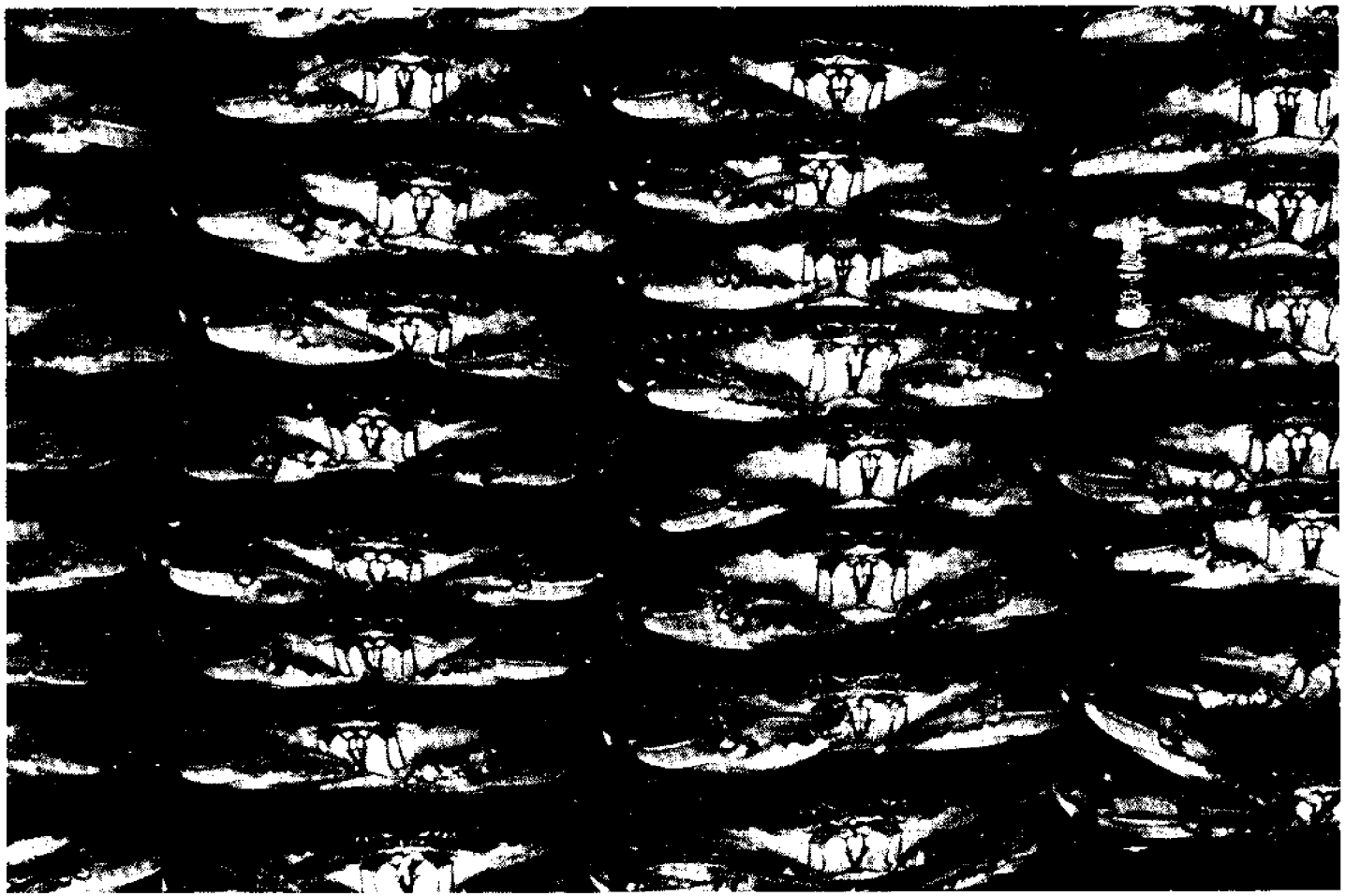
A Guide To Soft Shell Crabbing



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Introduction

The blue crab, with its hard outer shell, grows only periodically through a molting process, called shedding. During this period, the crab literally "busts" out of the old exoskeleton. For a period of several hours after shedding, the hard blue crab, including its shell, appendages and internal parts, is soft. We know the crab in this soft state as a delicacy.

Not only is the soft crab good to eat, but the quantity of edible meat in a soft crab exceeds that of the hard crab by 10 to 15 times. Because of this, the dollar value of soft crabs is much higher than that of hard crabs per individual crab. As a result of the demand for soft crabs, basic economics (profit potential) has encouraged crabbers in a number of states to sell both hard- and soft-shell crabs. This market for soft crabs was originally confined to local areas and consisted of individual consumers and restaurants. Thousands of dozens of soft crabs are still marketed in this way today.

This fishery has tremendous potential for expansion without damage to the existing blue crab population. Millions of peelers (potential soft crabs) are inadvertently caught and sold in hard crab operations. If commercial fishermen catching hard crabs could be convinced to save their peelers and either shed them or sell them to someone shedding soft crabs, North Carolina's soft crab production could more than double without increasing blue crab landings at all.

Blue Crab Biology and Habits

The key to shedding the blue crab, Callinectes sapidus (Rathbun), is knowing its biology. The [illegible]rab's apron, the flap-like covering over the reproductive [illegible]mediately identifies the sex of the blue crab. The [illegible] "T"-shaped apron throughout its life (Figure 1[illegible] has a triangle- or pyramid-shaped apron when [illegible]pe changes during her last, or mature, molt to [illegible]le with a point (Figure 2).

Here is a summary of [illegible] as it relates to shedding crabs. For more complete [illegible] the biology and habits of the blue crab, consult the bib[illegible] the back of the book.

1. Crabs pass through 20 [illegible]s before they reach maturity.

2. Female crabs do not [illegible] again after maturity and thus are not a source of [illegible].

3. Male crabs continue to [illegible] so less frequently as they become larger.

4. A few days before a fe[illegible]lt, the male will pick her up and cradle her underneath [illegible]tion of mating. When she sheds and becomes soft [illegible]rn her over, mate, and continue to cradle her until [illegible]ard. Crabs caught at this time are referred to as doubles and [illegible]hanneler and his wife. The female is protected [illegible]dators and cannibalism and has a much higher rate of [illegible]ndividual soft crabs.

5. Very small crabs shed [illegible]ays. Crabs one-half inch wide, from point to point, [illegible] to 15 days and crabs four inches wide or larger shed [illegible]ys. A market exists in April and May for three-inch soft [illegible]

6. Shedding by both males [illegible]es, stops during the cold winter months. This dormancy [illegible] late November and lasts until early April, depending [illegible]peratures. During this time, blue crabs bury themse[illegible] bottom and all growth is suspended until the following [illegible]

7. The crab will cease to [illegible] as ten days before shedding. Females that will [illegible]ure in their final molt will seek the male crab for mating[illegible]dding, crabs are very vulnerable to predators [illegible]rom the biological ordeal and from lack of food. Even fast-running water or wave action in shallow water can tear the outer shell of a buster and kill the crab. For this reason, crabs shedding will often seek protection in calm, shallow water, near the marsh, in grass lumps, or even in old tires or boxes. This can affect the methods used to harvest peelers and soft crabs.

8. Waters of high salinity such as inlets and the oceans have many more sponge crabs than peelers.

9. Shores, marshes and other calm, protected areas will produce many peelers if the proper harvesting methods are developed.

Potential Soft Crabs

You can learn to identify potential soft crabs up to 14 days prior to the molting, or shedding, process. The growth and development of the most marketable crabs consist of the following six stages:

Table I

Terminology or Sign	Time to Shed
Hard Crab	20 to 50 days
Green Peeler	10 to 25 days
White Line Peeler	5 to 14 days
Pink Line Peeler	2 to 6 days
Red Line Peeler	1 to 3 days
Buster	1 day or less

Shedding time may vary a little from the table above, usually one day or less, in different areas of North Carolina, depending upon water temperature, oxygen and water composition. Smaller crabs shed much more frequently than indicated in Table 1.

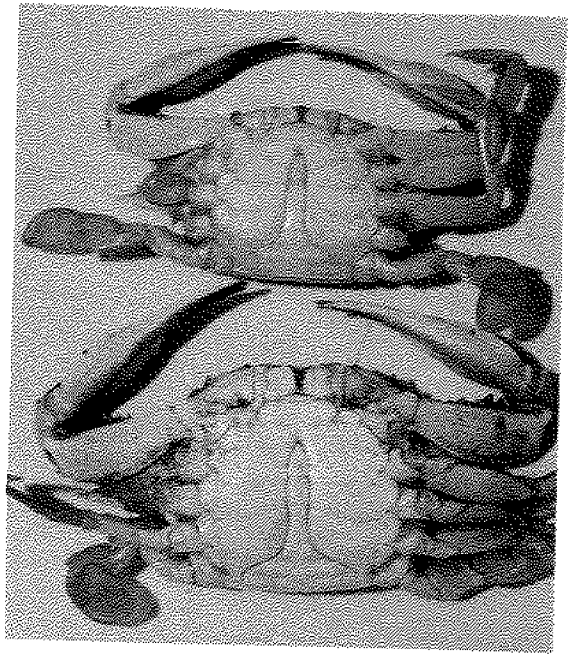


Figure 1
The apron of the male blue crab retains the "T" shape throughout its life. Above, a male ripe peeler. Below, a male hard crab.

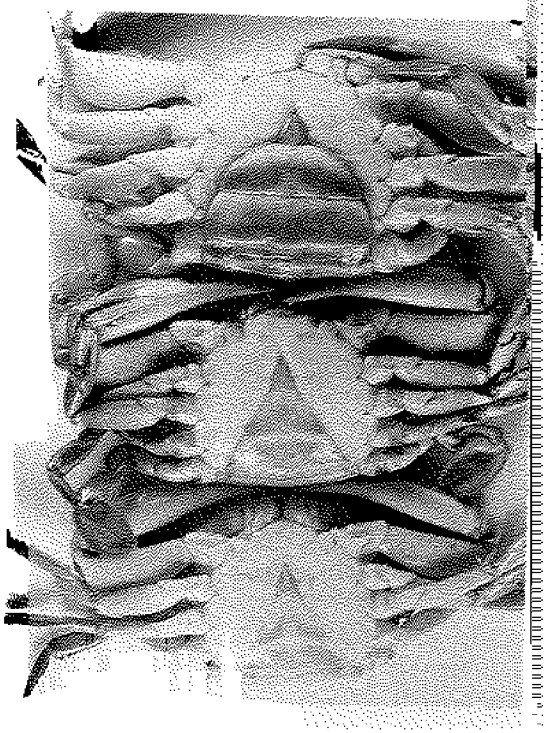


Figure 2
The apron of the immature female blue crab is always triangular. The apron of the mature female changes to a half circle with a point. Top, a mature female hard crab; middle, a female peeler before her last molt; below, an immature female peeler.

Changes in color

If a peeler measures one inch or more, [illegible] from point to point, the following observations can be made:

- The apron of the male and female wi[ll] both have definite changes in color as shedding approaches. [T]he apron of the male will become yellowish. The soft male abdo[men] is much whiter and crabbers often refer to them, even after th[ey] have recently hardened, as "white bellies" (Figure 1).
- As the female nears the molting stag[e], especially within the last 10 days, her apron takes on a pinkish-[pu]rple or deep-blue color. The apron will appear layered with these c[olo]rs and the layers will always be separated with streaks of white. [T]hese colors deepen as molting becomes closer. The female shedd[in]g for the last time has much darker shades of these colors than d[o] immature females that will shed again (Figure 2).

Changes in the paddle fins

The last set of appendages of both males and females are called swimming fins or paddle fins. These paddle fins are almost transparent in certain places. But in peelers, distinct color changes occur along the outer edges of the last two joints of the paddle fin. It takes skill to recognize whether a crab is a white-line peeler, a green peeler, or a hard crab. At all three of these stages, the crab will have a whitish transparency immediately inside of the outer edge of these last two joints on the paddle fins (Figure 3).

Pink-line peelers have the same transparent paddle fins, but the outer edge of the last two joints of these fins is pinkish or a light purple (Figure 4). After handling peelers for a very short time, even the novice can determine if a crab is a pink-line peeler.

In the last three days prior to shedding, the outside edge of the last two joints of the paddle fins of both male and female peelers changes to a deep red or deep purple. The red-line peeler is even easier to recognize than the pink-line because of the distinct, deep-red coloration (see Figure 5).

The term, "rank peeler," is often substituted for pink-line peelers and especially for red-line peelers. Figures 3, 4 and 5 show these color changes in white-line, pink-line and red-line peelers.

The "buster" is the last stage of a crab prior to becoming soft. This stage begins with a very noticeable crack in the base of the top hard shell at the back of the crab between the two paddle fins. Within hours the crab literally busts out of the old shell and becomes soft. While this is happening both the outer hard shell and the inner soft shell are visible. Busters require careful handling, no matter what fishing method you use. We will cover these procedures later.

White-line peelers have a high mortality when shedding; they require extra work of separating and reseparating; and, they may require feeding. Shedders prefer the pink-line peeler and the red-line peeler because mortality is less than that of white-line peelers; there is no handling or separation necessary; and, the economic return is much faster.

Figure 3
The white-line or green peeler and the hard crab all have a light white or transparent line just inside of the outer edge of the last two joints of the paddle fin.

Figure 4
The pink-line peeler shows a pinkish tint just inside the outer edge of the last two joints of the paddle fin.

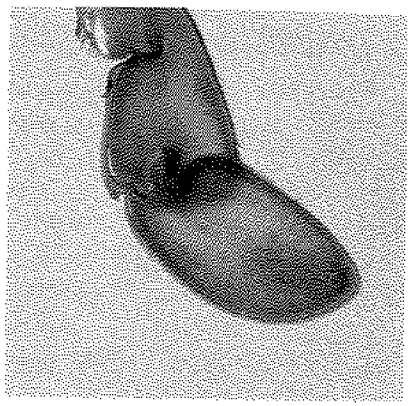
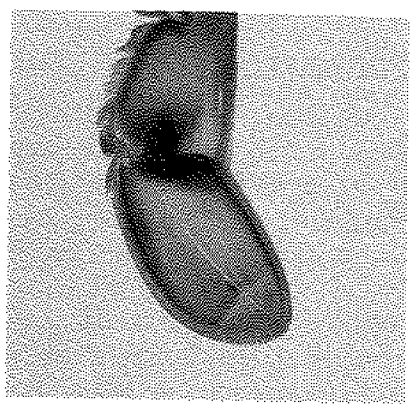


Figure 5
The red-line peeler has a very distinct dark coloration just inside of the last two joints of the paddle fin. The darker this coloration, the closer to shedding.



Potential Soft Crabs

Limb buds

Many times, between molts, both male and female crabs will lose a claw or an appendage and begin to grow new claws and legs. This process results in a "limb bud" developing where a limb is missing. The limb bud is smaller than the normal limb and is soft. When a crab is captured with one or more limb buds, it is a peeler. The degree of development of these soft limb buds determines if the peeler is a white-line, pink-line or red-line. With just a few observations, it becomes easy to determine approximately how long it will take the peeler to shed.

Epimeral line peelers

Because a blue crab grows only when it molts, red-line and some pink-line peelers will often develop enough before shedding to actually crack the outer exoskeleton. This condition is not to be confused with a "buster." A crack, resembling a pencil line or a dark hair, may appear on both sides of the mouth under the eyes. Crabs in this condition are often called "epimeral line peelers." Sometimes a crack will also appear in the first section of the claws on the top outside edge near the body of the crab. When either of these cracks appear on the crab, you have a good peeler.

Squeeze test

A less frequent method of recognizing peelers is the squeeze test. When a crab is in the late pink-line stage or in the red-line stage, the inner soft crab separates from the outer hard exoskeleton under the points just above the three forward pairs of appendages. There is not a visible crack, but squeezing this part of the crab with the thumb and forefinger will cause the shell to give. Only slight pressure is required, and if the shell gives, you know the crab is a ripe peeler. Hard crabs, green and white-line peelers will be very stiff and the squeeze test will not produce this evidence.

Nicking and pinching

If you're just learning to identify peelers, two other methods—"nicking" and "pinching"—are excellent indicators of the stages prior to shedding. Only those just learning to shed crabs should use these techniques because of the risk of damage to the peeler and increased mortality in shedding.

The first of these techniques is "nicking" (Figure 6-A). Only one side of a blue crab's pincers is hinged. The other side is a continuation of the claw and does not open or close. Nicking is the process of cracking the hinged side of either claw. You will be able to see the development of the soft crab inside.

Hard crabs will bleed when nicked. White-line peelers will exhibit jelly-like soft crab development and will also bleed. Pink- and red-line peelers will display a well-developed soft crab underneath when nicked. Sometimes, the hard outer end of the ripe peeler's claw that is nicked will fall off, leaving a totally soft end exposed. Pink- and red-line peelers may also bleed. Crabs will have less difficulty shedding if you break only the point of the claw rather than the joint (Figure 6-B).

The pressure required to nick the claw is a good indication of peeler development. Green and white-line peelers will not nick easily, but pink- and red-line peelers nick very easily. Although many soft crab shedders in North Carolina use nicking, this process has been proven to cause a much higher loss of soft crabs than other methods.

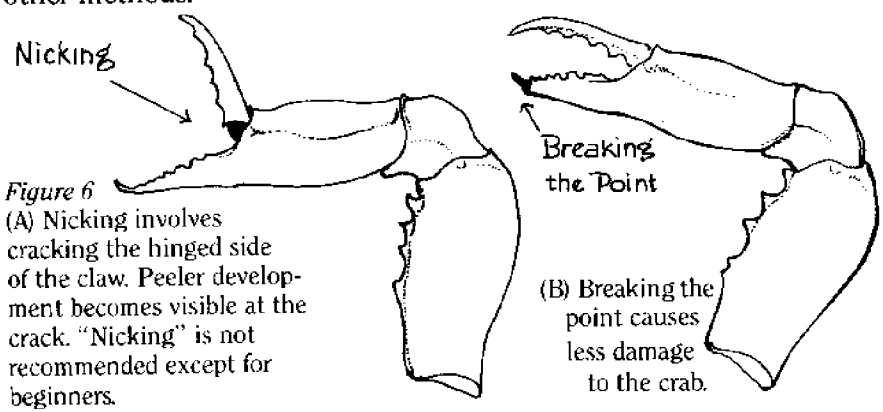


Figure 6
(A) Nicking involves cracking the hinged side of the claw. Peeler development becomes visible at the crack. "Nicking" is not recommended except for beginners.

(B) Breaking the point causes less damage to the crab.

The second method, "pinching," is also recommended only for beginners in the soft crab industry. You can pinch the point of the outermost section of the paddle fin to check the development of the crab inside (Figure 7). The various stages will exhibit the following signs:

- The inside of the fin of a hard crab will break into small sections and appear to float around inside the exoskeleton. You won't see any external bleeding.
- White-line peelers will exhibit jelly-like separation from the outside edge of this paddle fin.
- Pink- and red-line peelers clearly show mature development of the soft crab underneath.
- The inner soft crab fin of rank peelers will bunch up and the outer edge will become more transparent.

Even though peelers can easily be identified in this manner, pinching often causes this fin to hang when the crab tries to shed. This results in many peelers dying when they attempt to shed.

Because of the many other signs available to identify peelers, you should discontinue "nicking" and "pinching" as soon as possible. As you handle peelers, you'll become more adept at recognizing the other signs.

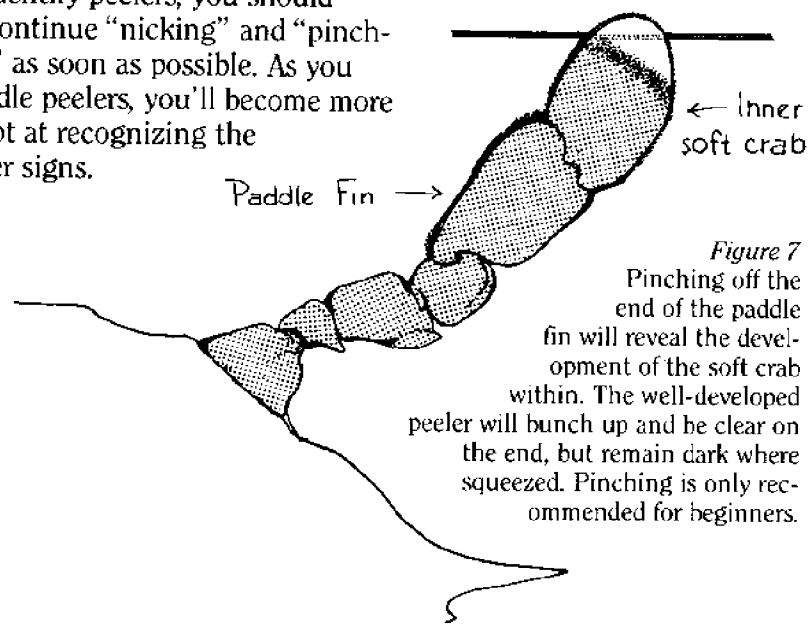


Figure 7
Pinching off the end of the paddle fin will reveal the development of the soft crab within. The well-developed peeler will bunch up and be clear on the end, but remain dark where squeezed. Pinching is only recommended for beginners.

Changes in behavior of the crab

The normal hard crab, the green peeler and the white-line peeler are very active. They are aggressive, with claws poised for protection. On the other hand, rank peelers are in a weakened condition. They do not move around much and their claws are tucked in close to their bodies. If held in an open hand, many rank peelers make no effort to bite or escape. Again, experience is the best teacher of this behavioral sign. Be careful, however. Some rank peelers may pinch.

The following crabs are not peelers:

1) Mature female crabs with the dark half-circle apron with or without eggs. They probably will not shed again.
2) Crabs with barnacles or greenish growth on the back of their shells will probably never shed again.
3) Very large males, called jimmy crabs, that have a lot of yellowish or brownish coloration on their abdomens may be fully mature and not shed again or at best are usually a long way from shedding.
4) Male crabs that have a very white abdomen have usually just completed the shedding process and may take 25 to 50 days before shedding again.
5) Paper-shells, crabs that have just molted and are almost hard again, are also 25 to 50 days from shedding again.
6) Male or jimmy crabs captured as doubles are not peelers.

high rate of successful shedding relative to peelers caught with other gear.

Disadvantages: To be successful, this method requires working all night. Strength and endurance are required to shove a skiff or wade the shoreline six to eight hours a night. Catches are thought to be reduced when the moon is bright. And finally, if it is windy or the water is stirred up, it is difficult to see the crabs.

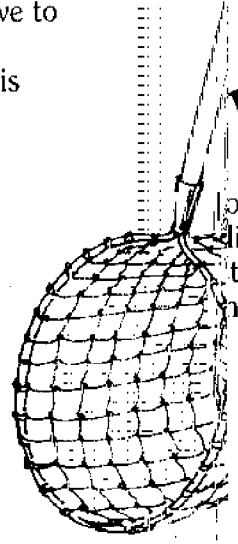


Figure 8
Dip Net

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In North Carolina, crabbers use six major techniques premolting (peelers) and molting (soft) crabs. North Caro crabbers are also testing some techniques used in other s will attempt to explain all of these harvesting methods a the advantages and disadvantages of each.

The dip net The oldest device used to harvest crabs is the dip net (Figure 8). This method is most successful at night. Crabbers use a gas lantern or electric underwater light and pull a miniature, homemade, flat-bottom boat behind them if they are wading. Shoving a skiff allows harvesting in areas where other forms of gear will not work because of shallow water. Wading will allow you to harvest crabs even in shallower waters.

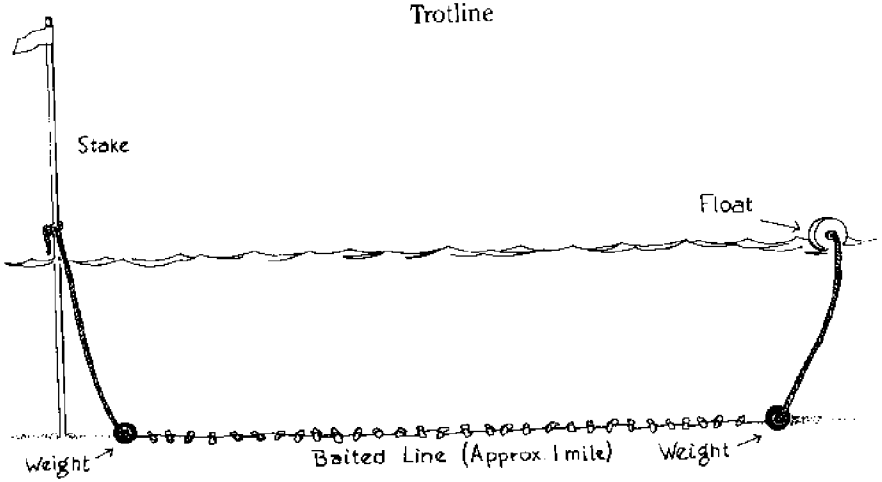
Advantages: Dip netting of crabs seems to produce the best results on new moons and on dark nights. And, dip-netting produces more nice-looking soft crabs than any harvesting method used today. It requires the least investment in gear and netted peelers have a

The trotline A trotline (Figure 9), is a long, baited line set out in open waters. The line, sometimes a mile long, has baits about one yard apart, weights at each end, and is usually tied to a pound net stake on one end with a cork or buoy on the other end.

Each day the stake is struck, the line is tied up to the stake and the weight and baited line are uncoiled from a storage barrel in a straight line as the boat moves forward. When the end of this baited line is reached, it has a weight that is dropped overboard with extra line and a floating marker. The weights keep the line on the bottom and the marker helps the fisherman recover a line in case it breaks from the stake.

Once the line is set, the boat returns to the stake slowly in order to allow time for crabs on the bottom to begin feeding. When the boat reaches the stake, the line is lifted and placed on a runner or a patent dipper. The crabs cling to the bait and are then dipped with a dip net, usually with wire webbing to reduce tangling of the crabs, or they fall into the net of the patent dipper as the boat moves slowly down the line. This process is repeated for the fishing day.

Figure 9
Trotline



The stake and baited line are taken up at the end of each day, stored in brine, and reset again in the same fashion the following working day. Some crabbers replace missing baits each day; others will rebait the entire line once a week.

Advantages: Many white-line peelers may be caught with a trotline, because white-lines are still feeding. The use of a trotline is a good source of peelers as a by-product of the hard crab fishery.

Disadvantages: The fishing of a trotline produces more hard crabs than peelers or soft crabs. Soft crabs, pink-line and red-line peelers are caught only when they are doubled with the male, or "jimmy," and the jimmy is feeding. Peelers and soft crabs are not feeding at this time. Rank peelers are only caught as doubles by this method, and there seem to be times during the season when doubles are scarce. If a patent dipper is used, the peelers are dragged through the water until the end of the line is reached. The weight of other crabs may damage them resulting in high mortality as the peelers shed. The identifying and separation of peelers from hard crabs is much harder if a patent dipper is used, because of the large number of hard crabs. The white-line peelers captured do not produce good shedding results.

The crab pot or crab trap The greatest catch of hard crabs and peelers in our state is from the baited crab pot (Figure 10).

Advantages: Crab pots have the advantage of capturing hard crabs, white-line, pink-line and red-line peelers, busters and soft crabs. They may be fished in two feet of water or in deep water. They are easy to set, move and take up.

Disadvantages: Crab pots cost more for an equivalent catch than do dip nets and trotlines. They must be purchased, baited and maintained, and probably will last only one full season. Peelers in pots are often damaged and hard crabs often eat busters and soft crabs. White-line peelers feeding in pots have very low shedding rates. And, crab pots catch more hard crabs than peelers, making peeler identification and separation very time-consuming. For this reason, many crabbers lose potential income by not taking time to cull out the peelers.

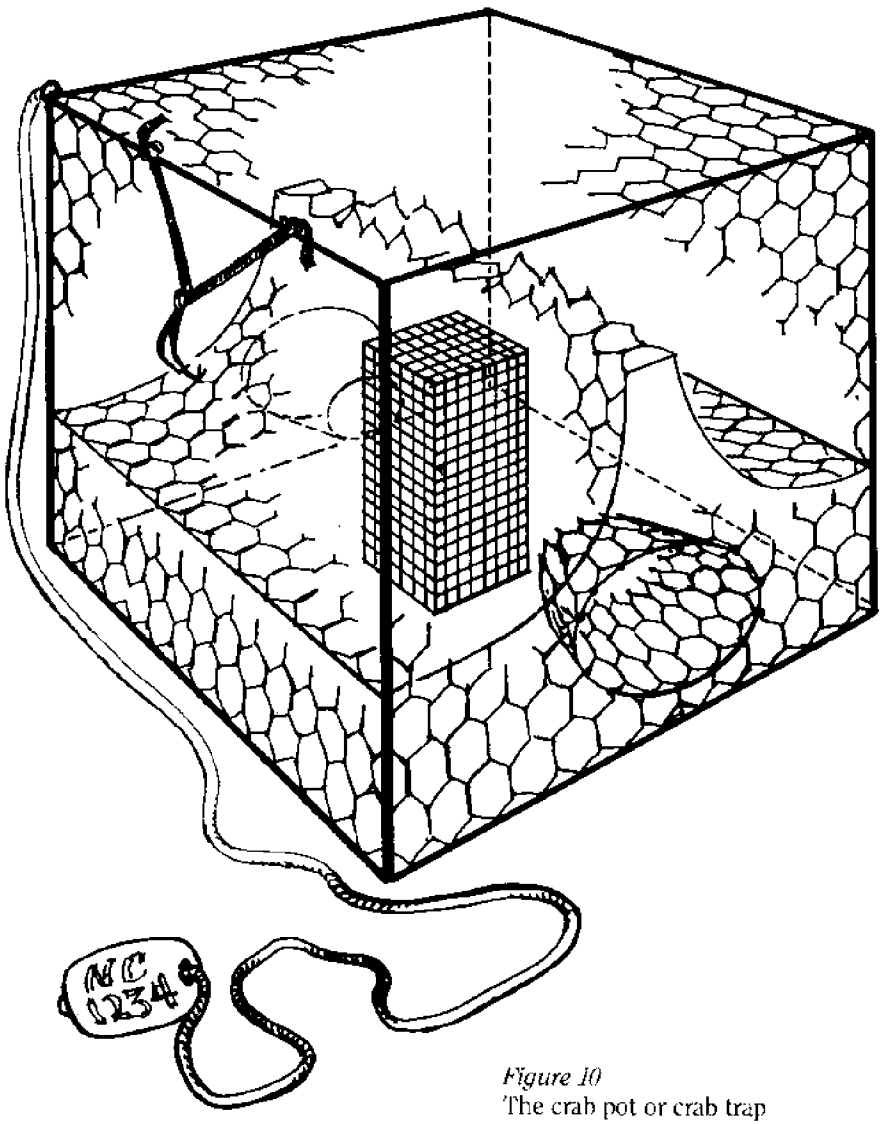


Figure 10
The crab pot or crab trap

Harvesting Methods

Crab trawl In North Carolina, the crab trawl (Figure 11) is [illegible] many areas, but there are restrictions on mesh size, net [illegible]wing seasons and towing areas.

The [illegible] legal [illegible]b trawl has a cone-like net, a weighted bottom line, size[illegible]h on the top line, a tickler chain, otter boards or doors to [illegible] A cr[illegible]he net, and tow lines that allow a boat to pull this float[illegible]ration along the bottom to harvest crabs. The forward spread[illegible] of the boat forces the doors to open and spread the net. confi[illegible]abs, peelers, soft crabs, fish and numerous other things are [illegible] from the bottom as the net is towed.

Harv[illegible] trawls, peeler trawls (trawls with smaller mesh) and shrimp scrape[illegible]ll harvest in the same manner and all three types of trawls C[illegible]duce white-, pink-, and red-line peelers, busters and soft trawls[illegible]fter the trawl is towed for about an hour, the net is hauled will [illegible]to the boat either manually or mechanically. The catch is crabs[illegible]d into a cull box by releasing a line tied at the back end of back[illegible](tail bag).

d[illegible]*ntages:* The trawl nets may be towed in many areas, other the ne[illegible]ble seafoods are captured at the same time, and when [illegible]rations of crabs and peelers are found, they can be marke[illegible]ed quickly.

Disadvantages: Tows must be shortened to prevent damage to peelers and destruction of soft crabs by water pressure and by bulk weight of hard crabs, and the rest of the catch. Separation of peelers from the rest of the catch is time-consuming. Many peelers that survive the culling often die before the shedding cycle is complete. Peeler mortality is higher with the crab trawls than with any other harvesting gear.

Peeler pots Special peeler pots follow the design of a regular crab pot. The wire used to construct peeler pots is usually one-inch mesh instead of the one- and one-half inch mesh wire used in crab pots. This smaller mesh provides catches of smaller peelers that may escape from crab pots. Also, most peeler pots do not have bait wells as do the crab pots. Finally, because peeler pots are often baited with a live adult male crab (jimmy), some pot makers have designed a special compartment for the male that the females cannot get into. The use of jimmies as bait attracts mature females ready to mate and many believe if the jimmy is not allowed to double up with a female crab, more females will enter into the peeler pot.

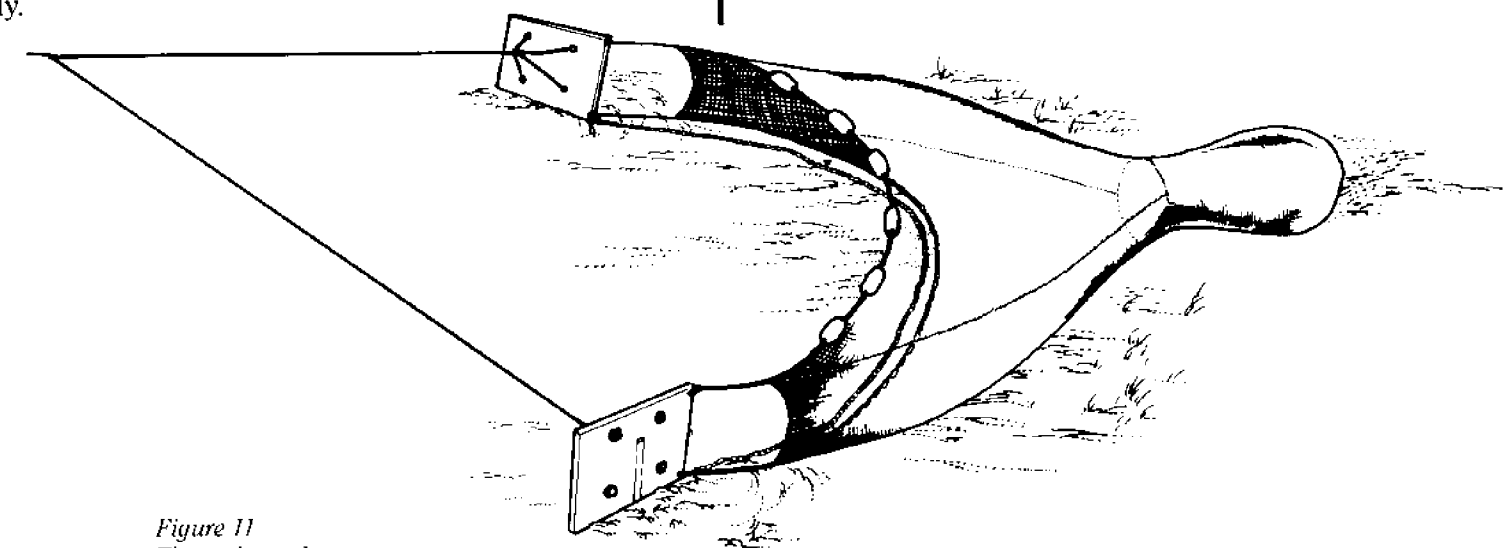


Figure 11
The crab trawl

Advantages: Results from peeler pots have been excellent. White-line, pink-line, and red-line peelers, busters and soft crabs are captured. The condition of these crabs is excellent and shed rates are good. Even the separation of peelers from hard crabs is relatively easy because only a few hard crabs will enter into an unbaited peeler pot. Most of the crabs in peeler pots will be good peelers.

Disadvantages: Most peeler pots are constructed with thinner wire than that used in building crab pots. This reduces the life of the peeler pot and requires more careful fishing so as not to destroy or disfigure the pot. Custom compartments for jimmies may cost more than regular peeler pots and catching adult males and baiting pots with them requires extra work. Finally, the number of peeler crabs caught using these special peeler pots seems to drop drastically in late June. Many crabbers say that these pots are only good for a few weeks.

The habitat pot A habitat pot is a form of the peeler pot with the four sides and top covered with woven tape to provide darkness inside the trap (Figure 12). Because crabs are vulnerable when they shed, they seek protection from predators and the elements. The darkness of the habitat pot seems to provide peelers with this security.

Although only a few of these traps have been set in North Carolina, tests in South Carolina have shown good catches of rank peelers and large catches of male peelers. We have insufficient data to discuss advantages and disadvantages of these special peeler traps at this time.

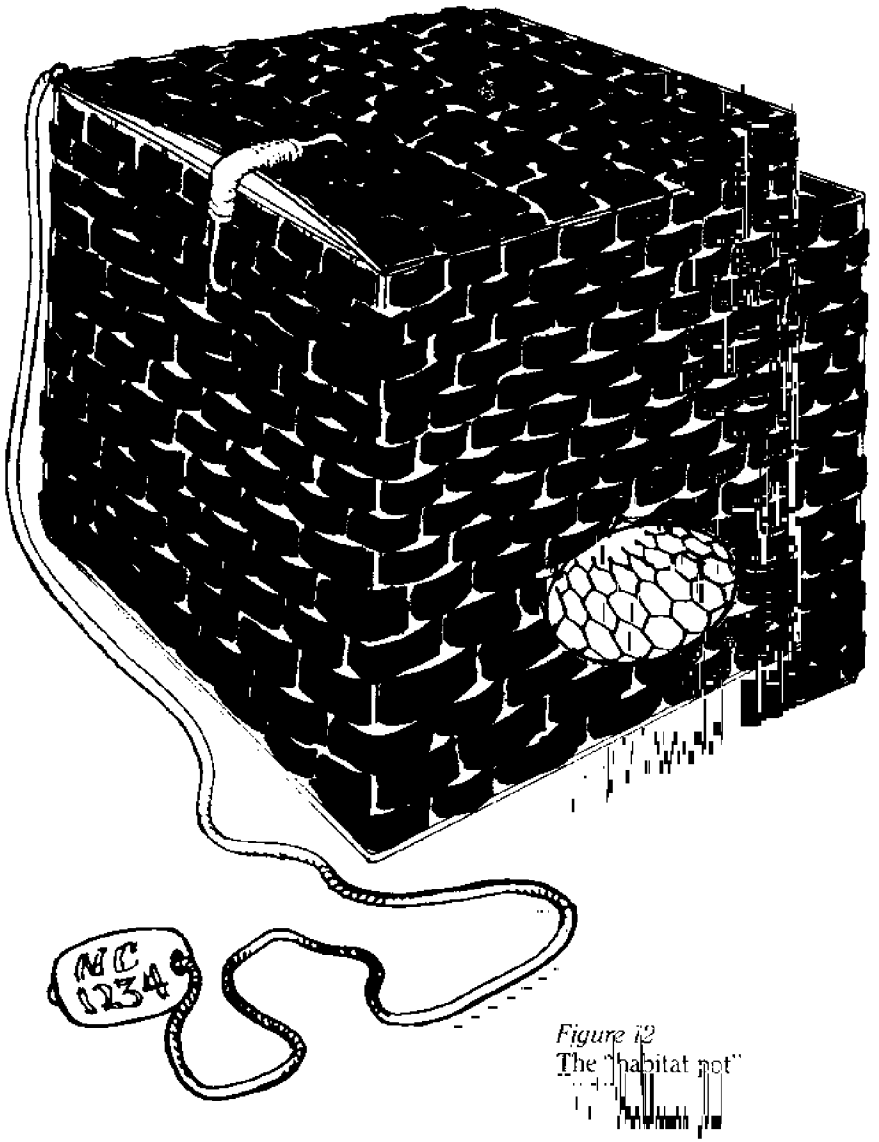


Figure 12
The "habitat pot"

The peeler pound or crab fyke Virginia crabbers have been very successful in harvesting peelers with the peeler pound or crab fyke (Figure 13). These pounds are usually set in shallow water and extend from the shore a hundred to several hundred feet to a trap at the end. Some deep-water peeler pounds are also used. They may or may not be baited.

Both shallow- and deep-water peeler pounds have three main parts—the lead, the heart and the trap. Leads are usually constructed of crab pot wire strung along the bottom, but some are made from net webbing. The webbing seems to follow contours of the bottom better, reducing the number of escape holes. Hearts are generally constructed with wire and may or may not have tops and bottoms. The heart herds the crabs to the trap, which is also constructed of wire and attached to framing made of treated wood or iron. The trap framing is designed in such a way as to fit snugly against the heart and allow crabs entry into the trap through a single tunnel.

Advantages: The peeler pound is an excellent source of large numbers of hard crabs, peelers, and soft crabs in calm waters where there is movement of crabs on the bottom. In addition to the hard work of staking out leads, hearts and traps, pounds—especially deep-water pounds—may require extra mechanical gear in order to lift and fish the traps. Because fish, hard crabs, oysters and soft crabs animals enter the peeler pound, the peelers, b may be damaged or eaten.

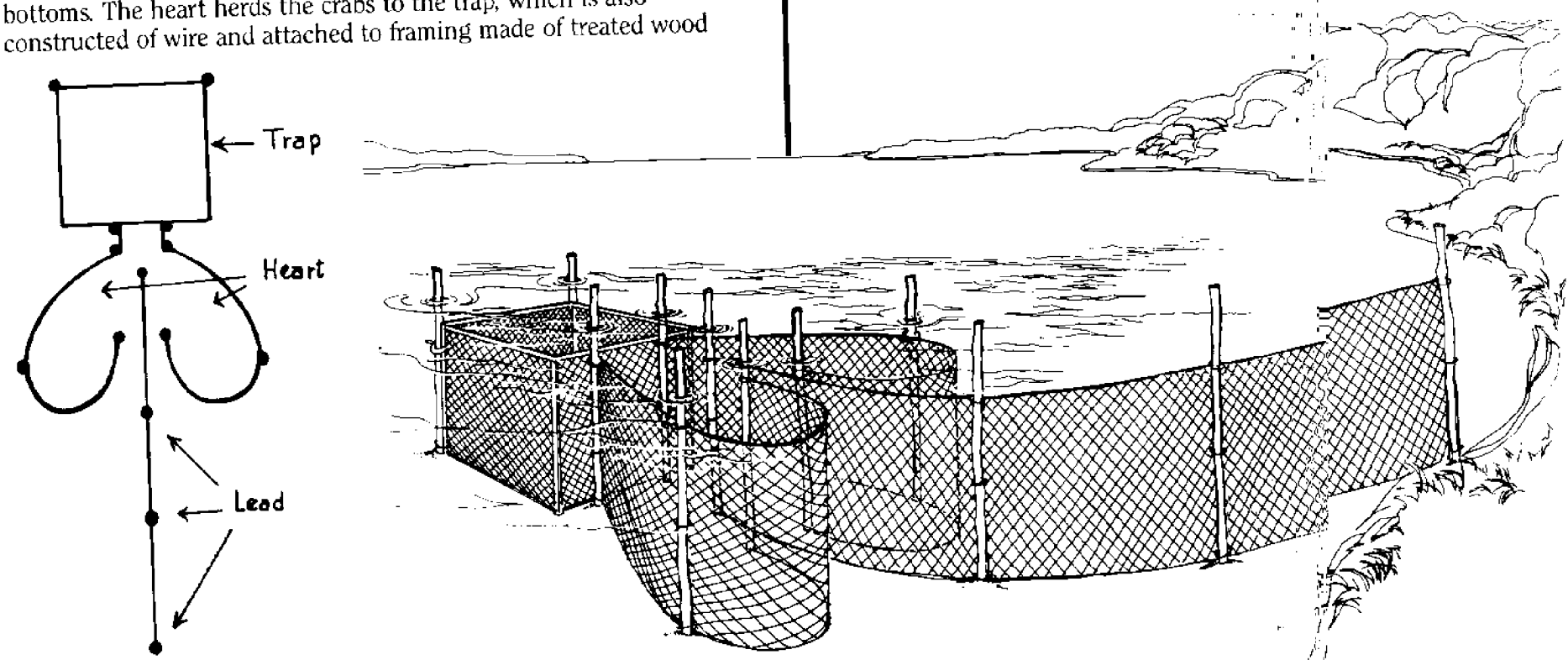


Figure 13
The peeler pound

The crab scrape - Since crab trawls are illegal in Virginia, crab scrapes have been used for some time to drag the bottom of Virginia waters. The scrape is much like the North Carolina oyster dredge, but it has a longer bag and there are no teeth on the bottom bar (see Figure 14). Scrapes are towed by powered boats over grassy bottoms where peelers often seek protection to shed.

Advantages: Scrapes have proven to be a successful harvesting tool for busters, soft crabs and peelers.

Disadvantages: The crab scrape covers only small areas of the bottom and, unless crab populations are heavy, catches may be small. As of January 1, 1983, new regulations severely restricted crab catches with oyster dredges and until the differences between dredges and scrapes are clearly defined, scrapes are presently considered dredges. Therefore, scrapes may or may not be illegal for crabbing in North Carolina at this time.

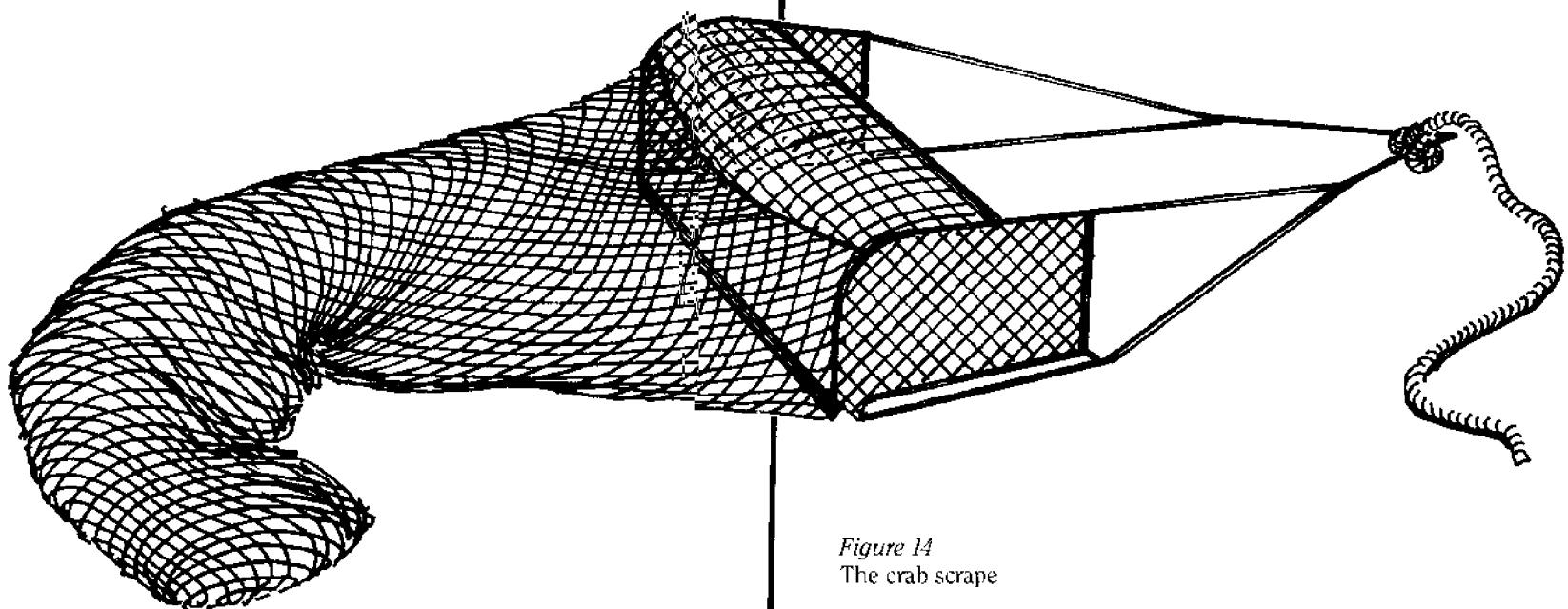


Figure 14
The crab scrape

Harvesting Methods

The bush line In Louisiana, bush lines have been used with some success to capture peelers. A bush line consists of a series of wax myrtle branches tied to a floated line at intervals of 10 to 20 feet (Figure 15). Areas having little change in tide seem to work best. Bush lines are tied to a stake at one end and either anchored or tied to a stake at the other end. By moving slowly down the bush line in a skiff, the bushes are carefully lifted out of the water and shaken over a large dip net.

Advantages: Ripe peelers are captured and these peelers have an excellent shedding rate because of this gentle capture method.

Disadvantages: Bush lines provide problems when windy conditions and rough water occur. The leaves or bushes are destroyed by wave action and become unproductive. In addition, these bushes must be replaced often throughout the season.

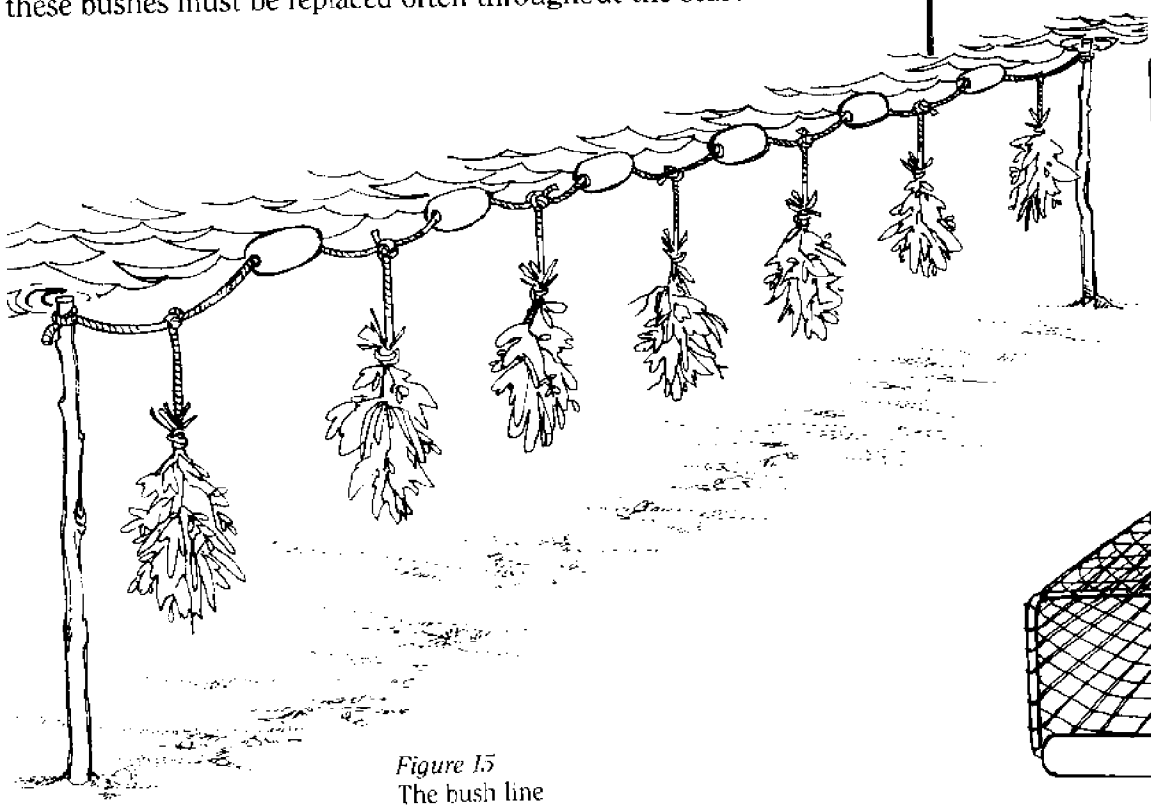


Figure 15
The bush line

The roller dip net The modified roller dip net is used in several other states. There are several variations of this hand-operated net (Figure 16). Most designs have a metal frame with net webbing or wire mesh, a roller or bar on the bottom of the frame, and a handle to push the nets through the grass.

Advantages: Push nets are excellent for catching peelers hidden in the grass because, as they roll over the grassy bottom, frightened peelers are trapped in the net. Most of these peelers are ripe and have a very good shedding rate.

Disadvantages: Because push nets are larger and heavier than regular dip nets, it takes considerable work to push them through the grassy bottom. Push nets are limited to shallow water and it is difficult to cover large areas with this relatively small net.

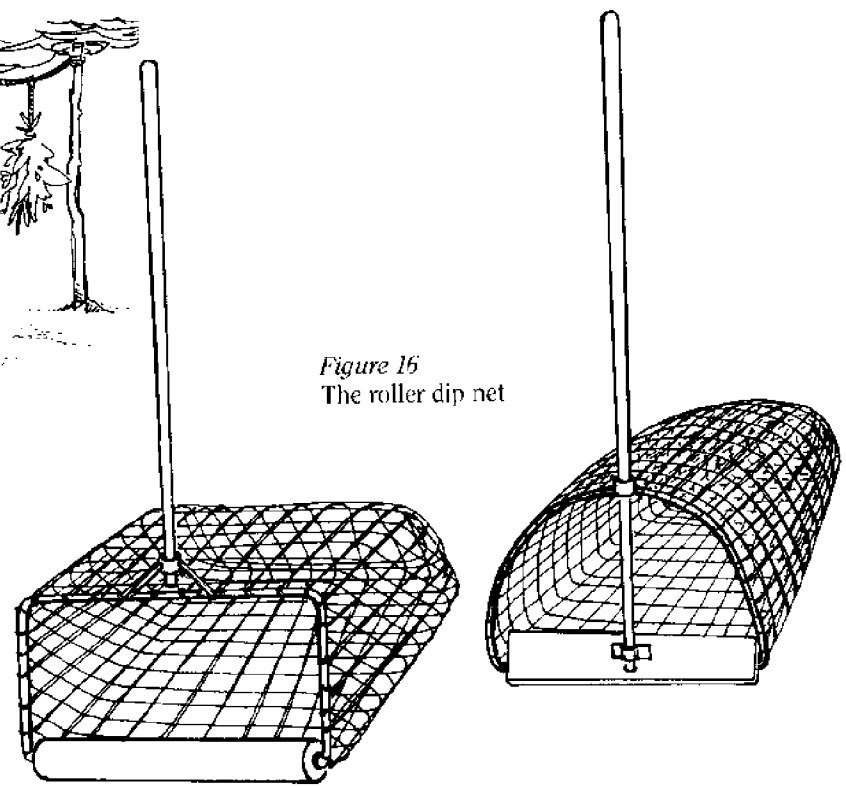


Figure 16
The roller dip net

Handling Peelers

Peelers should be separated in the field. If possible, separate pink- and red-line peelers from green and white-line peelers. Soft crabs must also be placed in separate containers or they will be mangled or killed. A container with sea water provides a much-needed life-support system for busters.

Place wet burlap bags in the bottom of shallow containers, usually baskets, and carefully lay peelers on top. Or, use moist eel grass or seaweed instead of burlap bags. Place these shallow containers or baskets out of the sun. If large numbers of peelers are caught, use several baskets rather than filling baskets to the top. Topping off a basket with peelers puts unneeded pressure on the peelers on the bottom and may kill them. Placing this wet burlap bag on top of the basket, instead of laying it on top of the peelers provides a cool air pocket and increases the shedding success rate.

When you transfer your peelers to the shedders, handle them carefully. Busters require more care and consideration than peelers or soft crabs. Carefully place busters in a bucket of water or a minnow well and allow them to continue molting. Introduce air into the water or change the water every hour to prevent suffocation of the crabs. If you're catching large quantities of busters, a special container with aerated water for the busters is worth the time and investment. Depending on the degree of "bust," many will shed before the day's fishing is over.

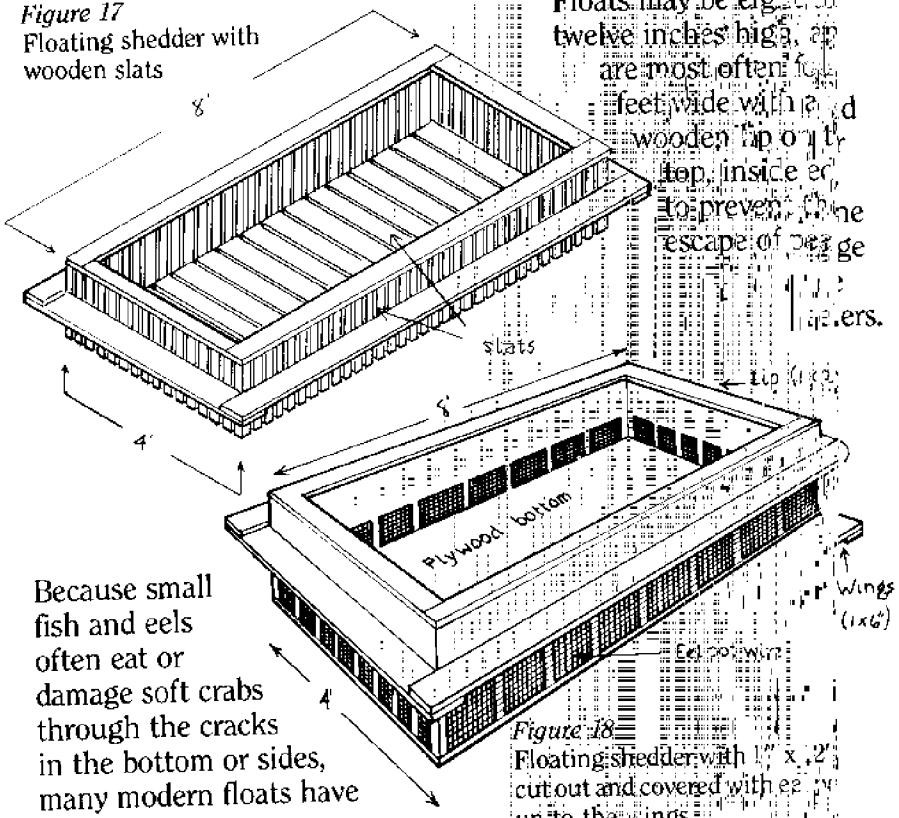
Remember that exhaust fumes, gasoline and oil will kill crabs. Containers and coverings should be stored away from any of these compounds.

Methods of Shedding Blue Crabs

In North Carolina, there are three basic shedder designs in use with many variations in the construction of each.

Floating Shedders The oldest method of shedding soft crabs is the float or floating shedder (Figure 17). A float is a special wood box filled with peelers. It allows natural water to flow in and out through its sides or bottom as it floats in the water. The bottom may be of closely fitted boards or marine plywood and the sides usually have half-inch cracks between each board or slat. Most of the side boards, a wooden wing is placed on the outside to provide buoyancy and to control the water level inside.

Figure 17
Floating shedder with wooden slats



Floats may be eight to twelve inches high, and are most often four feet wide with wooden tops, inside edges to prevent the escape of peelers.

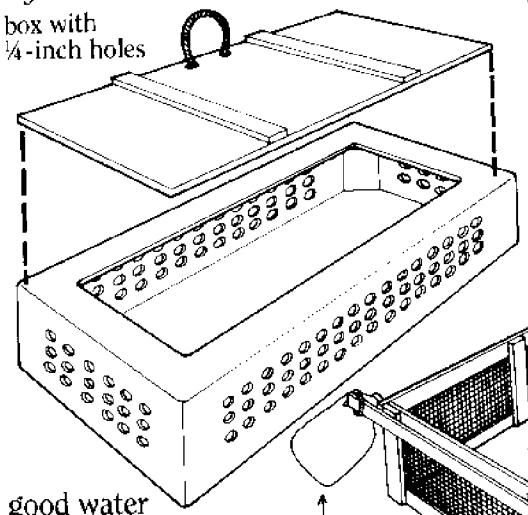
Because small fish and eels often eat or damage soft crabs through the cracks in the bottom or sides, many modern floats have eel pot wire around the submerged portion of the float. The wire permits water to flow through while prohibiting marine predators.

Figure 18
Floating shedder with 1" x 2" cut out and covered with eel pot wire up to the wings.

Some floats are constructed with one-by-twelve-inch lumber for the sides, with sections cut out and covered with eel pot wire to allow water to flow in and out (Figure 18). Others are wooden or fiberglass boxes that have tiny holes drilled in them to allow water to flow in and out and tops to keep birds and animals out. Smaller floats may have wooden bottoms with fine wire mesh sides that are floated with oil drums, milk jugs or styrofoam (Figures 19 and 20).

All of these floats work, but most commercial shedding operations using floats in North Carolina select the designs shown in Figures 17 and 18. Our discussion about floats will center on these two.

Figure 19 An exaggerated fiberglass or wood box with ¼-inch holes



Advantages: Floating shedders are the most economical method of producing soft crabs. In addition, there are many waterfront areas that do not have electricity, but have good water conditions for shedding crabs. In these areas, floats are the ideal solution for soft crab production.

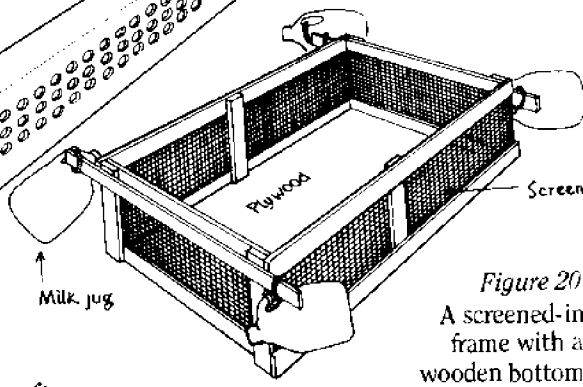


Figure 20
A screened-in frame with a wooden bottom floated with milk jugs

In the early part of the shedding season when water temperatures are cool, floats may provide better results than other systems. Crabs shed best in water that is 68 to 72 degrees Fahrenheit and surface waters reach these temperatures long before deeper waters.

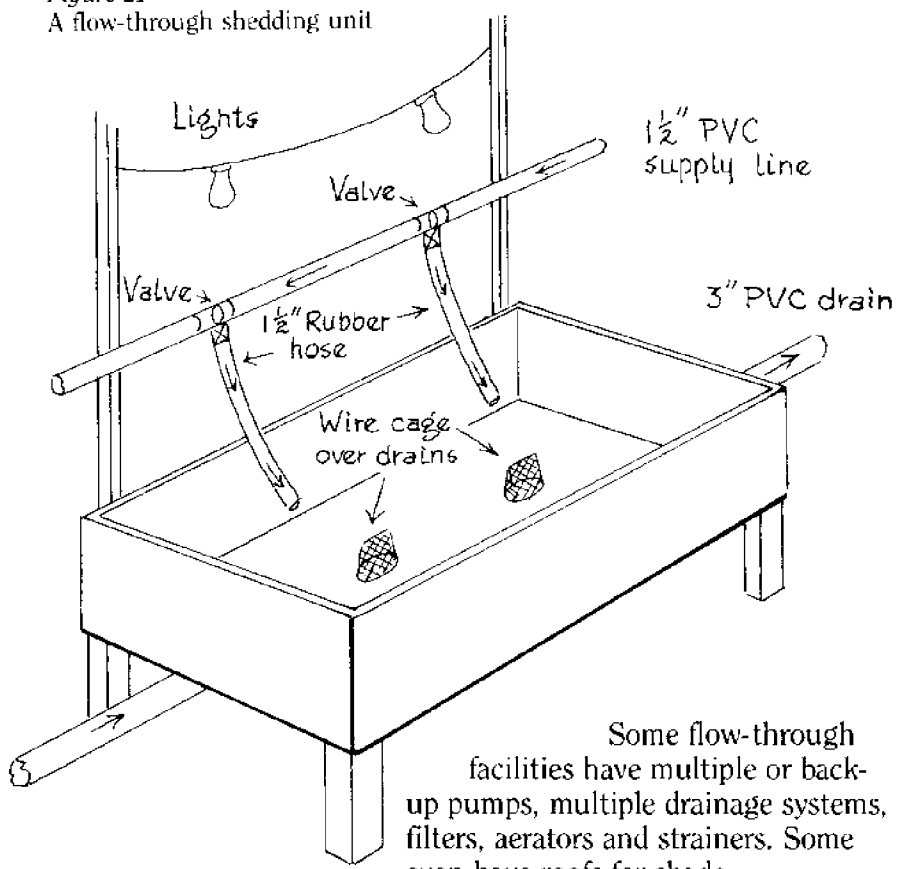
Disadvantages: It is difficult to place peelers in the shedders, to cull the peelers and to remove the soft crabs. Multiple-float operations may require a boat to move from one shedder to another and there is usually no lighting for night work. Floats must be placed in good-quality water with sufficient wave or tidal action; but, areas subjected to rough wave action from wind or wakes from boat traffic have a high peeler and soft crab mortality rate. Even with flotation stabilizers, rough wave action often tears the shells from busters and results in the death of the crab. Because surface water has more extreme fluctuations in temperatures, crabs may be hindered or even die from excessive heat and/or cold.

Onshore flow-through shedders Most of the onshore facilities are built on dry land with legs or supports to provide an easy and comfortable height for access to the crabs (Figure 21). The onshore shedders in North Carolina usually measure four-by-eight feet and are constructed of wood, fiberglass or concrete.

Since production results are the same, the largest factor affecting the type of construction is the cost of materials. As a rule, the shedders have one-half- to three-fourth-inch marine plywood bottoms with one-by-twelve-inch pine shelving board for the sides. Seams in the bottom and corners of the wood shedders are sealed with some type of waterproof putty or caulking. The concrete and fiberglass shedders are molded without seams. They require no caulking. Regardless of which materials are used, the system design is basically the same.

All flow-through shedders are near natural bodies of water. They have electric pumps plumbed from the water supply to the shedders and usually have a master water valve with one or more smaller valves per individual shedder. Each unit will have one or more drains in the bottom and the drains are plumbed to return the water to its natural source. Water drawn by the electric pump to the shedders flows through the shedders, out the drains, and returns to its original source by gravity flow.

Figure 21
A flow-through shedding unit



Some flow-through facilities have multiple or back-up pumps, multiple drainage systems, filters, aerators and strainers. Some even have roofs for shade.

The following system design may prevent many inherent problems and produce the best shedding results in areas with a good, clean water supply. First, wooden shedders with three-fourth-inch marine plywood bottoms and one-by-twelve-inch pine shelving board sides are mounted on top of two-by-four-inch treated pine frames, 36 to 48 inches high for easy access. The shedders are usually arranged in rows of six to ten units because of pump capacities. The units also are built near the water supply to maximize the output of the pump and to make plumbing simpler. The table below indicates the maximum number of shedders different pump motors can adequately supply.

Table 2

Electric pump horsepower required to maintain four inches of water and recirculate 80 gallons every 15 to 20 minutes.

Pump Size	Units Supplied (4' x 8')
½ horsepower	4 to 6
¾ horsepower	6 to 8
1 horsepower	8 to 10
2 horsepower	10 to 12

Source: Murray Bridges, commercial shedder

To protect the pump, a standard housing should be built between the shedders and the water supply. The pump is mounted inside the stand and a one-and-one-half-inch rubber hose is clamped to the intake of the pump and extended six to eight feet beyond the water supply. The extra length and flexible hose permits the raising of the intake hose to the top of the water supply with floats or corks when the water is cool and the lowering of the intake hose when the water warms up. This can make a big difference in production throughout the shedding season. Conversely, the use of stiff PVC plumbing to the water supply eliminates this flexibility and is not as good.

The electric pump should be wired with its own separate supply line to reduce the likelihood of power failures. A check valve should be placed in the supply line to prevent the pump from losing its prime, if a power failure should occur. One-fourth-inch garment cloth (eel pot wire) clamped to the end of the intake hose will prevent large pieces of trash from damaging the pump. Fine wire or screen is not recommended because it clogs easily and the water supply will be cut off. The use of one-and-one-half-inch PVC plumbing pipe from the pump to the shedders has proven most satisfactory.

Assuming a shedding facility with at least eight shedders, the system described below is recommended for use with a one-horsepower pump. Smaller operations should have the same basic design, with smaller electric pumps. Larger systems should have multiples of the following design—that is, a separate pump and system for up to 12 shedders per each two-horsepower pump.

Typical Shedding System

The shedding units are placed in two rows with room to walk between them. The plumbing from the pump should proceed to the center of the two rows of four shedders and join a tee so that a supply line can be provided about 12 inches above each row.

A control valve should be placed in line at the beginning of each row of shedders to permit the closing of each group of shedders for maintenance and to shut down a row of shedders when not in use. An elbow is used to turn the supply line down each row of shedders, and the line is extended six inches beyond the end of each row. Although one control valve per shedder will supply sufficient water, two are recommended to provide better water circulation. A control valve at the end of each line, plumbed directly into the drain, allows excess water to flow back to the water source and prevents excessive back pressure if some of the shedders are not in service or if the pump being used has more capacity than the system requires.

The PVC water supply line and valves are mounted with clamps to braces nailed to the sides of the shedders. Four braces, 36 inches above the top of the shedders, will support the weight of the pipe and a lighting system. At each control valve feeding the individual shedders, not the mains or overflows, an aerator (a device that screws to the control valve and adds oxygen to the water as it flows through) is attached. These plastic aerators are inexpensive and may be purchased at a hardware store or a farmers' exchange. A rubber hose is clamped to each aerator and extends to within a few inches of the drain holes.

Two drain holes, centered two feet from each end of each shedder, provide better circulation and a more rapid exchange of

water than one drain hole. A six-inch circle of crab-pot wire or eel-pot wire around each drain hole prevents damage to soft crabs and keeps crabs from clogging lines. When water temperatures exceed 75 degrees, oxygen content is reduced and the increased water exchange from two drains provides a higher shedding rate.

After drilling two drain holes per shedder, a one-and-one-half-inch PVC pipe is mounted three to four inches above the bottom of the shedder. This pipe is sealed and plumbed to a gravity-fed, three-inch PVC return line. Many shedders place a larger PVC pipe, notched on the bottom, over the drain to force drainage of water from the bottom of the table. The one-and-one-half-inch PVC drain pipe inside the shedders controls the water level. A hole should be drilled in these pipes one inch from the bottom of the tank. This hole will drain off most of the water if the power goes off, and the peelers will survive longer if they can mix water and air to breathe. If the drain hole is absent, the crabs will soon consume all of the oxygen in the water and die.

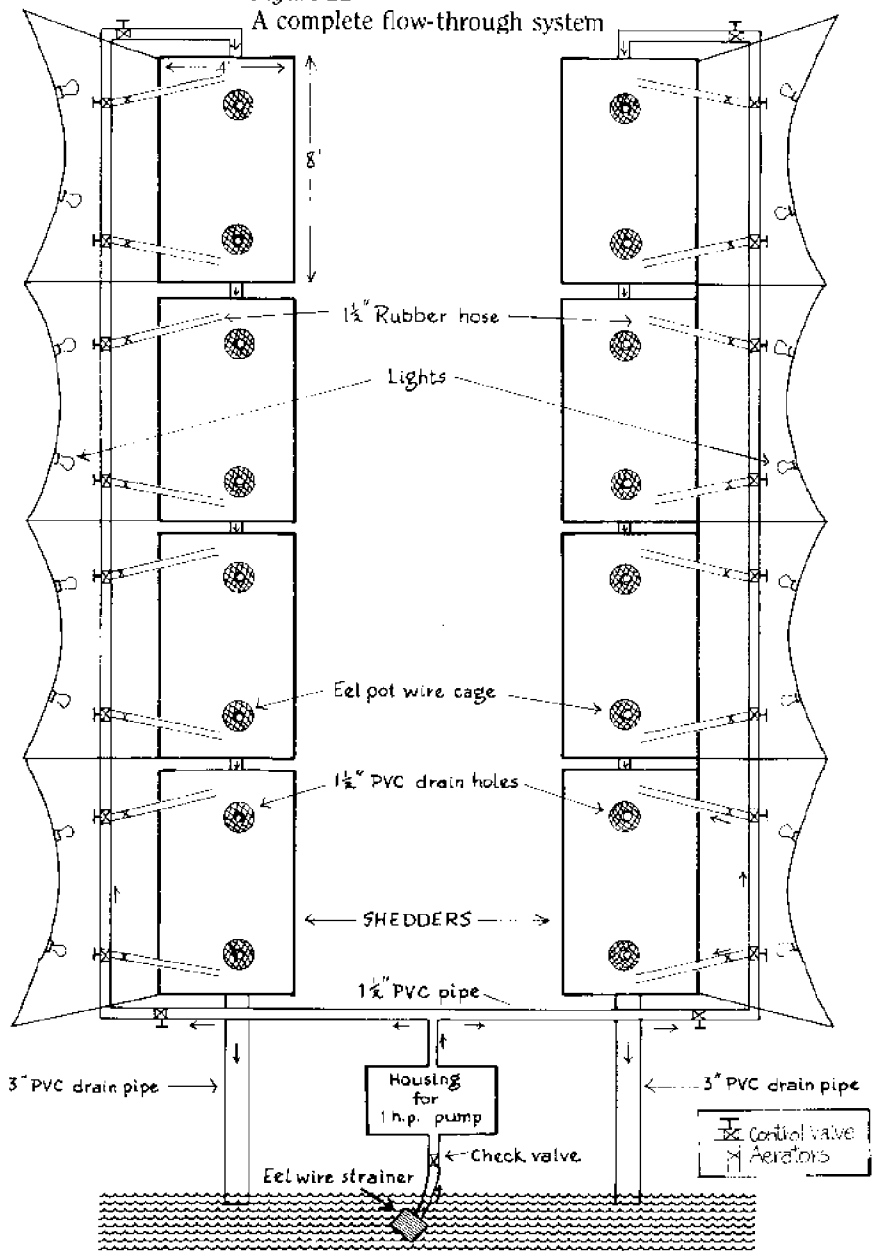
The three-inch return line must have a slight incline in order to return water flowing through the system back to its source. It is important that the water be returned some distance from the intake line to ensure cleaner water in the system.

Finally, because blue crabs shed 24 hours a day, a separate electrical line should be installed with adequate lighting to fish the shedders at night. Some operations have wired their lighting to the same line as the pump and found that a short in a light could shut down their entire system. A separate electrical line for lighting is less expensive than losing eight shedders full of peelers.

The best commercial operations usually have standby gasoline-powered pumps or generators to provide water and electricity because many coastal areas will have several power failures during the shedding season.

The flow-through system just described, and illustrated in Figure 22, is the ideal onshore shedding facility. Cost may necessitate some reductions in valves, aerators, plumbing and the type of supply and drain pipe used in a flow-through system. However, any such reductions may result in the loss of peelers and soft crabs.

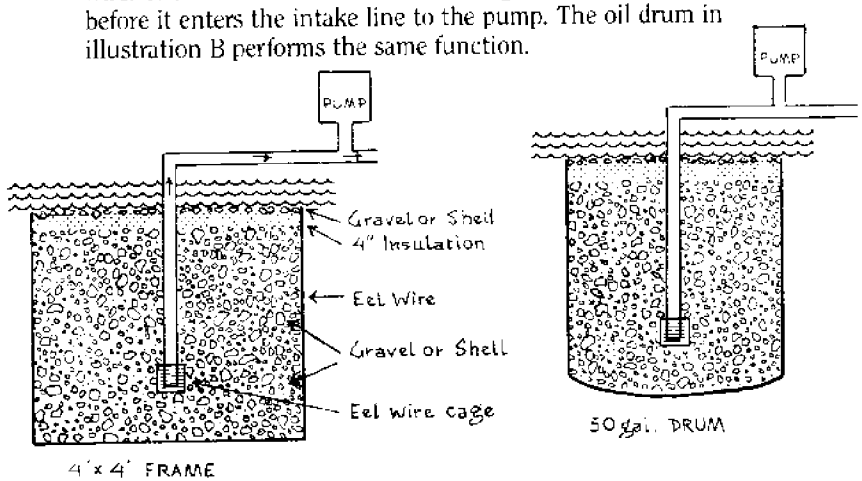
Figure 22
A complete flow-through system



Methods of Shedding Blue Crabs

The flow-through system just described is most applicable when the water supply is relatively clean. In some of our coastal areas, the source of natural water may contain algae, grass, rainwater run-off or silt and mud stirred up by current or wave action. Shedding systems may still be successful with the addition of filtration to the intake line, even when these adverse conditions exist. There are a number of manufactured filters, but the following two types of inexpensive homemade filters work very well (Figure 23).

Figure 23
A: A four-by-four foot frame covered with one-quarter-inch eel pot wire. The four-inch insulation and the gravel or shell clean the water before it enters the intake line to the pump. The oil drum in illustration B performs the same function.



Filter A consists of a four-by-four foot frame covered with heavy-guage wire and immersed at the water source. The water intake line to the pump is placed with its opening near the bottom of the box. The intake line will be stationary and can be either one-and-one-quarter-inch PVC pipe or rubber hose. Cover the end of the intake line with a cage of eel-pot wire and fill the wire box with oyster shells or coarse gravel to within six inches of the top. Place four-inch, fiberglass wall insulation, with the paper removed, on top of the gravel or shell and add just enough additional gravel or shell to weight the insulation in place. Every couple of weeks, the insulation will need replacing.

Filter B is basically the same as Filter A, except it uses a 50-gallon drum with the top removed instead of a four-by-four box. The intake line is inserted near the bottom of the barrel and covered with shell or gravel to within six inches of the top.

Insulation and more shell or gravel are inserted as with the four-by-four box. The fiberglass insulation in this filter also needs to be replaced every couple of weeks, as it fills with debris. If water conditions are not extremely poor, some operators will use only shell or gravel and eliminate the fiberglass insulation and the maintenance involved with replacing it. In most cases, either Filter A or B will provide suitable water for shedding crabs.

Closed-system shedders In some areas of North Carolina, water conditions do not permit successful floating or flow-through shedding facilities. Even the installation of an elaborate filter system does not sufficiently improve water quality. Also, there are some crab shedders that do not have access to natural bodies of water in which to shed crabs. For these reasons, the closed-system shedding facility has evolved.

In theory, a properly installed closed system will produce soft crabs in your backyard, wherever you live, but peeler availability and water supply usually require that closed systems be situated close to crab-harvesting areas. Because of the cost and maintenance, closed systems should only be installed if floating and flow-through shedders are impossible to install or water quality is irreversibly poor.

The basic plumbing, shedder construction, layout and pump sizes for a closed system are the same as for a flow-through system. Water storage, filtration and placement of the shedders to achieve a gravity-flow system are the major differences between the closed and flow-through shedding systems.

A closed shedding system is self-contained. Water is stored in some type of filtering container and pumped through plastic PVC pipe to a protein skimmer (filter) and then flows to the shedders and returns to the filtering container by gravity flow. Closed systems may be constructed either inside a shelter or out in the open. Well water may be used with the addition of chemicals to

simulate sea water or natural sea water may be transported to the system. Experience has shown that natural sea water of the same approximate salinity as that in which the peelers were captured produces the best shedding results.

Before you construct a water reservoir or storage tank, some quantity calculations are necessary. Each shedding tank (four-by-eight feet with four inches of water) will hold approximately 80 gallons of water. An extra 25 percent reserve is a good idea. To determine how many gallons of water are required for a particular closed system, multiply the number of shedders by 80 and add one-fourth of this number. For example, 12 shedders times 80 gallons equals 960 gallons; one-fourth times 960 equals 240; 960 gallons plus 240 equals 1200 gallons. In this example, 1200 gallons of water are needed for a 12-shedder, closed system, but since 960 gallons of water are in the shedders, a reservoir capacity of only 240 gallons is needed. This extra water is necessary to fill all of the plumbing and to compensate for evaporation.

After determining the necessary storage capacity, a storage tank meeting the system requirements is constructed of concrete, block or fiberglass. Availability and cost are the major factors in selecting materials. Production results are the same.

Because water returns from the shedders back to the reservoir by gravity flow, the reservoir must be placed below the drain line from the shedders. Otherwise, an additional pump will be necessary to return water from the shedders to the reservoir. Most of the time, the storage tank will be partially buried so that the shedders are at an easily accessible height for working and yet a gravity-return system still functions. If the storage tank is not partially buried, the shedders must be raised to achieve a gravity flow return of the water from the shedders. These raised shedders may require a ladder to fish them and thus make the job more difficult and time consuming. Figures 24-A and -B illustrate a closed-system shedding facility with easy access.

There are many different types of filter systems used with closed shedders. Some have biological filters and straining filters. Others may have more than one of each type of filter. A few of the small

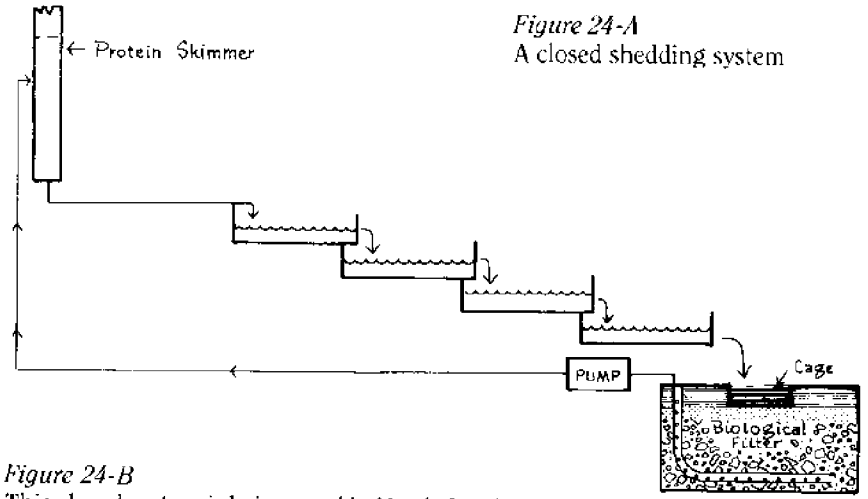
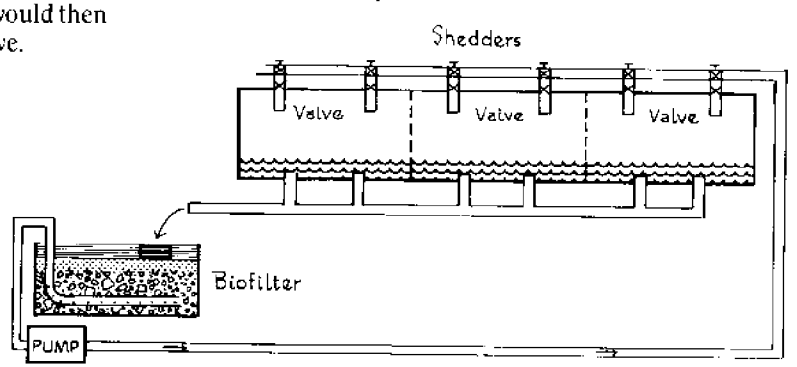


Figure 24-A
A closed shedding system

Figure 24-B
This closed system is being used in North Carolina and Virginia. It would be very easy to install a protein skimmer in-line to the right side of the system. Shed rates would then improve.



systems have no filters at all. They simply change the water often to maintain good quality. For the small closed systems, the absence of filters and the frequent changing of the water produce enough soft crabs for a family to eat, but the crabs die at a high rate. For the commercial production of soft crabs, a filtering system increases the survival rate of the crabs and thus increases profits to the owner. In most areas of North Carolina, the systems shown in Figures 24-A and -B, are sufficient and are economical to construct.

Methods of Shedding Blue Crabs

protein skimmer.
Source: Mike Oesterl
Virginia Sea Grant
Marine Advisory Serv

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Figures 24-A and B the water storage container is
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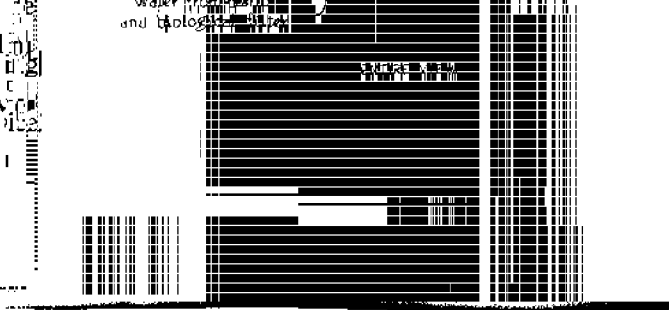
and bends upward to about six inches from the top.
e pump is inserted down this drain pipe to
e reservoir. Clean sun-bleached, whole oyster
placed on top of this pipe until the container is about
crushed oyster shells or gravel are then placed on
e shells to within one foot from the top of the water-
tainer.
s for the container with a square or rectangular hole
e at least one-fourth the size of the top. A frame is
of one-fourth inch heavy gauge mesh wire, four
to fit in this hole. Four-inch fiberglass wall insulation
ner removed is inserted into the wire frame. The return
e shedders deposits water on to the fiberglass which
gl es shells and becomes relatively clean by the time
e supply line at the bottom of the drain pipe. This cycle
over and over to clean the water. The fiberglass will
ging every couple of weeks.
eam skimmer (Figure 24-A) which is in the line between
pump and the shedders is also necessary to skim off
es a to introduce oxygen into this water. This
as been very successful in increasing production in
closed shedding systems. It is not presently being used in
na but it is recommended for closed systems.
24-B illustrates the closed system design used in North
gure 25 shows the construction design of a protein
e main pipe of the skimmer is six inch to 12-inch PVC
0 to 15 feet above the shedders to provide gravity
water supply to the shedders. This pipe may be fastened
g a tree, a pole, or whatever is handy. It should be
st even if the system is in a building, because the



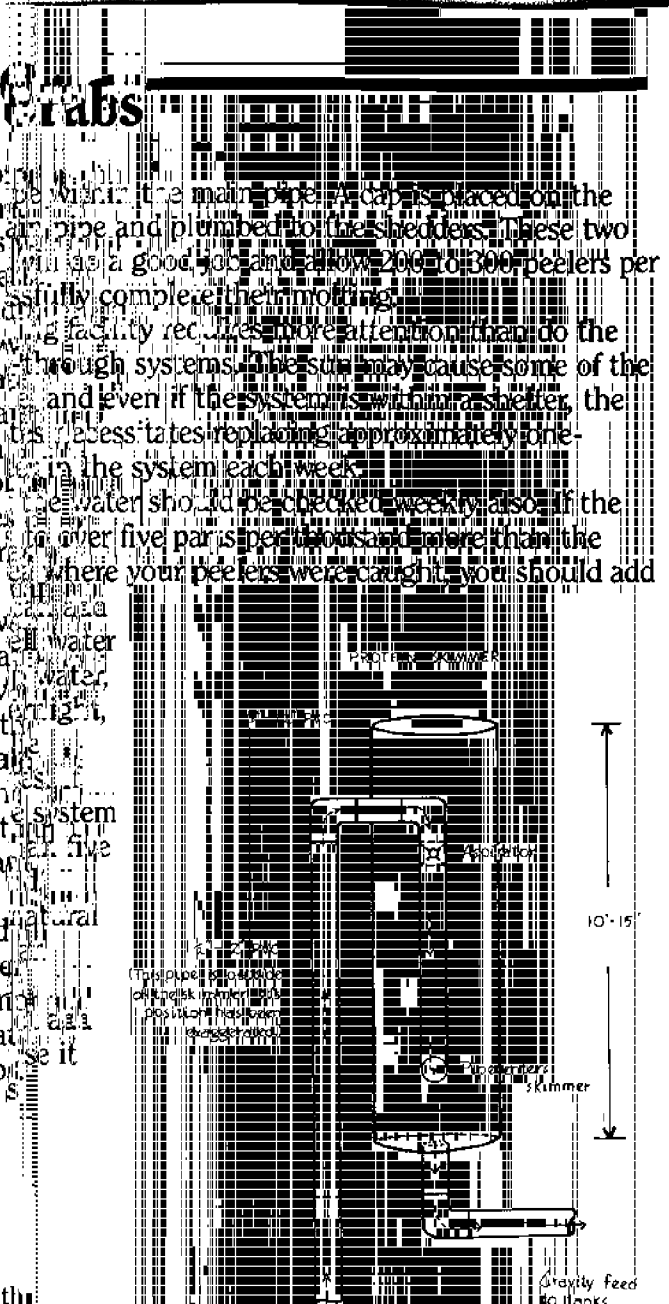


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Figure 25
An enlargement of th

Maintaining Shedding Systems

No matter which system you use to shed crabs—floating, flow-through or closed—you'll need to maintain your system properly. Floating systems will handle 200 to 300 peelers satisfactorily if plant and marine life are not allowed to build up in the shedder. You can prevent this growth by pulling the float up on dry land every two weeks for one day. The sun will kill these growths and also prevent the float from becoming water-logged and sinking. The sun will also kill any wood-eating parasites and preserve the life of the floats. If the build-up of growing organisms becomes excessive, scrub with a brush to remove algae and barnacles.

Flow-through systems will normally shed more peelers than any other system because natural water is used and oxygen is added. In cooler months, there is more oxygen in the water and some shedders have successfully housed 500 to 600 peelers per unit. As water temperatures increase to the high 70s and 80s, quantities of peelers are reduced to 250 to 350 per unit. The flow-through systems should be shut down in sequence every two weeks and scrubbed clean to kill any growing organisms in the shedders.

In some areas along the coast, organisms may grow in the intake lines or in the water-supply lines. Mechanically clean and flush these lines or back-flush them with fresh water to kill these growths and prevent clogging of the pipes. Each season, clean check valves and inspect them to ensure that they have not frozen. Inspect electric pumps each season, replace impellers where needed, and check plumbing leaks. Finally, check all electric lines to prevent power failures.

Closed systems seem to have more problems with filters than any other part of the system. You'll need to clean the shedders, check the pumps, the wiring and the plumbing, and pay special attention, sometimes twice a season, to the filters. The fiberglass insulation in the top of the reservoir requires replacing every two weeks, and the shell and gravel may need replacement each season. The oyster shell or gravel may need replacement in mid-season if the water has much debris in it.

Fishing and Protecting Your System

No matter how well your system is designed, successful soft crab operations require a great deal of time. If you have a small system—one or two shedders—you will need to: catch or buy peelers; cull or grade rank and green peelers; gently handle and place peelers in the proper shedders; fish or check the shedders at least every six hours for soft crabs; store the soft crabs in a refrigerated compartment; and clean "stills" (crabs dying while molting) and damaged crabs that must be frozen or eaten.

In addition, green peelers should be checked daily or at least every two days. Remove those peelers that have turned rank and place them in the shedders designated for ripe peelers. This prevents the shedding of a crab in a unit with green peelers. Finally, the vacated exoskeletons, or sheds, must be removed daily. These tasks must be performed 24 hours a day, seven days a week, for the entire soft crab season.

Leave the newly-emerged soft crab in the water at least one hour and preferably two hours. The crab is very weak after molting and if removed as soon as it sheds, it will die. Two hours in the water after shedding will not only strengthen the crab, but will also allow the crab to fill out, look better and survive in a chilled climate up to seven days. After two hours, the crab will still be soft, and the hardening process will stop when the soft crab is removed from the water.

Check your shedders every four hours to prevent soft crabs from becoming "paper shells" (crabs left in the water until the shell becomes brittle).

Live soft crabs should be refrigerated at 48 to 50 degrees Fahrenheit as quickly as possible. Handle crabs gently as you remove them from the shedder and place them carefully in containers, mouths up, so that they do not rest on top of one another. Avoid exposure to heat and sun.

Preparing and Marketing Live Soft Crabs

Markets pay better prices for properly handled and packaged soft crabs. Mangled, dead and poorly handled and packaged soft crabs always bring a lower price.

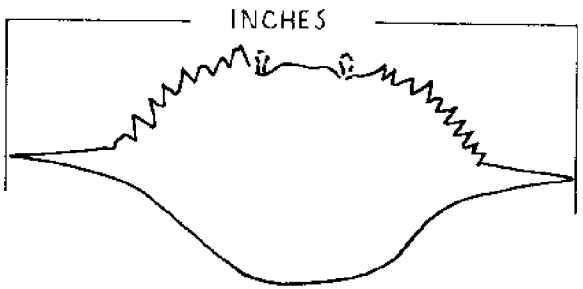
Often, individuals will purchase damaged soft crabs or crabs with claws and legs missing, at reduced prices, but most consumers prefer soft crabs that have all of their legs and at least one claw. Restaurants, most of which want to maintain a reputation for quality, usually insist on a fresh, nice-looking soft crab with all appendages and at least one claw. Exceptions occur if a restaurant can buy damaged soft crabs at large discounts for specials.

The following table lists the standard classification for soft crabs and their respective sizes.

Table 3

Soft Crab Classification

Size	Distance from Points (Width)
Mediums	3½" to 4"
Hotels	4" to 4½"
Primes	4½" to 5"
Jumbos	5" to 5½"
Whales	5½" and over



Most restaurants will not purchase several different sizes of live soft crabs. Some prepare only mediums because of purchase price. Other restaurants will purchase hotels or primes and want to consistently serve the same size crab. Still other restaurants want only gourmet jumbos and whales.

To package live soft crabs, place neatly in layers, mouth up, on top of eel grass or short-stem, barley straw in wax-treated cardboard boxes. Cover the crabs with wet-strength paper, one-fourth inch of additional eel grass or straw, and sprinkle with ice. This not only cushions crabs for transport but also cools and helps keep them alive.

"Stills" are not shipped with live crabs. Though these crabs are edible, they should be cleaned and frozen. Another crab, not marketable as a soft crab, is the buckram—a post-molted crab in a semi-hard shell. Any producer and marketer of live soft crabs that tries to sneak stills, paper shells or buckrams into cartons will most always suffer a severe price cut for the whole lot of crabs.

The amount of profit an individual shedding operation receives is directly proportional to his care in handling peelers, maintaining his shedding facility, fishing his shedders regularly, and carefully storing and packaging his soft crabs.

Freezing Soft Crabs

You can freeze soft crabs that cannot be readily sold or eaten. Commercial operators clean and freeze soft crabs to satisfy the requests of specific customers or to wait for a higher price. When soft crab production is low, small shipments of live crabs may not be as profitable as freezing the crabs for larger shipments.

There are advantages and disadvantages associated with freezing soft crabs. The most obvious disadvantage is the expenditure for freezing equipment. Some larger producers have quick-freezing units (—20 degrees F) and use other freezers to store soft crabs at zero degrees. However, most operations use regular household freezers at zero degrees with slats between the boxes for air circulation.

Some customers request that soft crabs not be cleaned, but individually wrapped and packaged. This requires additional time and labor. Probably 95 percent of all frozen soft crabs must be cleaned individually, wrapped in cellophane, and packaged, belly up, in boxes. Again, additional time and labor are necessary and utility bills will increase.

Disadvantages are often offset by returns. Freezing soft crabs may reduce transportation costs because perishability is eliminated and fewer, but larger, shipments are possible. When the market is not saturated, frozen soft crabs often result in a higher return per unit. "Stills" cannot be marketed as fresh or live crabs. Therefore, freezing them provides income that is lost in the fresh market.

Under home freezing conditions, most frozen soft crabs will maintain good quality for a maximum of six months. Commercial freezers will maintain good crab quality for as long as a year and a half. Individual wrapping, cleaning and freezing will determine the quality of the frozen soft crabs.

UNC Sea Grant Marine Advisory Service

The information in this book has been printed to provide a better understanding of the nature of the blue crab and its habits, and also of soft crab production. It is impractical to cover all the options and situations for crab-shedding, but the basic guidelines presented here apply to all blue-crab shedding operations. If you want to know more about crab shedding, contact one of UNC Sea Grant's Marine Advisory personnel who work along the North Carolina coast. They will be glad to provide additional information and assistance.

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Buck and Rider - A male and female crab just prior to and during mating. Sometimes referred to in North Carolina as a "channeler and his wife."

Buckram - A crab several hours after molting. Has a semi-hard shell. In between a soft crab and a hard crab, not marketable as a soft crab.

Buffalo Crab - A soft crab with legs or claws missing.

Buster - A soft crab beginning to emerge from the hard shell.

Cars - Boxes that float in the water and house peelers until they shed.

Channeler - A large, mature, male blue crab.

Closed Shedder - An onshore, self-contained system for holding peelers until they shed.

Dead Man's Fingers or Meat - The gills of a blue crab which are located on both sides below the exoskeleton and falsely believed to be poisonous.

Doubler - A male and female crab prior to and during mating. A buck and rider or a channeler and his wife.

Ecdysis - The process by which a blue crab busts out from its old shell and emerges as a soft crab. Molting and shedding refer to this same process.

Epimeral Line - A dark line on the face of a blue crab below the eyes and extending on either side of the mouth around and under the points. This epimeral line serves as a hinge as a peeler begins to molt.

soft crab but is bet

Hair Sign - A peeler t
called a white-line peele

Hotel - A market grade
half inches in w

Jimmies - A large, male
up.

Jimmie Potting - The p
pot or peeler pot to attra

Jumbo - A market grad
half inches in width).

Mediums - A market g
to four inches in wid

Molting - The process
and emerges as a soft c

Nicking - The process
claw for peeler identific

Paper Shell - A blue cra
water too long to be h
a hard she

Peeler - A hard blue cra

Peeler Pot - A crab tra
peelers.

Peeler Pound - A crab
heart and a trap.

a natural body of water that is used to
lding. Often called floating shedder.

An onshore shedding facility used to hold
Natural water is pumped through the
source.

maximum weight for its existing shell.

that is not considered to be a peeler or
molts and has a hard shell.

is 12 to 15 days away from molting. Also

size for soft crabs (four to four-and-one-

lue crab capable of mating and doubling

ocess of placing a large male crab in a crab
et female peelers.

or size for soft crabs (five to five-and-one-

le or size for soft crabs (three-and-one-half

which a blue crab sheds its old hard shell
ab (ecdysis).

breaking the movable finger of a crab's
tion and to prevent damage to other crabs.

that has shed and has been left in the
ed a soft crab but not long enough to have

within twelve days from molting.

with one-inch, wire mesh, used to harvest

arvesting device with a wire or net lead, a

Soft Crab Terminology

Apron - A movable flap on the abdomen of the blue crab that is used for sex identification. Males have a "T" shaped apron, immature females a triangle, and adult females a half circle with a point in the middle.

Backfin - The last appendage or leg of the blue crab, often called swimmers or paddle fins. Color identification of peelers is present in the last joints of the backfin.

Floats - A floating box
hold peelers during s

Flow Through Syste
peelers during shedding
system and returns

Full Crab - The crab is a

Green Crab - A blue crab

Soft Crab Terminology

Pink Sign - A premolt stage of peeler development in which a pink line is visible through the paddle fin about one week prior to molting.

Prime - A live or frozen soft crab four-and-one-half to five inches wide.

Rank Peeler - A premolt blue crab one day or less from molting.

Red Sign Peeler - A premolt blue crab with a red line visible inside the paddle fin 1-3 days from molting.

Ripe Peeler - A blue crab one day or less from molting (same as rank peeler).

Sally Crab - An immature female crab with a triangular shaped apron.

She Crab - Usually an immature female crab, but often used to refer to a mature female crab as well.

Shed - the empty exoskeleton from which a soft blue crab has emerged. Many soft crabbers also refer to a shedding device as a shed.

Shedding - The process whereby a blue crab emerges soft from its old hard exoskeleton. It is also called molting and ecdysis.

Sook - A mature female crab with an apron that resembles a half circle with a point in the middle.

Still - A busting soft crab that dies during or just after the shedding process.

Tables - Onshore shedding units which hold peelers in water until they molt.

Terminal Molt - The final molt of a blue crab.

Trawl - A net with otter doors towed by lines behind a powered boat that scrapes the bottom harvesting blue crabs. Crab trawls must have three-and-one-half-inch mesh or larger webbing and restrictions as to net width and towing areas.

Trotline - A long, baited line used to harvest hard blue crabs and peelers.

White Belly - A male crab just after hardening from its molt.

Whales - The market size of live and frozen soft crabs five-and-one-half-inches wide or larger.

White Sign - A premolt peeler with a visible white line on the paddle fin about 10-15 days prior to molting.

Width - The measure of a blue crab from point to point.

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