



# Preparing Florida Seafood

*Name*

*Title*

*Affiliation*

**UF** IFAS Extension  
UNIVERSITY OF FLORIDA

**Sea Grant**  
Florida



## Goals

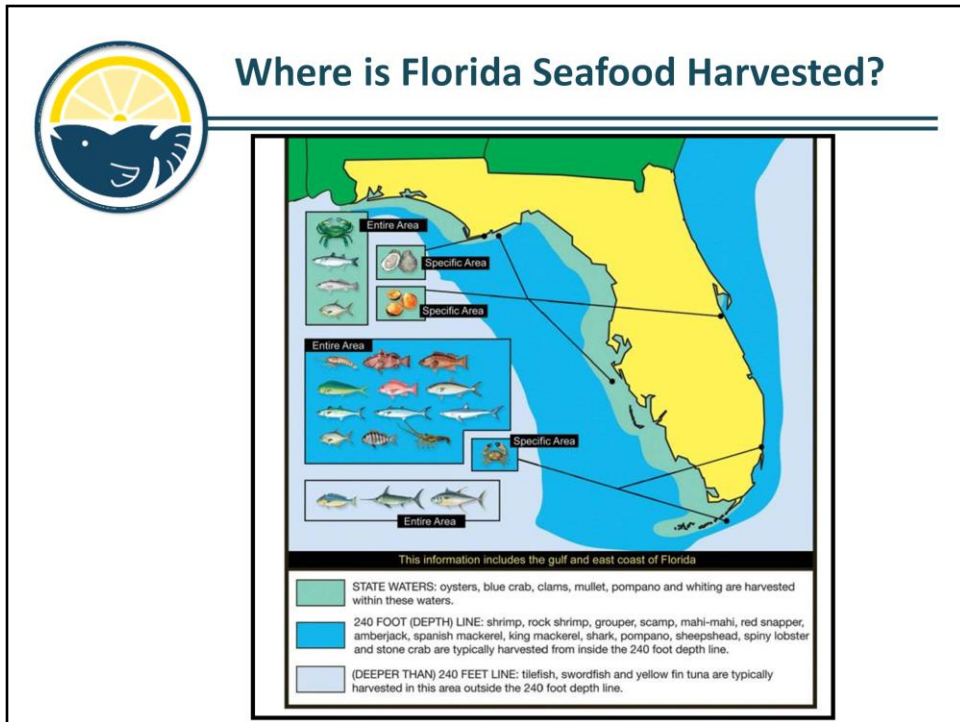
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- Increasing your knowledge of techniques for safely preparing seafood in a healthy way
- Feel more confident about increasing seafood in your diet

### Notes to Instructor

The purpose of this presentation is to educate consumers on how to prepare and cook high quality seafood, and how to properly handle and store Florida seafood. There are plenty of opportunities to ask your participants questions about their experiences/observations when cooking seafood. The presentation should take 20-30 minutes to complete.

The Seafood Preparation and Cooking activity found in the supplemental materials section can be incorporated throughout the talk, used as a pre-post, or used as an ice breaker. Read through and decide how the three scenarios can be incorporated.

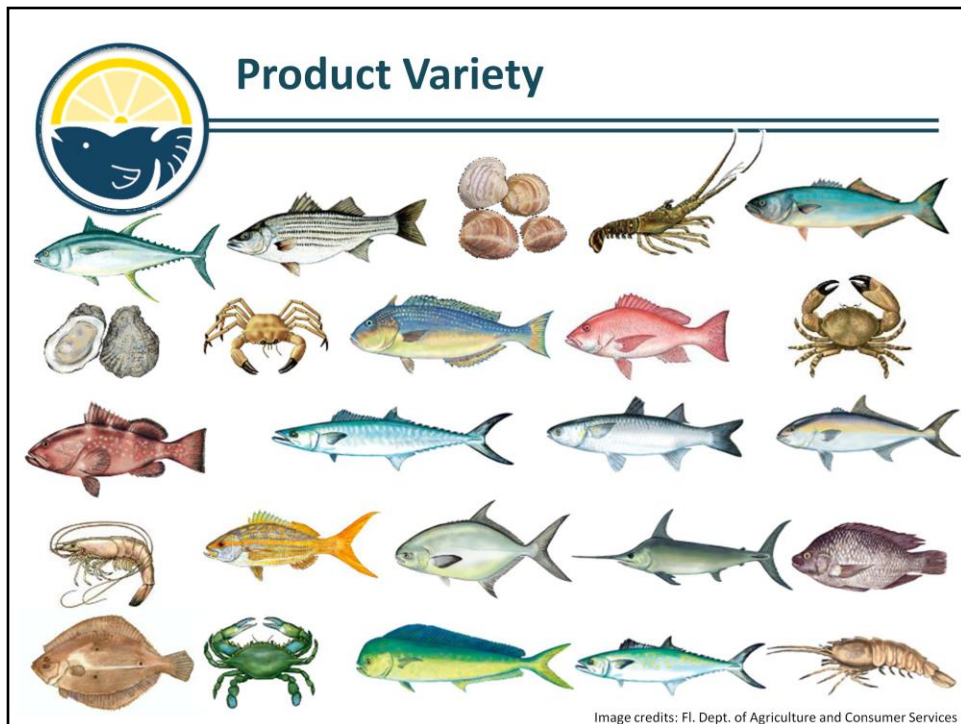


## Background

When asking where seafood is harvested in Florida, a more appropriate question to ask might be “where is it *not* harvested?”

Florida’s mainland has the longest coastline (1,350 mi.) in the contiguous United States. When islands are included in this, the number climbs to 8,400 miles! Florida’s climate spans from tropical to temperate conditions, and includes a multitude of productive near-shore and estuarine environments such as marshes, seagrasses, mangroves, and coral reefs. Florida is also surrounded by the Gulf of Mexico and Atlantic Ocean, which provide a variety of warm water currents, bottom topography, and physical/chemical properties that support a variety of highly productive fisheries.

Florida’s commercial fishermen harvest a variety of seafood throughout the bays, near-shore, and offshore habitats in state and federal waters on both the Gulf and Atlantic sides. State waters on the Gulf side extend out to 9 nautical miles; state waters extend 3 nautical miles on the Atlantic side. Federal waters extend beyond these limits out to 200 nautical miles. In addition, a variety of farm-raised or aquacultured products are grown in state waters and land-based facilities.



### Notes to Instructor

Before going over the information on the slide, you may want to ask your participants about what type of Florida seafood they like to eat and/or what species they do or don't recognize from this slide (obviously not all types of Florida seafood are represented. For instance several species of grouper/snapper exist, and we only have one or two of the species represented on the slide).

Or you may want to ask if they have tried all the types shown?

Left to Right: 1<sup>st</sup> Row: Tuna, Striped Bass (aquaculture), Hard Clams (aquaculture), Spiny Lobster (aka Florida Lobster), Bluefish. 2<sup>nd</sup> Row: Oysters, Golden Crab, Golden Tilefish, Red Snapper, Stone Crab. 3<sup>rd</sup> Row: Red Grouper, Wahoo, Mullet, Amberjack. 4<sup>th</sup> Row: Brown Shrimp, Yellowtail Snapper, Pompano, Swordfish, Tilapia (aquaculture or wild) 5<sup>th</sup> Row: Flounder, Blue Crab, Mahi-mahi (Dolphin), Spanish Mackerel, Rock Shrimp

\*To find the most recent landings data specific to your area visit: <http://myfwc.com/research/saltwater/fishstats/commercial-fisheries/landings-in-florida/>

Scroll down the page to find landings data for the most recent year with commercial landings data categorized by statewide, coast, county and month.

### Background

According to the Florida Department of Agriculture and Consumer Services, Florida produces over 80 varieties of both wild-caught and farm-raised products across the state in the Gulf and Atlantic in both state and federal waters. According to NOAA's National Marine Fisheries Service, in 2011 Florida ranked among the top twelve states for fresh seafood production (only commercial seafood is included, not recreational seafood or farm-raised products) with nearly 110 million pounds harvested and a dockside value of more than \$226 million.\* (see instructor notes for landings reference)

Florida aquaculture products are managed by the Florida Department of Agriculture and Consumer Services (FDACS) through the division of aquaculture (<http://www.floridaaquaculture.com/>). Florida aquaculture producers reported sales in 2012 of \$69 million based upon a survey conducted for FDACS Division of Aquaculture and administered by the Florida Agricultural Statistics Service.

(<http://www.floridaaquaculture.com/publications/Aquaculture2013-FDA.pdf>).

The most recent 2007 report by the USDA ranked Florida aquaculture as 7<sup>th</sup> among all states in the US with 469 farms reporting farm income of \$61.3 million ([http://www.floridaaquaculture.com/publications/Issue\\_69.pdf](http://www.floridaaquaculture.com/publications/Issue_69.pdf)). The next census of agriculture by the USDA was scheduled in 2012.



### **Background**

Despite being a major seafood producer, Florida (or the U.S.) cannot meet the growing demand for seafood alone. In fact, in 2011 approximately 91% of the seafood consumed by Americans was imported from other countries. Approximately half of this seafood was farm-raised.

During the past several years, however, the influx of lower-cost, imported seafood has displaced local seafood in many commercial markets along with the rich traditions associated with it. Many Floridians, however, are becoming more concerned about the origin, sustainability, and safety of the seafood they consume, and local food movements are compelling people to buy more locally harvested products.



## Why Florida Seafood?

1. Stimulates local economy
2. Freshness and quality
3. Transparency and accountability
4. Affordability
5. Sustainability

### Notes to Instructor

This is a good time to ask participants about their experiences/observations of finding local seafood. Have they found it to be easy to find local seafood? How important is it to them to purchase/find locally produced seafood?

Rankings reflect the results of the Florida Seafood at Your Fingertips Statewide Survey (Question 18)

### Background

#### 1. Stimulates local economy

Florida's seafood industry has an economic impact of nearly \$13 billion annually and employs approximately 65,000 people throughout the state. (<http://www.st.nmfs.noaa.gov/st5/publication/econ/2009/FEUS%202009%20ALL.pdf>). The seafood industry underpins the economy of many coastal towns providing employment and income, and at times of the year, where there is little other economic activity. Buying local helps local jobs and also ensures that the ecological footprint, from catch to plate, is minimized. "By investing in fishermen, a shareholder helps to strengthen the local community."

#### 2. Freshness and quality

In many cases, local seafood will get to the consumer faster than imported seafood that needs to be transported by ship, plane or rail.

#### 2. Transparency and accountability

Florida fishermen also have to follow local, state, and federal regulations to ensure its fisheries are and remain sustainable for future generations. There are a number of management efforts that require fishermen to report their effort and landings so that resource managers can better track the status of local fish populations.

#### 4. Affordability

As with many harvested products, prices will reflect seasonality. When fish and shellfish are harvested locally, larger quantities may be available in local markets, which can reduce costs and prices. These times of increased availability of high-quality products tend to cause prices to drop, creating the best value for the consumer.

#### 5. Sustainability

Florida fisheries are considered sustainable because of effective state and federal management. Consumers should feel confident when purchasing Florida seafood because it is managed responsibly. The social and economic side of "sustainable seafood" is covered because your purchasing decisions support the local fishing communities and the seafood industry in your region. You're also creating a stable marketplace for the fishermen, helping the fishermen feel more comfortable in making adjustments to improve the long-term sustainability of the fishery instead of focusing on short-term survival. In most cases, the carbon footprint of purchasing local seafood is less as it takes less energy (fuel, electricity) to move seafood from the harvester to the consumer.

Whatever your reason for choosing Florida seafood, because the majority of seafood found in Florida's market is not harvested locally, it may be difficult for those who are interested to find it.

HOWEVER, this presentation will help you feel more confident in preparing quality Florida seafood products and safely storing them in the

home.



## The truth about seafood

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- It is healthy “fast” food
- It is easy
- It is delicate
- It can be safely handled

### Notes to Instructor

There is no trick to cooking seafood. It is easy to master the simple techniques necessary to produce delicious seafood dishes. In this presentation we will focus on fish, shrimp, clams, oysters, crabs and lobster.





### Notes to Instructor

These are the four basic handling principles to ensure safe food. We'll be going into more detail during the presentation.

### Background

Source: <http://www.fightbac.org/>



### Notes to Instructor

Ask your participants: Did you know that it is important to consistently wash hands and kitchen surfaces before and after preparing food? 67% of Americans report they “always” wash cutting boards, utensils, and countertops after preparing each food. (Source: Fightbac clean brochure, 2004 Consumer Survey, Partnership for Food Safety Education)

### Background

1. Wash your hands with warm water and soap for at least 20 seconds before and after handling food and after using the bathroom, changing diapers and handling pets. For best results, use warm water to moisten hands, then apply soap and rub hands together for 20 seconds before rinsing thoroughly.
2. Wash your cutting boards, dishes, utensils, and countertops with hot water and soap after preparing each food item and before going on to the next food.  
Surface Cleaning Tip: Using a mixture of 3/4 teaspoon liquid chlorine bleach per quart of water (or one tablespoon bleach per gallon of water) can provide some added protection against bacteria on surfaces. Flood the surface with the bleach solution and allow it to stand for several minutes, then rinse with clean water and air dry or pat dry with fresh paper towels. Bleach solutions can lose their effectiveness over time, so discard unused portions after one week.
3. Consider using paper towels to clean up kitchen surfaces. When done, throw away the towel. If you use cloth towels, wash them often in the hot cycle of your washing machine. If you use kitchen sponges, replace them frequently.

Source: <http://www.fightbac.org/>



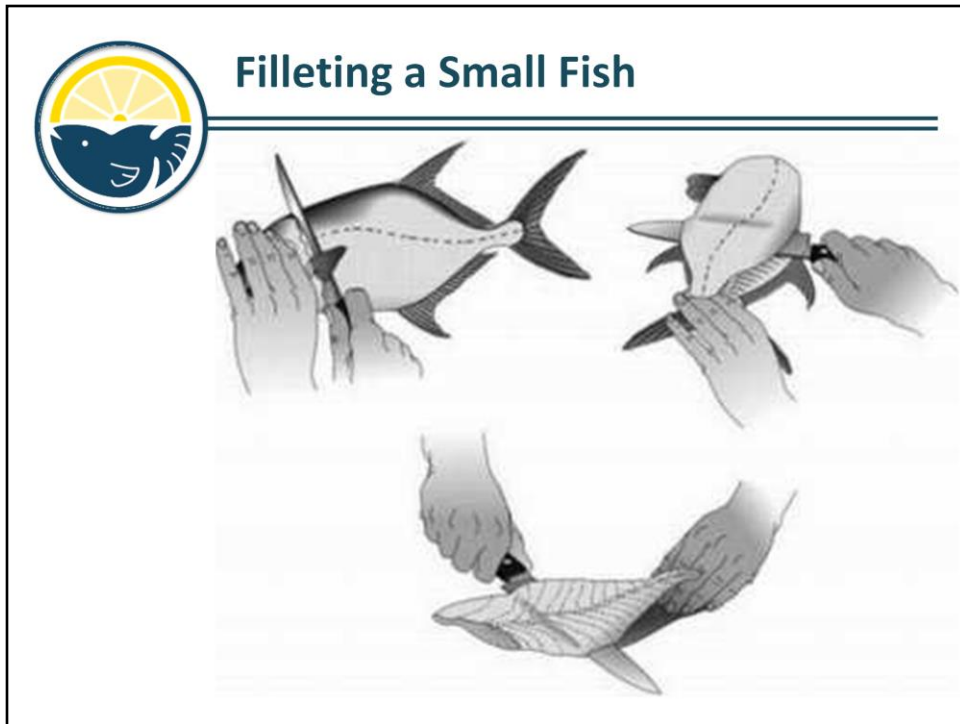
## Preparing Fish

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- To prepare a whole fish start with filleting.

### Notes to Instructor

Transitional slide. Learning to fillet a small fish or large fish takes practice. If you purchase a whole fish in the market, your retailer can prepare the fish for you.



### Notes to Instructor

This diagram shows how to fillet a fish.

### Background

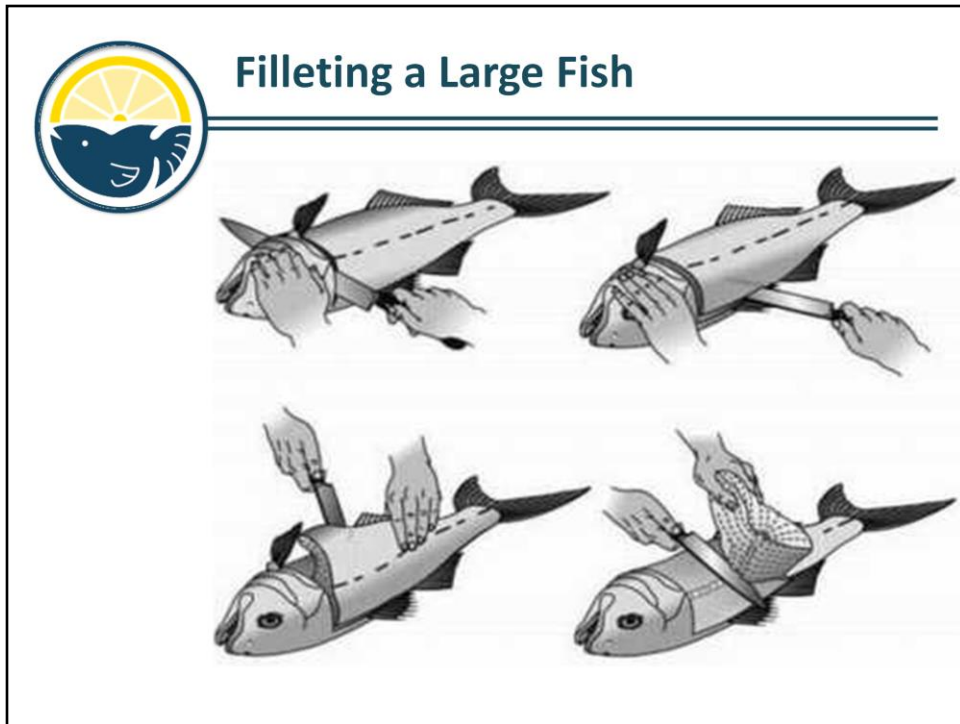
#### Filleting Fish

Materials: Flexible boning knife, cutting board long enough for whole fish, scaler, trashcan, access to water, a small whole fish (gutted or ungutted but with scales left on). Make sure the fish is fresh so it will be easier to fillet.

1. Prepare your materials and rinse the fish off in case it has built up any slime on it.
2. If you want to leave the skin on the fish, scale the fish first and discard the scales into the trash.
3. Rinse the fish off one more time. It is very important to work with fish that will not slip away from you so make sure to dry it before handling it.
4. Mention Safety: always fillet with the knife blade away from you.

Steps for filleting a small (1/2 lb. to 4 lb.) fish.

1. Cut off the head just behind the gills.
2. Hold the fish by the tail. With the knife blade pointing away from you and across the body of the fish, begin to cut toward the head (where the head used to be). Use the backbone to guide your knife.
3. To take the skin off, begin by holding the fillet by the tail, skin side down.
4. Hold the knife crosswise across the fillet and insert the knife between the skin and the flesh. Don't worry if you don't get this perfect at first.
5. While holding the skin, cut in the direction of where the head used to be.



### Notes to Instructor

This diagram shows how to cut steaks out of a large fish and hopefully answer any questions.

### Background

#### Filleting Fish

Materials: Flexible boning knife, cutting board long enough for whole fish, scaler, trashcan, access to water, a large whole fish (should be gutted). Make sure the fish is fresh so it will be easier to fillet.

1. Prepare your materials and rinse the fish off in case it has built up any slime on it.
2. If you want to leave the skin on the fish, scale the fish first and discard the scales into the trash.
3. Rinse the fish off one more time. It is very important to work with fish that will not slip away from you so make sure to dry it before handling it.
4. Mention Safety: always fillet with the knife blade away from you.

Steps for filleting a large (4 lbs and up) fish.

1. Make a deep cut just behind the gills (about halfway through the thickness of the fish).
2. Cut a slit a few inches in length along the top of the fish (the dorsal side).
3. Using the tip of the knife, separate the flesh from the bones, as illustrated. The fish should open up just like a book.
4. When completely open, finish cutting away the fillet by moving the knife along the "spine of the book."



## Cleaning Shrimp

- Remove head
- **Peel the shell**
  - *You can leave the tail on or off*
- Remove the vein
- Rinse shrimp



### Notes to Instructor

Pictures highlight the steps to take when removing the head of a shrimp. The pictures are timed (appear animation) to start 5 seconds after the previous picture. You can increase or decrease this time based on your preference needed.

### Background

Materials: cutting board, small paring knife or shrimp deveiner, bowls, trashcan, access to water, shrimp

1. Take the head off by twisting or pulling it.
2. Peel the shell off. This can be done easily by grasping the legs attached to the shell and pulling towards the side of the shrimp. This will crack the shell and if followed through, will take off quite a bit of the shell. Repeat if needed. (Grasp 1/2 of the legs at one time).
3. Pull this flap towards the tail until it comes off. Underneath is the "vein", a small black tubule that resembles a chicken vein in a chicken leg. This is actually the digestive tract of the shrimp - stomach and colon in all. If there is no vein, that is ok (it just didn't eat recently). Remove the digestive tract.
4. Put the shrimp in cold water and "wipe" the vein away and use the water to keep it from sticking to your hands.

Simpler Version - Slice halfway through the shrimp from mid head to tail but make sure you peel the shrimp first. There's a little black vein like a spinal cord in the shrimp, now that's the vein that you want to remove. Just use your hands and pull the vein out. Deveining doesn't have to be perfect so just relax. There is also a shrimp deveiner tool that can be bought in most seafood departments/markets and it is a great investment.



## Cleaning Shrimp

- Remove head
- **Peel the shell**
  - *You can leave the tail on or off*
- Remove the vein
- Rinse shrimp



### Notes to Instructor

Pictures highlight the steps to take when removing the shell of a shrimp. The pictures are timed (appear animation) to start 5 seconds after the previous picture. You can increase or decrease this time based on your preference needed.

### Background

Materials: cutting board, small paring knife or shrimp deveiner, bowls, trashcan, access to water, shrimp

1. Take the head off by twisting or pulling it.
2. Peel the shell off. This can be done easily by grasping the legs attached to the shell and pulling towards the side of the shrimp. This will crack the shell and if followed through, will take off quite a bit of the shell. Repeat if needed. (Grasp 1/2 of the legs at one time).
3. Pull the top of the shell towards the tail until it comes off. Underneath is the "vein", a small black tubule that resembles a chicken vein in a chicken leg. This is actually the digestive tract of the shrimp - stomach and colon in all. If there is no vein, that is ok (it just didn't eat recently). Remove the digestive tract.
4. Put the shrimp in cold water and "wipe" the vein away and use the water to keep it from sticking to your hands.

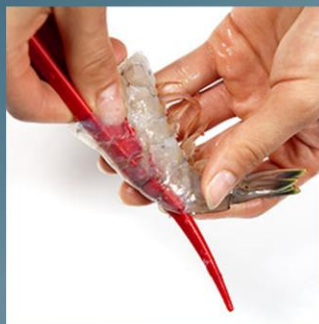
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## Cleaning Shrimp

- Remove head
- Peel the shell
  - You can leave the tail on or off
- ***Remove the vein***
- Rinse shrimp



### Notes to Instructor

Pictures highlight the steps to take when deveining a shrimp. The pictures are timed (appear animation) to start 5 seconds after the previous picture. You can increase or decrease this time based on your preference needed.

### Background

Materials: cutting board, small paring knife or shrimp deveiner, bowls, trashcan, access to water, shrimp

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3. Pull this flap towards the tail until it comes off. Underneath is the "vein", a small black tubule that resembles a chicken vein in a chicken leg. This is actually the digestive tract of the shrimp - stomach and colon in all. If there is no vein, that is ok (it just didn't eat recently). Remove the digestive tract.
4. Put the shrimp in cold water and "wipe" the vein away and use the water to keep it from sticking to your hands.

Simpler Version - Slice halfway through the shrimp from mid head to tail but make sure you peel the shrimp first. There's a little black vein like a spinal cord in the shrimp, now that's the vein that you want to remove. Just use your hands and pull the vein out. Deveining doesn't have to be perfect so just relax. There is also a shrimp deveiner tool that can be bought in most seafood departments/markets and it is a great investment.





## Cleaning Shrimp

- Remove head
- Peel the shell
  - You can leave the tail on or off
- Remove the vein
- *Rinse shrimp*



### Notes to Instructor

Pictures highlight the steps to take when deveining a shrimp. The pictures are timed (appear animation) to start 5 seconds after the previous picture. You can increase or decrease this time based on your preference needed.

### Background

Materials: cutting board, small paring knife or shrimp deveiner, bowls, trashcan, access to water, shrimp

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### Notes to Instructor

The pictures highlight the steps to take when shucking a clam. Description of pictures (from FL Sea Grant Flickr site) starting at top left:

- (top left) Clams, difference between dead and alive. Live clam is tightly closed, not gaping.
- (top middle) Clams, shucking through front end
- (top right) Clams, shucking, twisting knife through
- (bottom left) Clams, shucking, sliding knife through
- (bottom middle) Clam opening shell
- (bottom right) Clams, shucked

### Background

#### Shucking Clams

1. Discard any clams that remain open when tapped with fingers. To clean clams, scrub with stiff brush under cold running water. Soak clams in mixture of 1/3 cup salt to 1 gallon water for 20 minutes. Drain water; repeat 2 more times.
2. Scrub the clams with a stiff brush under running water.
3. Place clams on tray and refrigerate 1 hour to help clams relax.
4. Shuck clams. Take pointed clam knife in one hand and thick towel or glove in the other. With towel, grip shell in palm of hand. Keeping clam level with knife, insert the tip of knife between the shell halves next to hinge; twist to pry shell apart until you hear a snap. (Use knife as leverage; do not force.)
5. Use a towel or glove to secure the clam in your hand.
6. Twist to open shell, keeping clam level at all times to save juice. Cut the muscle from shell and discard top shell.

Tip shell over strainer in bowl to catch clams. Cut clams out of shells with utility knife; discard bottom shell.

## Shucking and Cleaning Oysters



### Notes to Instructor

These pictures highlight the steps to take when shucking an oyster. Description of pictures (from FL Sea Grant Flickr site) starting at top left:

- (top left) Oyster shucking
- (top middle) Oyster, shucking twisting (see step 3 below)
- (top right) Oyster, shucking detach muscle (see step 5 below)
- (bottom left) Oyster shucking end
- (bottom middle) Oyster shucking last step (see step 6 below)
- (bottom right) Oyster shucked, shell & meat (see step 6 below)

### Background

Materials: shucking knife, cutting board, dry washcloth or a shucking glove, trashcan, access to water, whole oysters.

#### Shucking Oysters

1. Under cold running water, scrub any mud or dirt from the shell (it should be tightly closed and feel heavy) with a stiff wire brush. Keep the oysters refrigerated (cup side down to help retain their juices) and covered with a damp, clean kitchen towel until ready to serve.
2. Using a folded towel or shucking glove to protect the hand that holds the oyster, securely hold the oyster cup side down with the point (or hinge side) toward you. Keep your hand across the oyster, perpendicular to the knife. Insert the oyster knife through the hinge, angling the blade down into the cup of the oyster. Find the hinge at the narrow end of the oyster and insert the tip of a shucking knife between the two shells.
3. Wiggle the knife until it is firmly lodged between the shells, then twist the knife to pry the top and bottom shells open.
4. Wipe the knife on the towel to remove any mud or shell fragments.
5. Slide the knife along the underside of the top shell to release the meat of the oyster. Be careful to keep all of the flavorful liquid. Discard the top shell.
6. Slide the knife under the oyster muscle to release the meat from the lower shell.



### Notes to Instructor

These pictures highlight the steps to take when cleaning a crab before cooking. Description of pictures (from FL Sea Grant Flickr site) starting at top left:

- (top left) Blue crab, how to hold it (see step 2 below)
- (top middle) Blue crab, how to open (see step 3 below)
- (top right) Blue crab, cleaning, pulling the shell (see step 3 below)
- (bottom left) Blue crab, cleaning, taking underside off (see step 4 below)
- (bottom middle) Blue crab, cleaning, taking underside out (see step 4 below)
- (bottom right) Blue crab, cleaned, underside (see step 4 below)

### Background

Materials: cutting board, bowl, ice, trashcan, access to water, live blue crab, large sturdy knife (optional)

1. Stun live blue crab by placing in ice water for five minutes.
2. Grasp crab by its legs and under top shell spine (stunned and can be handled bare handed).
3. Pry off the top shell using the shell's spine for leverage. This instantly kills the crab.
4. Flip crab over and remove the apron.
5. Using high pressure water, spray out the entrails.
6. Using thumb, twist off the mouth parts.
7. Remove spongy gills from both halves and rinse.
8. Cleaned and ready to cook.





### Notes to Instructor

These pictures highlight the steps to take when cleaning a crab before cooking. Description of pictures (from FL Sea Grant Flickr site) starting at top left:

- (top left) Blue crab, cleaning without shell
- (top middle) Blue crab, cleaning, guts intact (see step 5 below)
- (top right) Blue crab, cleaning, picking out gills (see step 7 below)
- (bottom left) Blue crab, cleaning, without shell (see step 7 below)
- (bottom middle) Blue crab, cleaning, taking gills out (see step 7 below)
- (bottom right) Blue crab, cleaned (see step 8 below)

### Background

Materials: cutting board, bowl, ice, trashcan, access to water, live blue crab, large sturdy knife (optional)

1. Stun live blue crab by placing in ice water for five minutes.
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8. Cleaned and ready to cook.



## Separate

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- Don't cross-contaminate
- Take two
- Clean your plate
- Safely separate
- Seal it
- Marinating mandate



### Notes to Instructor

Cross-contamination is how bacteria can be spread. Improper handling of raw meat, poultry and seafood can create an inviting environment for cross-contamination. As a result, harmful bacteria can spread to food and throughout the kitchen.

### Background

#### Take Two

Use one cutting board for fresh produce and a separate one for raw meat, poultry and seafood.

#### Clean Your Plate

Never place cooked food back on a plate that previously held raw meat, poultry, seafood, or eggs.

#### Safely Separate

Separate raw meat, poultry and seafood from other foods.

#### Seal It

To prevent juices from raw meat, poultry or seafood from dripping onto other foods in the refrigerator, place these raw foods in sealed containers or plastic bags on the bottom shelf of the fridge.

#### Marinating Mandate

Sauce that is used to marinate raw meat, poultry or seafood should not be used on cooked food unless it is boiled first.

Source: <http://www.fightbac.org/>



## Chill

- Refrigerate promptly and properly
- Chill factor
- Thaw law
- Divide and conquer
- Avoid the pack attack
- Rotate before it's too late
- Serve and preserve



### Notes to Instructor

Ask your participants: Did You Know? Less than half of shoppers are diligent about thawing meat in the refrigerator.

– FMI Trends, 2009

### Background

Refrigeration at 40°F or below is one of the most effective ways to reduce risk of foodborne illness. Microorganisms grow more rapidly at warmer temperatures, and research shows that keeping a constant refrigerator temperature of 40°F or below helps slow growth of these harmful microbes.

#### The Chill Factor

Refrigerate or freeze perishables, prepared foods and leftovers within two hours of purchase or use. Always marinate foods in the refrigerator.

#### The Thaw Law

Never defrost food at room temperature. Thaw food in the refrigerator. If you will cook food immediately, for a quick thaw, defrost in the microwave or enclose the food in an airtight package and submerge it in cold water.

There are three safe ways to defrost food: in the refrigerator, in cold water, and in the microwave.

#### Defrosting Do's

- Defrost food in the refrigerator. This is the safest method for all foods. Plan ahead: defrost the fish overnight in the refrigerator, which is the best method to minimize loss of moisture. A one-pound package will defrost within 24 hours. When thawing frozen fish that comes in a vacuum-seafood package, remove it from the package, cover, or wrap and thaw it under refrigeration immediately before use. Do not thaw product while it is still inside the vacuum-sealed package.
- Short on time? Thaw meat and poultry in airtight packaging in cold water if it will be used immediately. The water should never be higher than 70 degrees F and the food must be thawed within 2 hours. Change the water every 30 minutes, so the food continues to thaw in cool water.
- You could also use your microwave to partially thaw your fish. Use the lowest defrost setting, which is usually 30 percent of normal power levels, and follow the manufacturer's instructions for time based on amount of fish (a pound of fillets defrost in five to six minutes). The fish should feel cool, pliable, and slightly icy. Be careful not to overheat it and begin the cooking process. Foods defrosted in the microwave should be cooked immediately after thawing.

#### Defrosting Don'ts

- Never defrost food at room temperature. Food left out at room temperature longer than two hours may enter the Danger Zone—the unsafe temperatures between 40°F and 140°F. Bacteria can multiply rapidly between 40°F and 140°F.
- Don't defrost food in hot water.

#### Divide and Conquer

Separate large amounts of leftovers into shallow containers for quicker cooling in the refrigerator.

#### Avoid the Pack Attack

Do not overstuff the refrigerator. Cold air must circulate to keep food safe.

#### Rotate Before It's Too Late

Use or discard chilled foods as recommended in the USDA Cold Storage Chart found at [www.fightbac.org/coldstorage](http://www.fightbac.org/coldstorage).

#### Serve and Preserve

When serving cold, Florida seafood such as raw oysters and cooked shrimp platters, keep these "chilling" tips in mind:

- Cold foods should be kept at 40°F or below.
- Keep all perishable foods chilled right up until serving time.
- Place containers of cold food on ice for serving to make sure they stay cold.
- It's particularly important to keep raw oysters and cooked shrimp platters refrigerated. Don't serve them if refrigeration is not possible.



Source: <http://www.fightbac.org/>



# Cook

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- Cook it right
- Microwave musts
- Keep it hot
- Boil and bubble



## Notes to Instructor

Cooking food safely is a matter of degrees! Foods are properly cooked when they reach a high enough internal temperature to kill the harmful bacteria that cause foodborne illness. How does your safe cooking know-how measure up?

## Background

### Cook It Right

Food is safely cooked when it reaches a high enough internal temperature to kill the harmful bacteria that cause illness as measured with a food thermometer. Use a clean food thermometer to measure the internal temperature of food to make sure foods are cooked all the way through. Refer to the Safe Cooking Temperatures:

Fin Fish – 145 degrees F or flesh is opaque & separates easily with a fork

Shrimp, Lobster, Crabs – flesh pearly & opaque

Clams and Oysters – shells open during cooking

Leftovers – 165 degrees F

### Microwave Musts

When cooking in a microwave oven, make sure there are no cold spots in food because bacteria can survive there. For best results, cover food, stir and rotate for even cooking. If there is no turntable, rotate the dish by hand once or twice during cooking. Observe stand times.

### And Keep It Hot

When serving up hot food buffet-style, remember... On a buffet table, hot food should be kept at 140°F or higher. Keep food hot with chafing dishes, slow cookers and warming trays.

When bringing hot soup, chili or crab dip to an outdoor party... Keep it all piping hot before and during serving.

Transport hot foods in insulated thermal containers. Keep containers closed until serving time.

### Boil and Bubble

Bring sauces, soups and gravies to a boil when reheating.

Source: <http://www.fightbac.org/>



## Cooking Methods - Fish

- 10-Minute Rule
- Dry Heat
  - baking, grilling, broiling
- Moist Heat
  - oven steaming, poaching, steaming
- Frying
  - pan-frying, deep-frying



### Notes to Instructor

Supplemental materials includes a Fish Cooking Chart. Your fish cooking chart provides you with some ideas for which fish work well for different cooking methods. For example, Mahi-mahi is a medium fatty fish. It works well for grilling or broiling. Snapper is a white, lean fish and it can be prepared by poaching, stewing, baking, broiling, grilling, or frying. Give examples of each method of cooking. Oily fish should not be used in recipes where a lot of oil is added. Picture is of a tilapia fillet with skin off.

### Background

It's not always necessary to thaw seafood before cooking depending on how you will be preparing it. If thawing isn't necessary, simply double the cooking time. But if you'll be coating, rolling or stuffing or if the fish is in a block then you'll need to defrost it to make it easier to handle.

The "10-Minute Rule" is a good guide when cooking seafood. It applies to baking, broiling, steaming, poaching, and barbecuing fillets, steaks or whole fish. Do not apply the 10 minute rule to microwave cooking or deep-frying and it does not replace recommended temperature guidelines.

1. Measure the fillet or steak at its thickest point. If the fish is stuffed or rolled, measure it after stuffing or rolling.
2. Cook for 10 minutes per inch thickness, at 400° – 450°F, turning the fish halfway through the cooking time. For example, a 1-inch fish steak should be cooked five minutes on each side for a total of 10 minutes. Pieces of fish less than 1/2-inch thick do not have to be turned over.
3. Add five minutes to the total cooking time if you are cooking the fish in foil or if the fish is cooked in a sauce.
4. Double the cooking time (20 minutes per inch) for frozen fish that has not been defrosted.

You can cook fish in a variety of ways. It is important not to overcook fish. This makes fish tough and destroys flavor. Cooking times vary with each fish and cut. Fish is done when the flesh becomes opaque and flakes easily at the thickest part. Most fish will continue cooking for 1 to 2 minutes after being removed from the heat, so plan for this in the cooking time.

Dry heat includes baking, grilling and broiling.

When baking fish it is important to keep the fish moisturized. Rinse fish and pat dry. Season as desired. You can also choose to stuff whole fish. Drizzle fish with oil.

When broiling fish, place fish, one-inch thick or less, 2-4 inches from the source of heat. Fish thicker than 1-inch should be placed 5 to 6 inches away from the heat. Seafood with low fat content -- like grouper, flounder and tilapia -- should be basted when cooking with a dry heat method such as broiling and baking.

Moist heat includes oven steaming, poaching, steaming and braising.

Poaching is a great way of keeping the moisture in fish and refers to the technique of cooking food slowly in a simmering liquid. This liquid is usually flavored or seasoned and that flavor transfers to the fish. Rinse fish steaks and pat dry. Place in saucepan (to fit the size/amount of fish). Add enough poaching liquid to barely cover fish. Bring liquid to a simmer over medium heat—do not boil, which causes fish to break apart. Adjust heat to keep the liquid simmering. Cook until center is opaque and flakes easily. Remove fish with slotted spatula. Remove skin, bones.

Frying is another method. Pan-fry or sauté: Fry fillets in 1/8-inch of oil for 3 to 6 minutes per side or until golden and fish flakes easily. Thickness of fillets will determine the cooking time. Deep fry: Place fish in single layer in deep kettle or saucepan and cook in enough fat to cover and permit fish to move freely; do not crowd. Generally the temperature of the oil should be 365 degrees F. Cook for 2 to 3 minutes or until golden brown. When cooking multiple batches, always allow the temperature of the oil to return to 365 degrees F before adding more fish.

Source: Doris Hicks, DE Sea Grant and Clemson Univ Cooperative Extension, Safe Handling of Seafood and Florida Department of Agriculture and Consumer Services



## Cooking Methods - Shrimp

- **Dry Heat**
  - baking, grilling, broiling
- **Moist Heat**
  - poaching, steaming, boiling
- **Frying**
  - pan-frying, deep-frying



### Notes to Instructor

Picture is of different types of cleaned shrimp.

### Background

Shrimp can be boiled, broiled, baked, grilled, fried and used in casseroles, salads and pasta dishes. All shrimp work equally well with each method. Shrimp cook quickly in a very short amount of time!!! Shrimp will continue cooking when removed from the heat source, so take that into consideration. This is why directions may say to immerse in ice water or serve immediately, depending on recipe and end use of shrimp. Shrimp are done as soon as the shells turn red. Shrimp become opaque and firm when fully cooked. Don't overcook as this will result in loss of moisture which affects texture and taste. It takes from 3 to 5 minutes to boil or steam one pound of medium-sized shrimp.

#### Broiling and grilling shrimp

This normally takes 1-2 minutes on each side, or 2-4 minutes total cooking time.

Lower forms of heat (such as steaming) take a little longer but not too much longer.

Remember that Royal Red shrimp and Rock shrimp usually take half the time to cook of other shrimp varieties, so watch closely.

Peeled and deveined shrimp will be cooked in 3 to 5 minutes.

#### Steaming Shrimp

Shrimp cook in 3 to 5 minutes.

#### Boiling Shrimp

Bring 4 cups water (with seasonings) for each pound of shrimp to a boil. Add shrimp, reduce heat. Cover and simmer for 3-4 minutes per pound of shrimp. Cooking time will vary according to size of shrimp. Be careful to avoid overcooking.

#### Frying

Pan-fry or sauté: Shrimp 7 to 9 minutes.

Deep fry: Breaded shrimp until golden brown in oil that is approximately 365 degrees F.



## Cooking Methods– Clams & Oysters

- **RAW**
  - no cooking
- **Dry Heat**
  - baking, grilling, broiling
- **Moist Heat**
  - steaming, boiling, in soups
- **Frying**
  - pan-frying, deep-frying



### Notes to Instructor

Always save the clam/oyster juice, it helps to flavor soups and chowders. You can freeze it if you like. The FDA recommends the shucked oysters be boiled or simmered for at least 3 minutes, fried in oil for at least 3 minutes at 375 degrees F, or baked at 450 degrees F for at least 10 minutes. Picture is of an oyster on the half shell (oyster served raw).

### Background

If you are serving them raw, pull the top shell off and display the flesh on the lower shell.

Clams and oysters become opaque and firm when fully cooked. Don't overcook as this will result in loss of moisture which affects texture and taste.

### Broiled

Shucked clams and oysters will be cooked in 3 to 5 minutes. Seafood with lower fat content -- like shrimp, scallops, clams and oysters -- should be basted when cooked with a dry heat method such broiling or baking.

### Steaming

Oysters and clams should be steamed until their shells open completely. Steam for 4-9 minutes from the start of steaming or boil for 3-5 minutes after they open. Use small pots to steam shellfish. If too many shells are cooking at once, it's possible the centers won't cook thoroughly. Discard any clams or oysters that do not open during cooking. Closed shells indicate they may not have gotten enough heating.

### Frying

Pan-fry or sauté: Shucked oysters and clams for 3 to 5 minutes.

Deep fry: Breaded oysters and clams until golden brown in oil that is approximately 365 degrees F.

Source: Florida Department of Agriculture and Consumer Services



## Cooking Methods - Crabs & Lobsters

- **Dry Heat**
  - baking, grilling, broiling
- **Moist Heat**
  - steaming, boiling, parboiling



### Notes to Instructor

Picture is of a cooked whole blue crab and the process of taking it apart for eating. The pictures are timed (animated) to start 3 seconds after the previous picture. You can increase or decrease this time based on your preference needed.

### Background

#### Baking

Chefs will unanimously agree that baking a lobster tail is the easiest way to prepare it and leave it juicy! Pre-heat the oven to 450° F. Taking the tail, top-side down in your hand, cut away the under-shell following the sides and nearest the tail flipper as closely as possible to peel away the bottom layer; repeat with the under-membrane for presentation. Separate the meat from the shell all around by running a knife between them. We suggest pouring clarified butter, garlic, salt and pepper over the meat before wrapping it in foil and baking for approximately 12 minutes per 2 ounces.

#### Grilling

Something to be aware of if planning on grilling your lobster is that it is easy to dry out the meat. Fine Lobster recommends parboiling the lobster and brushing it with olive oil or butter before placing it on the grill. We recommend you butterfly, slice in half length-ways, or lay the meat on the tail shell then brush it with olive oil. Cook it meat-down on medium heat on the grill till golden brown, or approximately 5 to 7 minutes. A Fine Lobster recommendation is to cut the whole lobster tail in half lengthwise, and keeping lobster halves meat-side up pour some clarified butter and garlic over it and place them on a medium heat grill till opaque or about 8 to 10 minutes.

#### Broiling

Broiling a lobster tail is tricky, but the end result is delicious and beautiful. We recommend prepping it top-side up and cut away the top of shell to expose most of the meat as possible while leaving the sides intact (to hold in the juices). Wash with cool water and pat dry with paper towel; then drizzle in clarified butter, garlic, salt and pepper to taste. Simply place the tail on a pan and in the oven on broil, approximately 15 minutes per 5 ounces, but keep a close eye on your tail so you don't overcook and therefore dry out or burn! Consider parboiling the tail first and finishing it under the broiler for about 5–7 minutes to get that sweet and gorgeous golden finish.

#### Steaming

Steaming has virtually the same effects on the taste of the lobster as boiling, however there is less leaching and it leaves the meat very tender. Select a pot large enough to hold all of the lobster without crowding it, place a steaming rack and about two inches of seawater (or heavily salted water) in the bottom. Over high heat, bring it to a rolling boil, and add the live lobsters one at a time and cover. Steamed crabs turn bright red. Steam crabs 25 minutes when 2 to 3 dozen, depending on size, have been placed in a large crab pot. Steaming takes about ten minutes per pound (or allow 15 to 18 minutes for a 1.5 to 2 pound lobster), but halfway through ensure they are cooking evenly by shifting them around being careful of the hot steam.

#### Boiling

The easiest, most common way to cook a live lobster is by boiling as takes the least amount of time. Boiled lobsters or steamed crabs turn bright red. Start with a big pot and fill it with seawater (easy for those close to the ocean) or with water heavily salted, roughly about two gallons of water per three pounds of lobster. The best process is to place the live lobster head first into boiling water. An easy rule of thumb is to boil the lobster for about eight minutes per 1 to 1 ½ pounds, and 1 minute more for each additional ½ pound per lobster (or allow 10 minutes for a one pound lobster with an extra 3 minutes for each additional pound, starting to time when the water returns to a boil). Boiling a lobster is considered one of the best ways to enjoy the full flavor. We recommend boiling if you want to use the meat in another recipe or to eat right after cooking for the meat is easier to remove from the shell.

#### Parboiling

By partially cooking the lobster meat, parboiling is a great technique when one wants refrigerate or freeze a whole lobster to finish cooking it later. This works well to later include the meat in a dish or finish it on a grill—it avoids drying it out. Parboiling follows the same rules as boiling, however only cook the lobster for about two minutes per pound instead of eight. Be sure when done to immediately rinse it in cold water to stop the cooking process. Unless leaving the meat in the whole shell to freeze or refrigerate and finish boiling later, it is advised you remove the meat as this is when it will be easiest.





## Questions

