling activity was primarily occurring in the western part of our state, but we are now beginning to apprehend musseling violators statewide. Not only have we seen the activity spread across our state, but through correspondence with Alabama, Arkansas, Illinois, Indiana, Iowa, Missouri, Tennessee, and Wisconsin, it is apparent they are having many of the same problems. Many times, the same people who violate Kentucky's laws move to another state, are prosecuted, and move again.

In summary, it is our belief that cooperation among states is essential. We, in Kentucky, welcome your ideas dealing with patrol strategies and intelligence reports. We will assist you in any way possible. We feel that due to the amount of money involved, violators will continue to poach the resource throughout the nation. We should also understand and be forever reminded that the "big bucks" being made illegally causes concern for officers safety.