

Oyster Aquaculture

Harvesting & Handling



Clams



Oysters



CLAMS VS OYSTERS

CLAMS	OYSTERS
Harvest All Year	Harvest All Year Long (On Lease only)
Harvest : sunrise – sunset	Winter : sunrise - sunset Summer : sunrise – 11:00 am (rapid cool)
Any Size Farm-Raised Clams	Any Size Farm-Raised Oyster
Temper Product at $\leq 68^{\circ}\text{F}$ (To acclimatize clams slowly)	No Tempering (oysters must be stored at 45°F)



Vibrio vulnificus

- Vibrio v. is a bacterium that naturally occurs in the warm coastal waters.
- To healthy individuals it is not dangerous
- However to people with certain medical conditions the consumption of **raw** or **under-cooked** oysters can be fatal

High-risk individuals are those with medical conditions such as:

- ◇ Liver Disease
- ◇ Diabetes
- ◇ Stomach Disorders
- ◇ Cancers
- ◇ Iron Overload Diseases



PHP – post harvest processing

V. vibrio is easily denatured through various PHP processes such as:

- Cooking
- Freezing
- Other Processing



However, **People Love Raw Oysters!**



Vibrio vulnificus

Management Plan

- The National Shellfish Sanitation Program (NSSP) and the Interstate Shellfish Sanitation Conference (ISSC) implemented guidelines for oyster harvesting based on a **Risk per Serving** time-temperature matrix.
- This matrix was developed around the **thermo-phillic** nature of *Vibrio*.

- Since Vibrio thrives in warmer temperatures, the guidelines for oyster collection are based on minimizing high temperature exposure.



TAGS

- Harvester
- Dealer
- Bulk
- Green

HARVESTER TAG

HARVESTER SPL # or AQ # _____

DATE OF HARVEST _____ TIME OF HARVEST _____

Time of Refrigeration, if applicable _____

Legal Harvest Area Name or # _____

Specific Harvest Location Name or # _____

Type of Shellfish _____ Quantity of Shellfish _____

**THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY
OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS**

HARVESTER TAG

FOR SHUCKING ONLY BY A CERTIFIED DEALER OR POST HARVEST PROCESSING ONLY

Harvester SPL # or AQ # _____

Date of Harvest _____ Time of Harvest _____

Time of Refrigeration if applicable _____

Legal Harvest Area Name or # _____

Specific Harvest Location Name or # _____

Type of Shellfish _____

Quantity of Shellfish _____

**THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY
OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS**

**NAME OF FIRM
MAILING ADDRESS OF FIRM
CITY, STATE & ZIP CODE**

**PERISHABLE
KEEP
REFRIGERATED**

Phone # (---) -----

Cert. # FL ####-SS, SO, RP, OR PHP¹ Wholesale # WD _____

ORIGINAL SHIPPERS CERT. NO. IF OTHER THAN ABOVE: _____

DATE OF HARVEST: _____

HARVEST AREA, NAME, OR #: _____

TYPE OF SHELLFISH: _____

QUANTITY OF SHELLFISH: _____

SELL BY: _____

**THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY
OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS**

**NAME OF FIRM
MAILING ADDRESS OF FIRM
CITY, STATE & ZIP CODE**

**PERISHABLE
KEEP
REFRIGERATED**

Phone # (---) -----

Cert. # FL ####-SS, SO, RP, OR PHP¹ Wholesale # WD _____

ORIGINAL SHIPPERS CERT. NO. IF OTHER THAN ABOVE: _____

DATE OF HARVEST: _____

HARVEST AREA, NAME, OR #: _____

TYPE OF SHELLFISH: _____

QUANTITY OF SHELLFISH: _____

SELL BY: _____

**THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY
OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS**

BULK AQUACULTURE TAG

**ALL SHELLFISH CONTAINERS IN THIS LOT HAVE THE SAME DATE AND AREA OF
HARVEST, AS WELL AS THE SAME INTENDED USE**

HARVESTER SPL # or AQ # _____

DATE OF HARVEST _____ TIME OF HARVEST _____

Time of Refrigeration, if applicable _____

Legal Harvest Area Name or # _____

Specific Harvest Area Name or # _____

Type of Shellfish _____ Quantity of Shellfish _____

Product consigned to certified shellfish processor # _____

**THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY
OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS**

BULK AQUACULTURE TAG

**ALL SHELLFISH CONTAINERS IN THIS LOT HAVE THE SAME DATE AND AREA OF
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DATE OF HARVEST _____ TIME OF HARVEST _____

Time of Refrigeration, if applicable _____

Legal Harvest Area Name or # _____

Specific Harvest Area Name or # _____

Type of Shellfish _____ Quantity of Shellfish _____

Product consigned to certified shellfish processor # _____

**THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY
OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS**



White Tags



White tags – are used for product that may be consumed **raw** or cooked.



Green Tags

FLORIDA GREEN TAGS

This is known as Restricted Use Product.

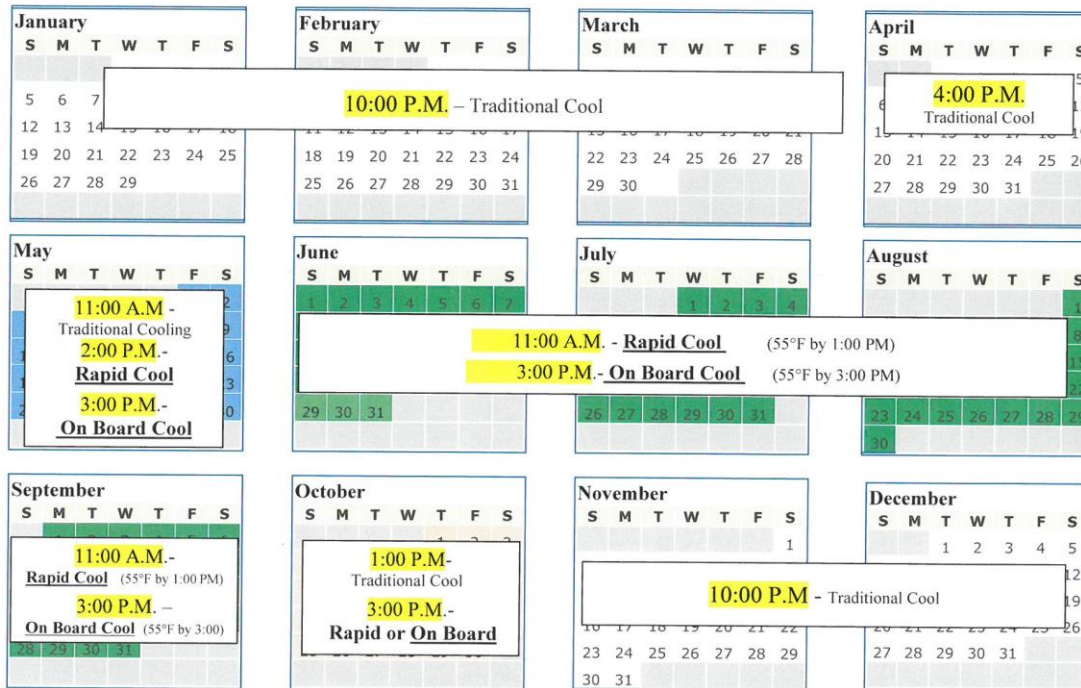
Oysters tagged with a green tag must be subject to further processing* *before* distribution to retail or food service establishments.



2015-2016

Oyster Harvest Calendar

2015-2016 TIME LIMITS FOR OYSTER HARVEST (White Tag)



- Oyster must be in cooler of Certified Shellfish Dealer by 10:00 PM for Traditional Cool (sunrise to sunset harvest, 8 hrs to 55°F)
- Oyster must be in cooler of Certified Shellfish Dealer by 11:00 AM for Traditional Cool or 2:00 PM for Rapid Cool
- Oyster must be in cooler of Certified Shellfish Dealer by 11:00 AM for Rapid Cool or 3:00 PM for On Board Cool (no traditional)
- Oyster must be in cooler of Certified Shellfish Dealer by 1:00 PM for Traditional Cool or 3:00 PM for Rapid Cool or On Board Cool

ANY OYSTERS NOT HARVESTED AND DELIVERED WITHIN THESE TIME LIMITS MUST BE GREEN TAGGED - "FOR SHUCKING ONLY BY A CERTIFIED DEALER" OR "FOR POST HARVEST PROCESS ONLY"



Harvest Options: June – Sept.



Oysters must be: **In Cooler** **At 55°F**



Onboard Ice Slurry



Onboard Ice Slurry (cont.)

- Once cooled shellstock must be stored on ice
- Enough ice surrounding the bag to hold oysters at $\leq 55^{\circ}\text{F}$.



Onboard Ice Slurry (cont.)

On-Board Cooling Log



Calibrated Thermometer



Tags

ON-BOARD MONITORING RECORD					
Operator/Harvester:		Product Description: Oysters		Intended Use: To be eaten raw or cooked	
		Method of storage and distribution: On-board cooling			
Critical Limit: Time of Shellstock Exposure					
SL-1,000 Shellfish Handling: Add ice if insufficient to cool shellstock. *CORRECTIVE ACTION: If the 1 PM deadline for receiving is not met then the affected product must be rejected or segregated & labeled with a green tag preprinted with the language "FOR SUCKING BY A CERTIFIED DEALER" OR "FOR POST HARVEST PROCESSING ONLY"					
Revised 5/05/2015					
(Weekly) Reviewed:			Date: / /		
Bag #	DATE:	Harvest Area:			
		Initial Time	@ Dealer	@ Harvest Area	White/ Green or Blue Tag
		Time Temp	Time Temp	Time Temp	
		am/pm	°F	am/pm	°F
		Initial Time	@ Dealer	@ Harvest Area	White/ Green or Blue Tag
		Time Temp	Time Temp	Time Temp	
		am/pm	°F	am/pm	°F
		Initial Time	@ Dealer	@ Harvest Area	White/ Green or Blue Tag

HARVESTER TAG	
HARVESTER SPL # or AQ # _____	
DATE OF HARVEST _____	TIME OF HARVEST _____
Legal Harvest Area Name or # _____	
Specific Harvest Location Name or # _____	
Type of Shellfish _____	Quantity of Shellfish _____
Cooling option (circle one): Trad _____	
THIS TAG IS REQUIRED OR IS RETAGGED A	

1) Time of Refrigeration: _____	1) Record time shellstock placed in ice slurry dip
2) Time Reaches ≤55°F: _____	2) Record time middle of bag reaches ≤55°F.
3) Temperature: _____	3) Record actual temperature taken
	*1 hr. is maximum time oysters not cooled

Transportation



Certified Dealers -

RECORDS

(Additional Records During Vv months)

- **HACCP Plan** – for shellstock indicating Vv management plan
- **Receiving** – to identify any green tagged product received
- **Sales** – to identify any green tagged product sold
- **Daily Log** – Cooler temperature and Shellstock temperatures after Rapid Cool (1:00 pm) or On-Board Cooling (3:00 pm)



RECORDS — Track Green tagged product

SHELLSTOCK RECEIVING RECORD								
Firm Name:			Product Description:					
Firm Location:			Method of storage and distribution: Under refrigeration					
			Intended Use: To be eaten raw or cooked					
<u>Critical Limits:</u>			<ul style="list-style-type: none"> Only receive shellstock harvested from approved waters and properly tagged by a licensed harvester or certified dealer. Only receive shellstock/shucked product from certified dealers listed in current Interstate Certified Shellfish Shippers List (ICSSL). Shellfish previously refrigerated must be received in refrigerated vehicles at 45°F or less*. Frozen shellfish must be received frozen at 0°F or less*. 					
<u>Corrective Action:</u>			<ul style="list-style-type: none"> Reject any product that does not meet critical Limits. 					
ALL SHELLSTOCK WILL BE SHIPPED ADEQUATELY ICED, IN A CONVEYANCE PRE-CHILLED AT OR BELOW 45 AMBIENT AIR TEMPERATURE								
Date of Receipt	Harvester ID	Species & Quantity	Shellstock		Green Tag (Shucking or PHP) √	Shipping Temp*	Initials	Corrective Actions
			Harvest Area	Harvest Date				

SHELLFISH SALES RECORD							
Firm Name & Location:							
<u>Critical Limits:</u> <ul style="list-style-type: none"> During the months of <u>December through March</u> shellstock oysters must be delivered to the certified dealer by 10:00 PM. During the month of <u>November</u> shellstock oysters must be delivered to the certified dealer by 5:00PM. During the month of <u>April</u> shellstock oysters must be delivered to the certified dealer by 4:00PM. During the months of <u>May, June and July</u> shellstock oysters must be delivered to the certified dealer by 11:30 AM. During the months of <u>August, September and October</u> shellstock oysters must be delivered to the certified dealer by 12:00 PM. <p>Oysters received directly from harvesters which fail to meet the above specified delivery times must be labeled by harvester with a green tag labeled "for shucking only" or "for PHP only" (<u>Green Tag</u>).</p> <ul style="list-style-type: none"> All shellstock shipped must be in a conveyance pre-chilled at or below 45 F° ambient air temperature 							
Date Sold	Sold To: Name & Address	Quantity	Species		Shellstock		Purchased From: Harvester SPL/KL/AQ# or Dealer Cert. #
			Species	Green Tag (v)	Harvest Area	Harvest Date	



Risks of Exposed Oysters



No more than 4 hours out of the water or cooler



Aquaculture Activity Records

Blue Tags

(under consideration for replants)

BULK AQUACULTURE TAG
ALL SHELLFISH CONTAINERS IN THIS LOT HAVE THE SAME DATE AND AREA OF HARVEST

HARVESTER SPL # or AQ # _____

DATE OF HARVEST _____ **TIME OF HARVEST** _____

Time of Refrigeration, if applicable _____

Legal Harvest Area Name or # _____

Specific Harvest Area Name or # _____

Type of Shellfish _____ Quantity of Shellfish _____

Consigned to _____

THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY
OR IS DETACHED AND THEREAFTER KEPT ON FILE FOR 90 DAYS

Aquaculture Activity Logs

OYSTER SHELLSTOCK REPLANT RECORD												
Name:					AQ#							
Harvest					Replant / Re-submerge					For Sale		I N I T I A L S
Date	Blue Tag Date	Total # Bags/ Baskets	Harvest Area	Lease #	Blue Tags					White Tags		
					# of containers to be Blue Tagged	Replant Lease #	Date of Replant	Date in 2 weeks	Was product removed before 2 weeks (Y/N)	# of containers to be White tagged	Time in Cooler	



Illness Reports- (examples)

Vibrio Illnesses Prompt Closure of Samish Bay's Oyster Harvest Until Sept. 30

BY **NEWS DESK** | AUGUST 6, 2014

Confirmation that shellfish from Samish Bay in northwest Washington state was the source of at least one illness, and possibly three others, caused by the bacterium *Vibrio parahaemolyticus*, has prompted the state's health department to close commercial oyster harvesting in the bay until Sept. 30.

Oysters Recalled for Potential Vibrio Contamination

BY **NEWS DESK** | AUGUST 10, 2014 The Connecticut Department of Agriculture is recalling its Cape Neddick/Blue Point Oysters for potential *Vibrio parahaemolyticus* contamination.



Notice of Illness Outbreaks – Shellfish Closures and Recalls

- [Washington State Recall](#)
March 19, 2015
- [Washington Closure and Recall](#) Hammersley Inlet
December 9, 2014
- [New York DEC Temporarily Closes Shellfish Areas](#) Town of Huntington, Suffolk County September 4, 2014
- [Washington State Closure & Recall](#) August 8, 2014
- [Louisiana Closure of Shellfish Growing Areas](#) August 8, 2014
- [New York Closures](#) May 23, 2014
- [Oregon Coos Bay Oyster Company Recall](#) February 3, 2014
- [Texas Copano Bay Closure & Recall](#) January 8, 2014
- [Mississippi Closure of Area 2 B for Oyster Harvesting](#) December 18, 2013
- [Mississippi Closure of Shellfish Growing Areas](#) November 19, 2013
- [Louisiana Precautionary Closure of Shellfish Growing Areas](#) October 4, 2013
- [Mississippi Precautionary Closure of Shellfish Growing Areas](#) October 4, 2013
- [Massachusetts Notice of Closure, Outbreak & Recall](#) September 9, 2013
- [Massachusetts Notice of Closure, Outbreak and Recall](#) August 30, 2013
- [Connecticut Notice of Closure & Recall](#) August 4, 2013
- [Washington State Oyster Recall](#) August 2, 2013
- [Washington State Recall](#) July 26, 2013
- [New Jersey DOH Notice of Advisory](#) Shell Rock Beds in Delaware Bay July 23, 2013
- [New Jersey Administrative Order 2013-08](#) Suspension of Oyster Harvest from Shell Rock Beds
July 19, 2013
- [Virginia Emergency Shellfish Closure # 093-V1](#) July 12, 2013
- [Massachusetts Closure/Outbreak Notice](#) July 12, 2013
- [NYS DEC Temporary Emergency Closure Press Release - July 1, 2013 June 28, 2013](#)
- [NYS DEC Temporary Emergency Closure May 9, 2013](#)
- [NJ Administrative Order No. 2013-05](#) April 11, 2013
- [NJ Administrative Order No. 2013-04](#) April 4, 2013
- [Louisiana DHH Reopens Molluscan Shellfish Harvest Area 11](#) March 15, 2013
- [Louisiana Harvest Area 11 Closure](#) February 27, 2013
- [NJ Administrative Order No. 2013-01](#) January 28, 2013
- [Louisiana West Cove in Calcasieu Lake \(Harvest Area 30\) DHH Recalls Oysters](#) January 4,



Certified Dealers

**5-L Mandates that All Shellfish Must be Delivered
Directly to a Certified Dealer**



Certified Dealers

- Harvesters may only sell to Certified Dealers
- Only Dealers certified as a **Shucker Packer** (SP) are allowed to shuck shellfish





HARVESTER TAG

HARVESTER SPL # or AG # _____

DATE OF HARVEST _____ TIME OF HARVEST _____

Time of Refrigeration, if applicable _____

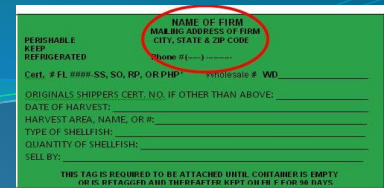
☐ Legal Harvest Area Name or # _____

Specific Harvest Location Name or # _____

Type of Shellfish _____ Quantity of Shellfish _____

THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS

White vs Green



NAME OF FIRM
MAILING ADDRESS OF FIRM
CITY, STATE & ZIP CODE
Phone # () - - - - -
FAX # () - - - - -

PERSONABLE
KEEP
REFRIGERATED

Cert. # FL ###-SS, SO, RP, OR PHP _____ Wholesale # _____ WD _____

ORIGINALS SHIPPERS CERT. NO. IF OTHER THAN ABOVE: _____

DATE OF HARVEST: _____

HARVEST AREA, NAME, OR #: _____

TYPE OF SHELLFISH: _____

QUANTITY OF SHELLFISH: _____

SELL BY: _____

THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS

Florida uses 2 different color tags –

- White tags – used for product that may be consumed **raw or** on the **½ shell**.
- Green tags - used for product that must be further processed* **before** distribution to retail or food service

* Only Dealers certified as Shucker-Packagers (SP) are allowed to shuck green tagged product.



3 Cooling Options

- **Traditional** – product in within time/temp matrix and cooled to 55 ° within 8 hours
- **Rapid Cool** – product in cooler by 11 am and cooled to 55 ° by 1 pm (2 hours)
- **On-Board with Ice Slurry** – product in ice slurry cooler 1 hour after harvest and cooled to 55 °, stored on ice.



Produce a safe harvest!



Farm-raised oyster images courtesy Auburn University.



Oyster Harvest



Don't forget to fill out tags properly!

