

# Marine Resources Advisory Series



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## SHELL BAGS FOR CATCHING OYSTER SPAT

### TIPS ON CONSTRUCTING AND PLANTING BAGS

Scientists in the Virginia Institute of Marine Science Department of Applied Biology study seasonal aspects of setting of oysters on shells in the summer by placing small strings of shells in the water and examining them weekly for set. Additional studies are carried out by placing wire bags containing about 1/5 bushel of shells in the water to monitor set and survival for longer periods.

Bags are usually placed in the water prior to the start of the setting period in June and removed in late fall. Additional bags are also set in the water in mid-summer and kept there until fall. This way, scientists can tell whether setting and survival are better on shells placed in the water in early summer or in fall.

When bags are collected in late fall, bushel samples of the shells and other material found naturally on the bottom also are examined at selected stations in order to compare setting intensity on the bottom with that on the shell bags. Set on material scattered on the bottom is often lower than on shell bags since bottom shells usually become heavily fouled with slime, barnacles and algae. Also, shell bags are slightly elevated off the bottom where water circulation is better.

Commercial growers have been aware of oyster biologists' work with shell bags for several years and some watermen in Virginia and Maryland started putting down bags in the water over 20 years ago. The practice never gained impetus in Virginia, however, until about 10 years ago when MSX, the microscopic parasite that kills oysters, brought about a decline in setting intensity. At the same time, seed oysters in the James River increased in cost and there was also a tremendous increase in demand for seed oysters in Maryland.

These factors encouraged growers to raise oysters in shell bags for commercial use and by 1971 an estimated 100,000 shell bags were set out in the Great Wicomico and other Commonwealth rivers.

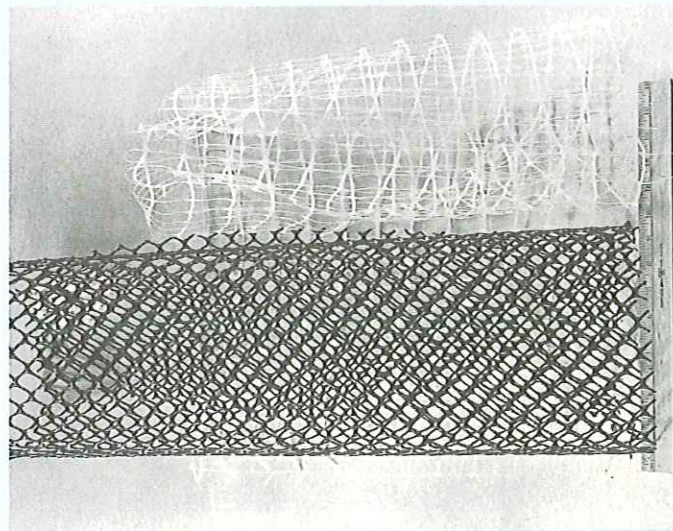
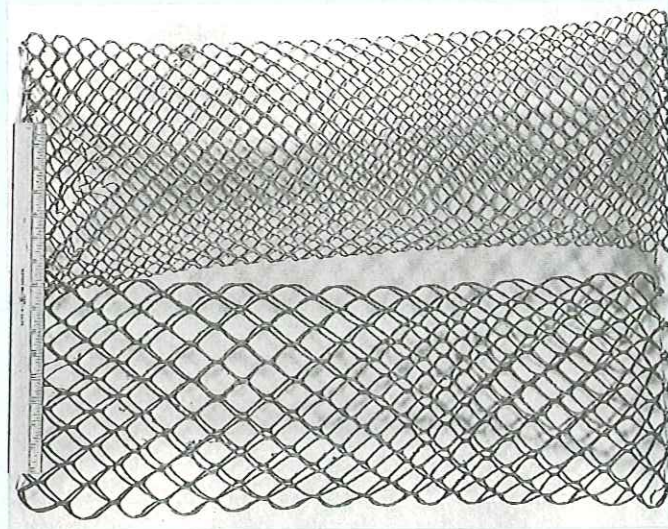
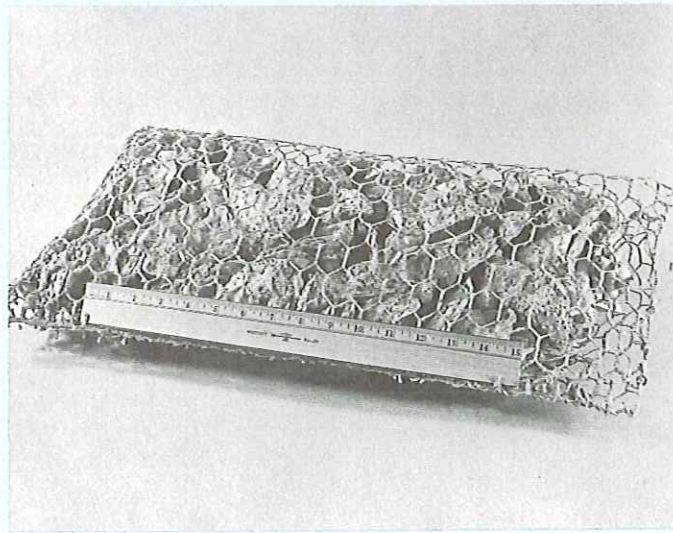
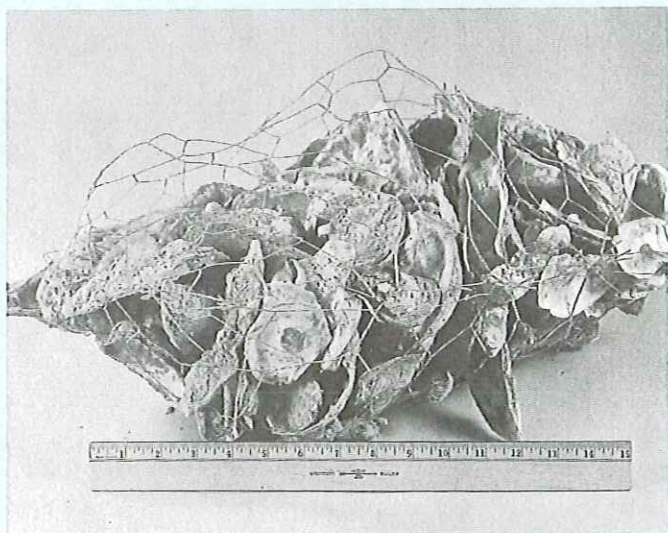
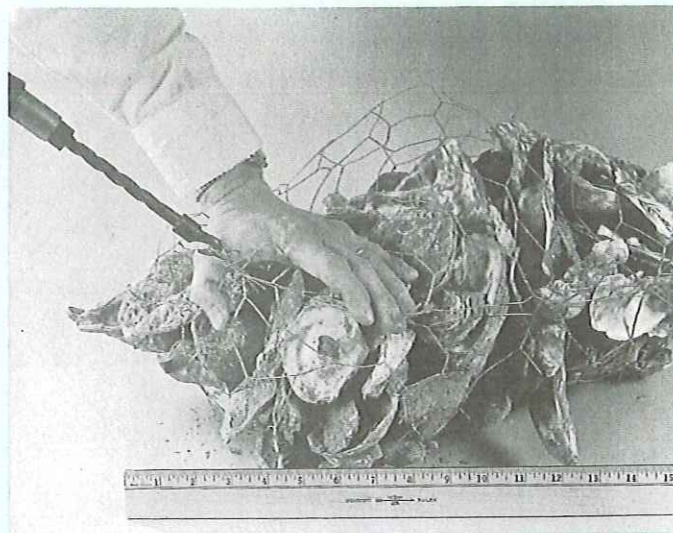
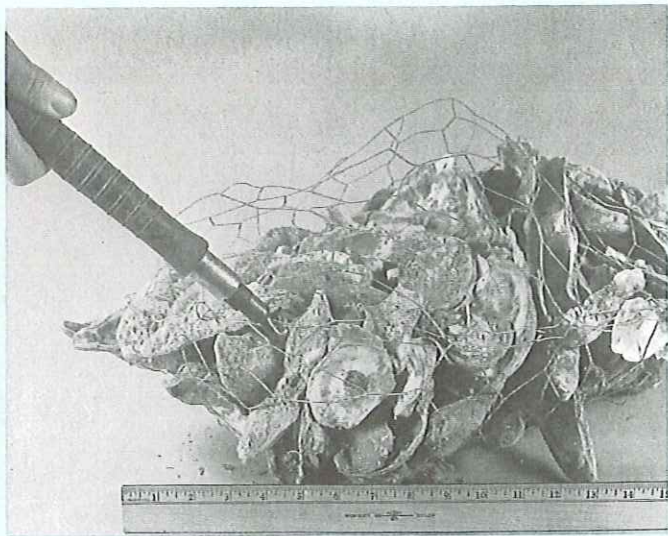


*Shell bags are removed from the water in late fall when the oyster setting period has ended. A bag containing about 1/2 bushel of shells that receives a strike of 1,000 spat or more will sell for about \$1.*

Most shell bags used in Virginia are constructed from 1 1/2 inch mesh galvanized chicken wire. The seams of the bags are held together by twisting the wire with a ratchet tool designed for bailing hay and putting grain bags together. Each bag costs about 25 to 30¢ to manufacture and fill with shells, plus an additional cost of about 10¢ per bag to transport the shell bags to planting areas and put down in the water.

Generally each bag contains about 1/2 bushel of shells and if one bag receives a strike of 1,000 spat, the single bag will sell for \$1. Approximately 400 spat per bag is the minimum which can be sold at about 75¢ per bushel (2 bags); less







than 400 spat per bag are not considered salable, but bags with this count may be used by the owner for his own plantings.

VIMS is also experimenting with shell bags made from plastic of different mesh sizes. Using plastic is favored by some since it does not corrode or break and can be reused, but preliminary results of VIMS' studies reveal some disadvantages which the individual grower must evaluate for himself.

Unlike the wire bags which corrode and disappear within a year or so, the plastic shell bags remain intact in the water, forcing spat to grow out and around the bags. Plastic also interferes with tongs and dredges, but time is wasted if contents of the bags are dumped into the water and the bags are kept on board. This dumping process also results in the loss of some oysters which have set on the plastic.

Perhaps the main advantage to using plastic to construct shell bags is that it lends itself to mechanical construction and filling better than chicken wire, which would reduce the cost per bag.

Regardless of the material selected for construction of shell bags, the bags should be set out where strikes can be reasonably expected. It is also important to put out the bags at least two weeks before the strike is expected. Studies of set on shell bags and bottom material have been carried out at VIMS for many years which enables the scientists to determine peak set and optimum time for planting shell bags. The following rule of thumb is used for best times to put down shell bags in Virginia waters:

Great Wicomico River -- last week in June

Piankatank River -- first week in July

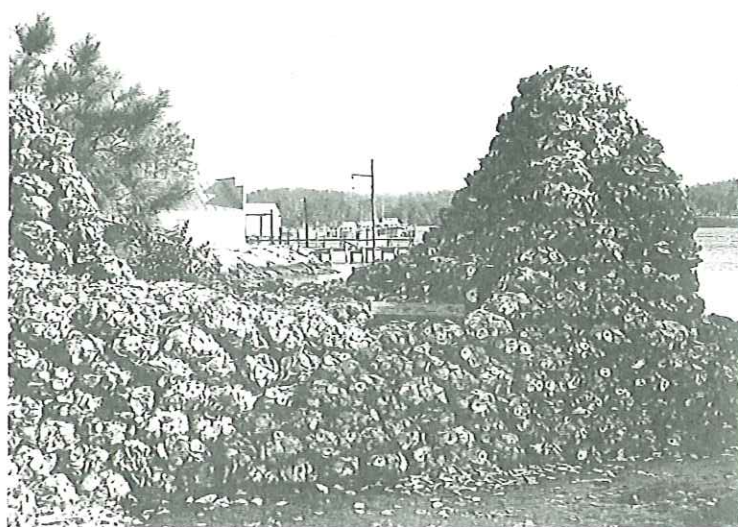
Rappahannock River -- mid-July

Mobjack Bay -- mid-July

York River -- first week in August

James River -- first week in August

The set of oysters on shell bags in Virginia is reported annually in the "Marine Resource Information Bulletin" which



*Shell bags can be constructed during any seasonal period and stored for use when the oyster setting season begins. Some commercial operators make shell bags to sell, as well as for their own use. Cost for transporting and planting is about 10¢ per bag.*

is prepared and distributed by VIMS. Those interested in past setting histories and those who wish advice on specific areas should contact the Department of Applied Biology.

Owners of small acreages adjacent to places reported receiving moderate to heavy strikes are in the best position to make practical use of the study results. Knowing the best time and place to expect strikes, they can set out shell bags to obtain oysters for their own use or for commercial sale to planters, since seed supplies are becoming more difficult to obtain.

Shell bags should be taken up late in September and sold when the oysters are from ½ to 1 inch long. The advantage of using shell bags is that the bags can be put down in shallow water and retrieved from a skiff with gloved hand or boat hook, which minimizes losses.

Most shell bags planted in Virginia waters are constructed from 1½ inch mesh chicken wire. The bags are held together by twisting the wire with a ratchet tool (top section). Completed wire shell bags (middle section) contain about ½ bushel of shells and cost less than 45¢ to construct, fill and transport to planting area. Plastic shell bags of various mesh sizes (lower section) are favored by some because they do not corrode or break. Preliminary results of experiments using the plastic bags has revealed both advantages and disadvantages.

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