



# Washington Razor Clam Management

## Setting the 2016-17 Season

The following presentation is designed to provide you with general information on the management of the recreational razor clam fishery in Washington and specific information on what to expect for the 2016 -17 season.

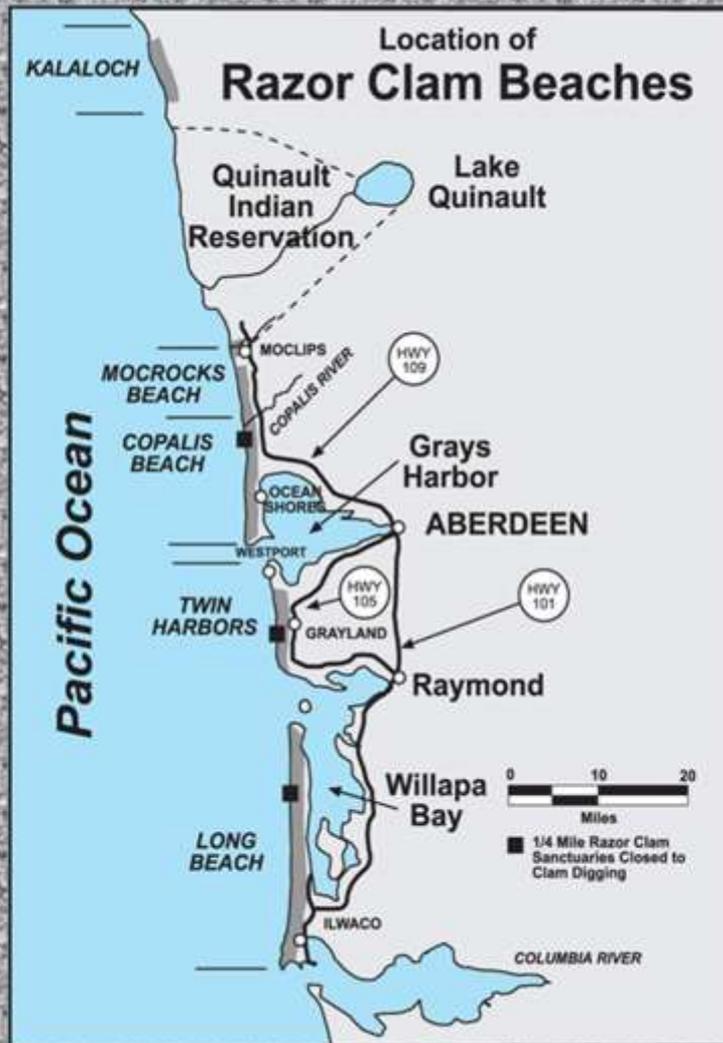
Thanks for taking the time to view this presentation. Any specific comments or questions can be directed to : [razorclams@dfw.wa.gov](mailto:razorclams@dfw.wa.gov)

# What's Up?

## CONTENTS OF THIS PRESENTATION

- Review of the 2015-16 Season
- Marine Toxin Update / ORHAB
- Status of Razor Clam Stocks
- Tribal Co-management
- How to Dig Razor Clams video **New!**
- Digging with Kids
- Season Options for 2016-17

This presentation is designed to update you on the issues listed above and hopefully spur you to let us know what you think about our management of razor clams and how we can change or improve the work we do. Thanks for taking the time to read through the following information.



Washington's razor clam habitat is divided into five management beaches. From the south, they are: Long Beach (from the Columbia River North Jetty to end of Leadbetter Point); Twin Harbors (from the northern shore of Willapa Bay to the Grays Harbor South Jetty); Copalis (from the Grays Harbor North Jetty to the Copalis River); Mocrocks (from the Copalis River to the south boundary of the Quinault Indian Reservation – just south of the Moclips River); Kalaloch (from Olympic National Park South Beach Campground to Brown's Point, just south of Olympic National Park Beach Trail # 3). Within these five management beaches there are a total of 58 miles of sandy beaches and prime habitat for the Pacific Razor Clam (*Siliqua patula*).



## Razor Clam Digging In Washington State

WDFW's goal is to provide a safe  
and enjoyable recreational experience,  
while still protecting the resource.

The razor clam fishery in Washington is not only a significant source of revenue for tourism-dependent businesses such as restaurants and motels, but also an important source of community identity and basis for tribal subsistence. Razor clam harvesting, cleaning, cooking, eating, and canning have been an important focus of family relationships and local culture in Washington coastal communities for many generations.

**FISH AND WILDLIFE COMMISSION**  
**POLICY DECISION**

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<b>POLICY TITLE:</b>	<b>Razor Clam Management</b>	<b>POLICY NUMBER:</b>	<b>POL-C3009</b>
<b>Cancels:</b>		<b>Effective Date</b>	January 4, 1997
		<b>Termination Date</b>	(if applicable):
<b>See Also:</b>		<b>Approved by:</b>	<u>/s/ Lisa Pelly</u> Fish and Wildlife Commission Chair

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**The management objectives for the razor clam fishery are:**

- Manage the razor clam resource on all coastal beaches for recreational use with a minor separate commercial fishery located only on detached spits of Willapa Bay.
  - Protect public health and safety.
  - Manage the resource to maintain stable and healthy populations.
  - Maximize recreational opportunity.
  - Provide a quality recreational experience.
  - Independently manage the razor clam populations on Kalaloch (*in cooperation with Olympic National Park*), Mocrocks, Copalis, Twin Harbors and Long Beach while considering the pertinent interactions of seasons, effort, opportunity and tribal allocations.
  - Provide for consistent commercial fishing opportunity that does not conflict with the recreational fishery.
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The fishery is managed by WDFW staff with specific guidance provided by the Washington Fish and Wildlife Commission; nine citizen members serving six-year terms who are appointed by the governor and confirmed by the Washington State Senate. For more information see: <http://wdfw.wa.gov/commission/>

In it's Policy C3009 the Fish and Wildlife Commission has provided seven objectives WDFW uses in managing this fishery.

Note that the management of the recreational razor clam fishery at Kalaloch occurs in cooperation with the Olympic National Park.

# 2015-16 Fishery Review



Average of  
14.2 clams  
per digger  
trip



327,500 digger trips

Harvest  
of 4.7  
million  
clams



Continuing issues with elevated levels of domoic acid in razor clams that cut short the 2014-15 recreational razor clam season, also delayed the start of the 2015-16 season. Copalis was the first beach where domoic acid levels fell below the action level and we finally begin digging on December 24, 2016. On January 7 digging got underway at Long Beach, but Mocrocks diggers had to wait until February 19 to proceed. The Twin Harbors beach was closed through the entire season.

## Washington Recreational Razor Clam

<i>20015-16 Season Totals</i>	<b>HARVEST</b>	<b>EFFORT</b>	<b>Average Daily Catch (clams/digger)</b>	<b>Total Digging Days</b>
<b>Long Beach</b>	2,689,735	187,261	14.0	94
<b>Twin Harbors</b>	0	0		0
<b>Copalis</b>	983,177	69,536	13.7	18
<b>Mocrocks</b>	992,831	70,747	13.6	26
<b>Kalaloch</b>	0	0		0
<b>TOTAL</b>	4,665,743	327,545	13.8	

Each of the five beaches is managed separately. The Total Allowable Catch (TAC) is determined for each beach using data collected in our annual summer razor clam stock assessment work (discussed more in the slides ahead). As a result, some beaches have more digging opportunities than others. The average daily catch during the 2016-17 season was close to the legal daily bag limit of 15 clams per person. It is always a good sign when over the course of the entire season most diggers can take home their limit of 15 razor clams - even with some occasional tough weather challenges. Note that the harvest listed here includes our estimates of wastage. The CPUE is calculated on the estimate of harvest, minus wastage.

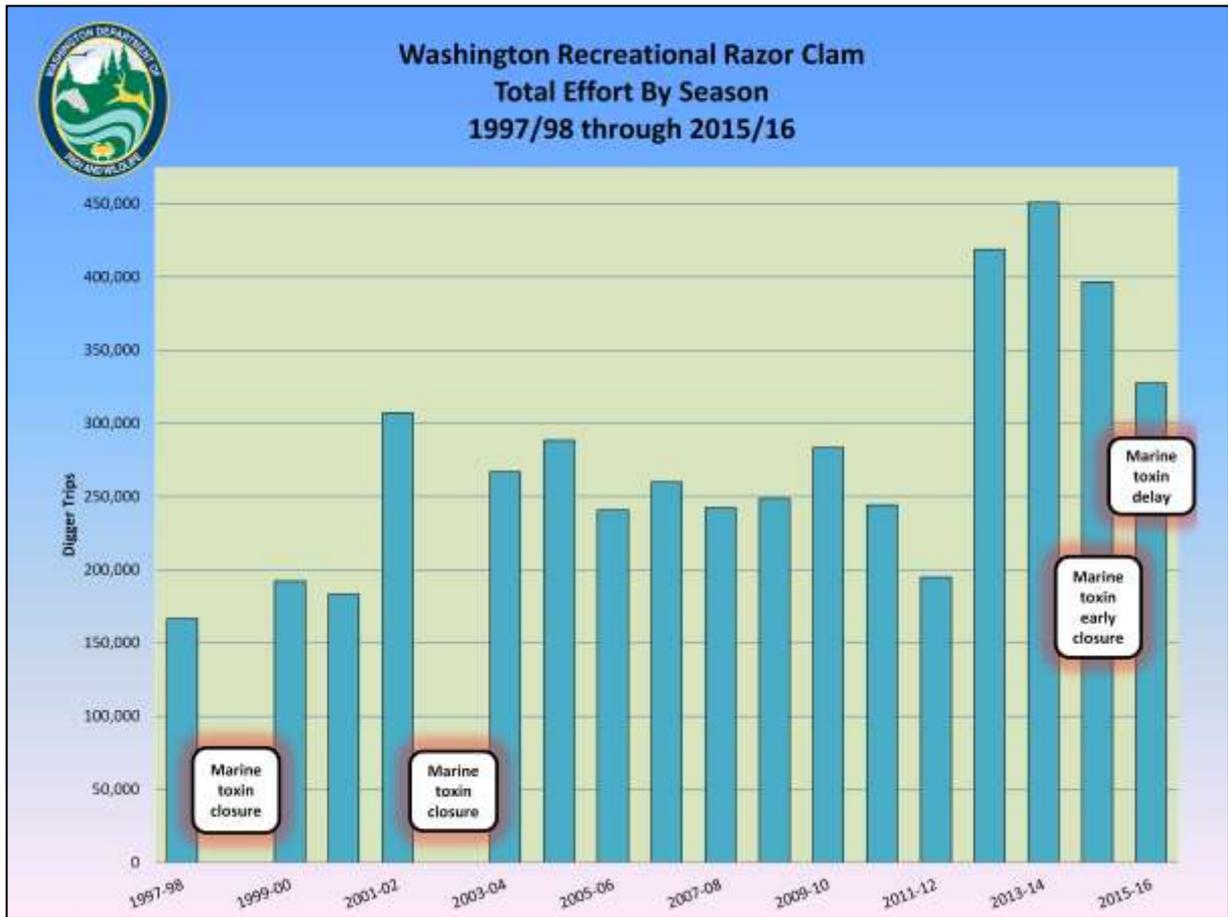


## Washington Recreational Razor Clam Fishery

### Days Open for Harvest / Season

Beach	2015-16	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09	2007-08	2006-07	2005-06	average
Long Beach	94	104	72	42	23	35	37	22	22	21	21	38
Twin Harbors	0	104	105	78	26	46	46	27	40	30	26	50
Copalis	18	21	24	28	13	15	24	24	11	7	18	19
Mocrocks	26	43	54	30	20	30	23	25	11	16	26	28
Kalaloch	0	0	0	0	3	12	17	0	0	11	18	6

Looking at the number of days open for digging over time (on each beach) you can see (with the exception of Twin Harbors) WDFW was able to “rescue” most of the 2015-16 season from the earlier closure due to elevated levels of the naturally occur marine domoic acid found in razor clam tissue.



We estimate there were a total of 327,500 digger trips during the 2015-16 season a very respectable total, given the fact that the season was very late getting started (due to elevated levels of domoic acid).

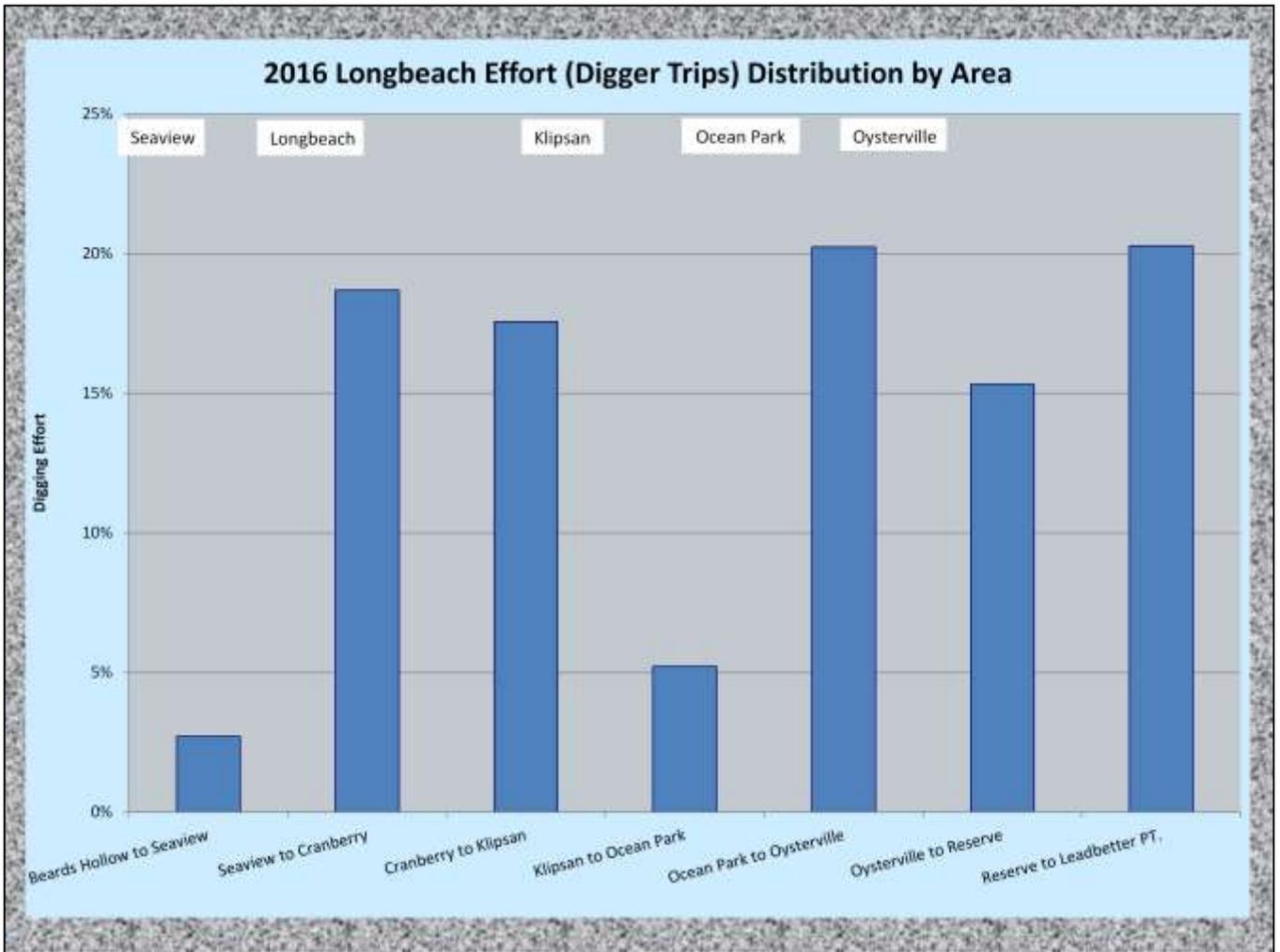
The 2015-16 season started:

- At Copalis on December 24, 2015
- At Long Beach on January 7, 2016
- At Mocrocks on February 13, 2016
- And Twin Harbors remained closed for the entire season.

Month	Long Beach	
October 2015	0 Days	Tue-Sun; Wed-Tue
November 2015	0 Days	Tue-Tue; Thu-Wed
December 2015	0 Days	Wed-Wed; Fri-Tues; Wed
January 2016	15 Days	Thu-Thu; Thu-Wed
February 2016	26 Days	everyday Feb. 4 thru March 31
March 2016	31 Days	everyday Feb. 4 thru March 31
April 2016	19 Days	Sun-Tues; Wed, Thu-Wed
May 2016	3 Days	Fri-Sun
Totals:	94 Days	

Because of the unusually abundant TAC (total allowable catch) at Long Beach and the late start to the season (January 7, 2016) due to elevated levels of domoic acid, WDFW implemented a unique harvest strategy. Starting February 4 and running through March 31 digging was allowed on one low tide of every day because the 15-clam limit is legally a DAILY bag limit and allowing digging twice each day would make enforcement of that provision impossible. Depending on the tide schedule, and when the “best” low tide was – digging was allowed either only AM or PM tides. This caused some confusion because this designated changed over this period. From Feb. 4 through Feb. digging was allowed on PM tides only; on March 1 digging was allowed on the AM tide only; on March 2 through March 10 digging was allowed on PM tides only; on March 11 through March 14 digging was allowed on AM tides only; on March 15 through March 23 digging was allowed on PM tides only; and finally on March 24 through March 31 digging was allowed on AM tides only. We found just a relatively small number of diggers utilizing the marginal low tides during this periods with mixed digging success.

As in the past, WDFW is committed to the protection of nesting snowy plovers on northern portions of Long Beach. The WDFW Coastal Shellfish budget has funded the daily placement (and retrieval) of sanicans in these intertidal areas to help diggers from entering the upland areas closed to human intrusion. Also, in 2016 agreed to limit Long Beach razor clam harvest in May on weekends in the first half of the month. That decision will be re-evaluated each season. In May there were only three weekend days during the first half of the month with good low tides.



This graph presents the data we collect to make estimates of the total number of diggers during each low tide that is open. The data is presented as the portion of the total effort distributed across the full beach, over the entire season.



A Snowy Plover nests in the dry sand.

### Watch for nesting birds

Nesting season for two federally protected shorebirds – the Snowy Plover and the Streaked Horned Lark – begins in spring when thousands of razor clam diggers are also on the beach. Wildlife managers ask that diggers take care to avoid disturbing these small birds by steering clear of their nesting areas. Both species are listed as threatened under the federal Endangered Species Act.

A Streaked Horned Lark chick sits in the dunes.



Watch your step: It would be easy to trample this Streaked Horned Lark nest and never know it.

### For more information, contact:

Washington Dept. of Fish and Wildlife  
48 Devonshire Rd.  
Montesano WA 98563  
(360) 249-4628



## Razor Clamming and Nesting Birds

### How you can help protect Snowy Plovers and Streaked Horned Larks



Conflicts between razor clam enthusiasts and endangered nesting shore birds continues to be an important issue for resource managers. This is especially true on the razor clam beaches that are adjacent to critical nesting areas. These include the south end of the Twin Harbors beach and the northern portion of Long Beach. During the 2014-15 season WDFW developed a pamphlet designed to inform razor clammers of step they can take to avoid impacting *snowy plovers* and *steaked horned larks*. Razor clam diggers need t heed the closed area signs to help avoid further restrictions.



**RAZOR CLAM DIGGING IS A HIGHLY POPULAR** pursuit that draws hundreds of thousands of people to Washington's coastal beaches every year. Most diggers can harvest their limit of clams in an hour or two and still have plenty of time to enjoy beachcombing, kite-flying and a wide range of other surfside activities.

While on the beach, clam diggers should be aware that two bird species – the Snowy Plover and the Streaked Horned Lark – nest in the soft sand above the high tide line. Both birds are listed as threatened under the federal Endangered Species Act.

Normal nesting season generally runs from April 1 through September 15. During this time, it is very easy to disturb the birds and their vulnerable young.

### How to protect nesting birds

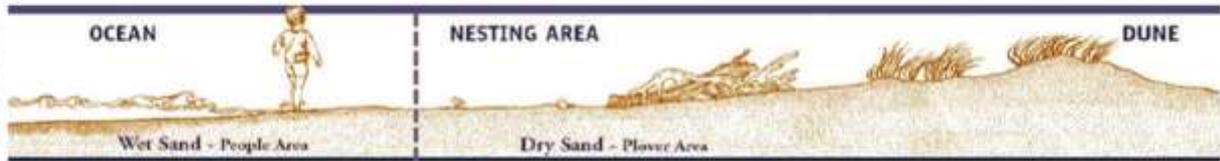
- **Beach driving:** When driving to clam-digging areas, enter the beach only at designated access points and stay on the hard-packed sand below or near the high tide line.
- **Follow the rules:** Observe all agency regulations, and never walk past "nesting birds" signs into the upper parts of the beach.
- **Keep dogs on a leash:** Don't allow your dog to play in the dunes or soft sand where birds may be nesting.
- **Avoid the dunes:** Birds often nest in these areas. If you need to take a break from clam digging, use the restrooms located at most beach-access points.
- **Kites:** Do not fly kites near nesting areas. To small shorebirds, kites look like predators.
- **Move on:** Limit the amount of time you spend near nesting areas. Once you've finished digging, move to another location.



### PRIME NESTING AREAS

Active nesting areas for Snowy Plovers and Streaked Horned Larks have been identified on parts of Twin Harbors Beach and on the Long Beach Peninsula near Leadbetter Point.

Wildlife managers urge clam diggers to take special care to avoid disturbing nesting birds in these areas.



To help mitigate impacts of birds in these sensitive areas shellfish managers agreed to reduce the number of planned digging days during the month of May – restricting digging to weekend days only Long Beach (and would have also at Twin Harbors – had it been open). You are encouraged to download the plover pamphlet at; [http://wdfw.wa.gov/fishing/shellfish/razorclams/clam\\_digging\\_snowy\\_plovers.pdf](http://wdfw.wa.gov/fishing/shellfish/razorclams/clam_digging_snowy_plovers.pdf) Feel free to make copies of this document and distribute them to your clammy friends or from your business.

Month	Twin Harbors	
October 2015		
November		
December		
January		
February		
March		
April		
May 2016		
Totals:		Days

**The Twin Harbors beach was closed through the entire 2015-16 season due to elevated levels of domoic acid in razor clam meat tissue.**

Continuing issues with elevated levels of domoic acid in razor clams that cut short the 2014-15 recreational razor clam season, results in the closure of the Twin Harbors beach was closed through the entire 2015-16 season. As you will note in the graphics showing the trends in domoic acid levels through out the 2015-16 season for each beach, Twin Harbors razor clam were exposed the highest level of domoic acid at the peak of the spring 2015 harmful algae bloom event. Why this occurred is unclear, other than we also know that the levels of the diatom species that produces domoic acid were also highest in our surf zone water samples taken off Twin Harbors beach. We know from previous events that razor clams can take as long as 18 months to deplete domoic acid for their meat tissue. The good news is that during the summer of 2016 – soon after the majority of the Twin Harbors clams spawners – the domoic acid in clams from this beach dropped below the 20 ppm action level.

Month	Copalis	
October 2015	0 Days	
November 2015	0 Days	
December 2015	3 Days	Thu-Sat
January 2016	3 Days	Fri-Sat; Fri
February 2016	2 Days	Fri-Sat
March 2016	3 Days	Fri-Sun
April 2016	5 Days	Thu-Sat; Mon-Tue
May 2016	2 Days	Fri-Sat
<b>Totals:</b>		<b>18 Days</b>

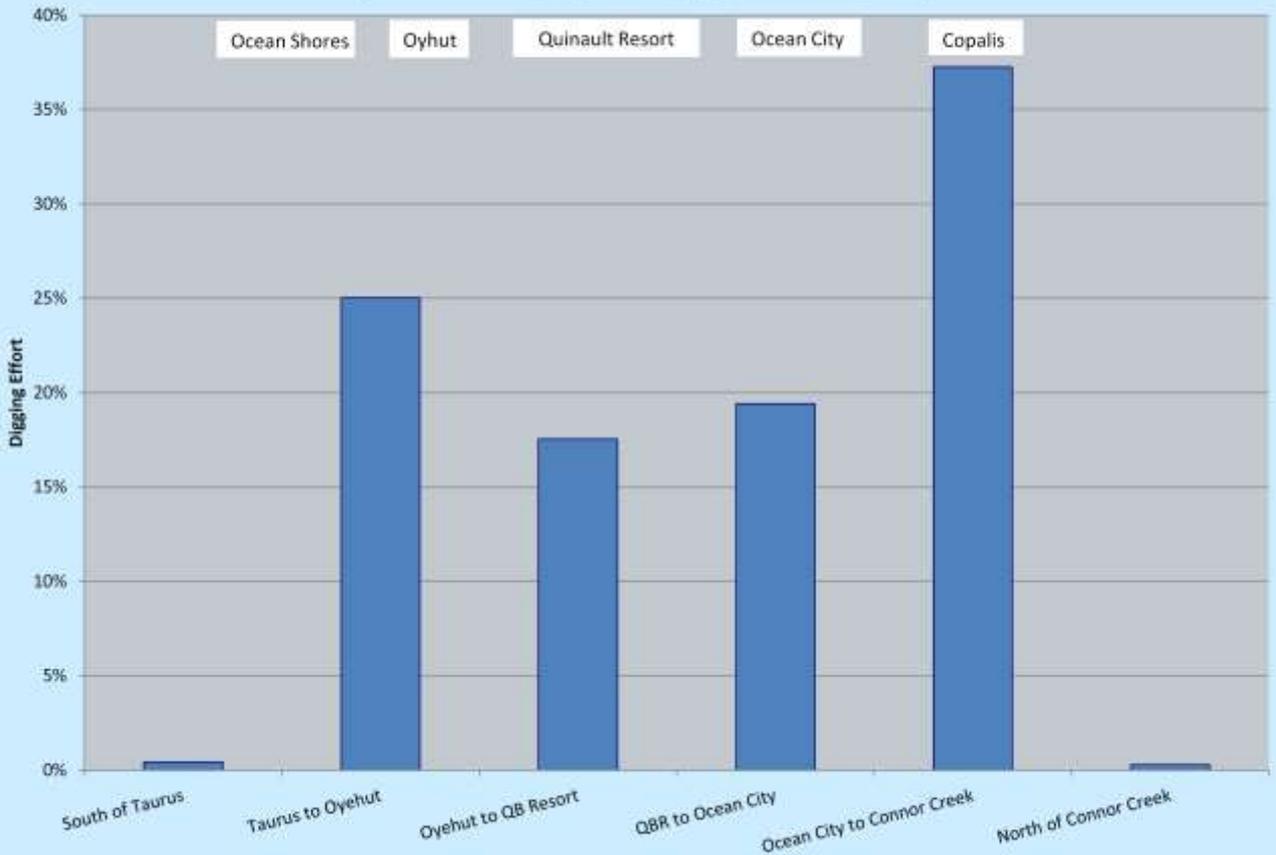
As many are aware, the Copalis razor clam management beach is one of three beaches WDFW co-manages with tribal governments. The Quinault Indian Nation (QIN) has federally adjudicated fishing rights on this beach and we share the total allowable catch (TAC) 50/50 with the QIN. More details on state/tribal co-management of razor clams in Washington are found later in this presentation.

Late in the 2012-13 season while reviewing state harvest totals on Copalis and Mocoorks, a biometrician discovered an error in the calculations used by the state to estimate the daily recreational harvest. Biologists determined this error had gone undetected for a number of years and resulted in the reporting of harvest totals that in general underestimate the true total – on all beaches. Since that time WDFW and the Quinault Indian Nation (QIN) have come to an agreement on a five-year schedule WDFW will use to return to a portion of the clams that were inadvertently dug in excess of the state’s harvest share from Copalis and Mocoorks.

During the 2015-16 season some of the harvest schedules on Copalis and Mocoorks were a result of efforts to share weekend days between state and tribal fishers. In some cases diggers saw Mocoorks and Copalis open on alternate weekend days. This is one tool that state and tribal fishery managers can use to provide weekend opportunities to both state and tribal fishers.

One question we often hear is why we offer so few digging days at Copalis. The answer is simple and is mostly due to the number of diggers who prefer this beach and choose to dig here whenever it is open. With an average of 3,900 diggers on Copalis per day is much higher than the next highest Mocoorks, with 1/3 fewer diggers per day.

### 2016 Copalis Effort (Digger Trips) Distribution by Area



This graph presents the data we collect to make estimates of the total number of diggers during each low tide that is open. The data is presented as the portion of the total effort distributed across the full beach, over the entire season.

Month	Mocrocks	
October 2015	0 Days	
November 2015	0 Days	
December 2015	0 Days	
January 2016	0 Days	
February 2016	3 Days	Fri-Sun
March 2016	10 Days	Sat-Tue; Fri-Sun; Fri-Sun
April 2016	6 Days	Thu, Fri, Sun; Sat, Mon, Tue
May 2016	7 Days	Mon-Thu; Fri-Sun
<b>Totals:</b>	<b>26 Days</b>	

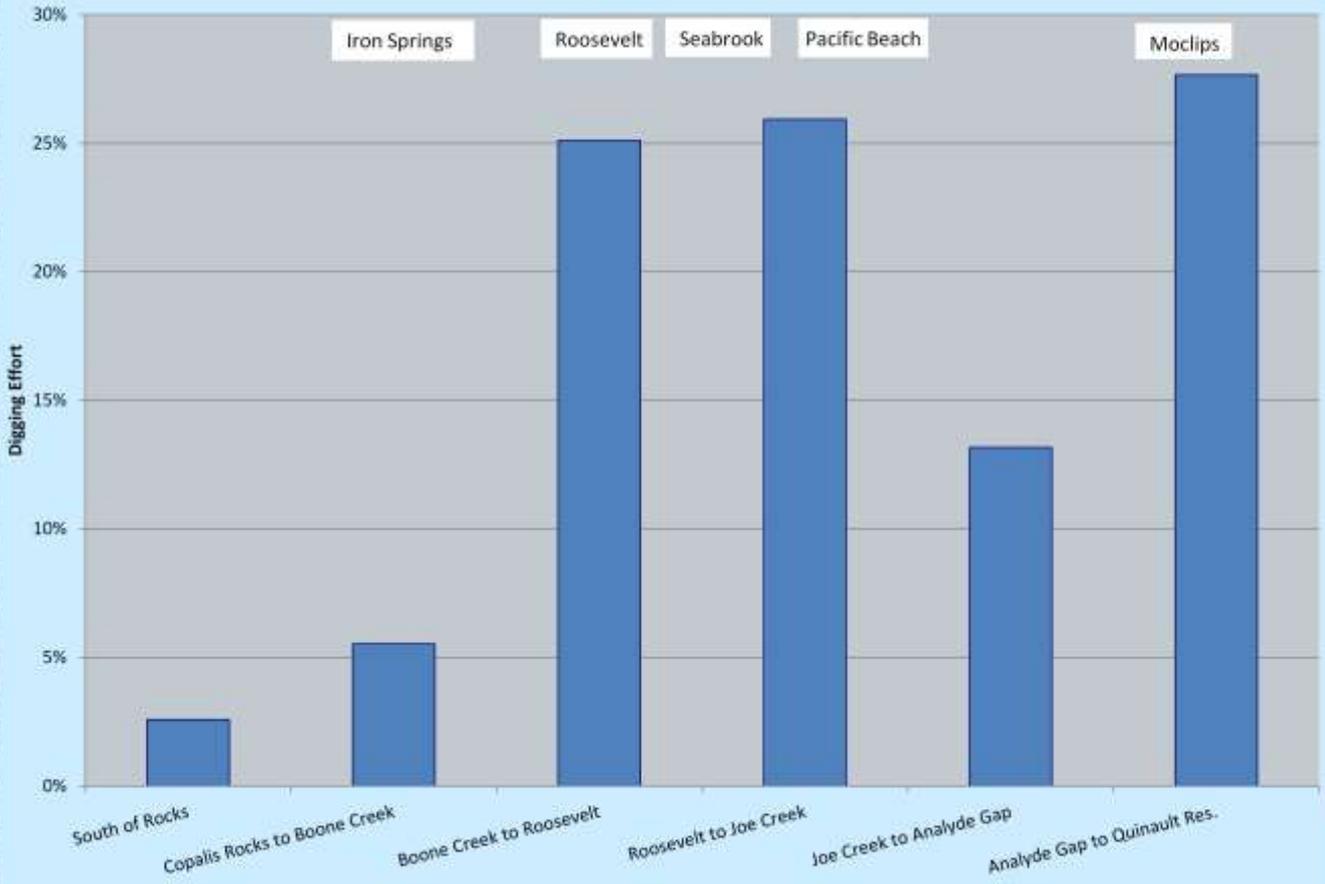
As many are aware, the Mocrocks razor clam management beach is one of three beaches WDFW co-manages with tribal governments. The Quinault Indian Nation (QIN) has federally adjudicated fishing rights on this beach and we share the total allowable catch (TAC) 50/50 with the QIN. More details on state/tribal co-management of razor clams in Washington are found later in this presentation.

Late in the 2012-13 season while reviewing state harvest totals on Copalis and Mocrocks, a biometrician discovered an error in the calculations used by the state to estimate the daily recreational harvest. Biologists determined this error had gone undetected for a number of years and resulted in the reporting of harvest totals that in general underestimate the true total – on all beaches.

Since that time WDFW and QIN have come to an agreement on a five-year schedule WDFW will use to return to a portion of the clams that were inadvertently taken by the state fishery - in excess of the state's harvest share from Copalis and Mocrocks.

During the 2015-16 season some of the harvest schedules on Copalis and Mocrocks were a result of efforts to share weekend days between state and tribal fishers. In some cases diggers saw Mocrocks and Copalis open on alternate weekend days. This is one tool that state and tribal fishery managers can use to provide weekend opportunities to both state and tribal fishers.

### 2016 Mocoorks Effort (Digger Trips) Distribution by Area



This graph presents the data we collect to make estimates of the total number of diggers during each low tide that is open. The data is presented as the portion of the total effort distributed across the full beach, over the entire season.

# KALALOCH

Since the 2012-13 season, WDFW and Olympic National Park have jointly made a decision to forgo recreational harvest at Kalaloch.

Discussions are on-going re: future harvest opportunities. We are interested in your input after you have reviewed the Kalaloch stock assessment results found later in this document.

Since the 2012-13 season, WDFW and Olympic National Park have jointly made a decision to forgo recreational harvest at Kalaloch. These closures have provided the population on this beach the best chance to recover from the decline it has experienced since 2009.

The Quinault Indian Nation (QIN) and the Hoh Tribe both have federally adjudicated fishing rights on Kalaloch beach and we share the total allowable catch (TAC) 50/50 and these two tribes. More details on state/tribal co- management of razor clams in Washington are found later in this presentation. In addition, because Kalaloch falls within the boundaries of the Olympic National Park - WDFW works very closely with staff at Olympic National Park in the joint management of the Kalaloch razor clam recreational fishery.

Please be sure to check out pages 55,56 and 57 for the good news of changes in the razor clam population at Kalaloch and our request for your input re: future potential seasons on this beach.

# MARINE TOXINS



Now, onto a topic that can really play havoc with shellfish harvesting – as experienced razor clammers know all too well.

Naturally occurring Harmful Algal Blooms (HAB) produce toxins that are ingested by razor clams and then concentrate in their meat tissue.

The razor clam fishery has been closed three times for a full season and many times for shorter periods, due to levels of two marine toxins in razor clam tissue that have exceeded state and federal action levels. Coast-wide since 1992, a total of 18% of all potential harvest days have been cancelled due to marine toxins produced by HAB events.

# Domoic Acid

## Amnesic Shellfish Poisoning (ASP)

- Produced by a diatom (*Pseudo-nitzschia sp.*)
- Domoic acid - neurotoxin
- Nausea, dizziness, memory loss
- Stroke-like symptoms that can lead to death
- No antidote
- Not destroyed by cooking/freezing
- Not easily detected

The marine toxin domoic acid has been the most prevalent toxin affecting razor clams harvest along the Washington coast. It is produced by a naturally occurring member of the marine plankton community – a diatom – named *Pseudo-nitzschia*. Recent research has led to better understanding of where these diatoms originate and what oceanographic and weather conditions must be present to allow them to move closer to shore and affect razor clam populations. Since 1992 when domoic acid was first found in razor clam meat tissue a total of 18% of planned razor clam digging opportunities have been lost due to high marine toxin levels, with the vast majority due to domoic acid.

This slide details the dangers domoic acid – in high levels – presents. More details can be found on the WDFW web site at :

[http://wdfw.wa.gov/conservation/research/projects/algal\\_bloom/index.html](http://wdfw.wa.gov/conservation/research/projects/algal_bloom/index.html)

# PSP Toxin

## Paralytic Shellfish Poisoning (PSP)

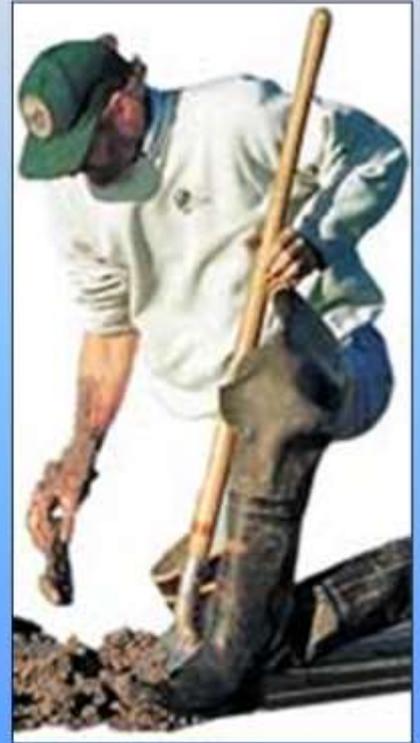
- Produced by a dinoflagellate (*Alexandrium sp.*)
- Saxitoxin- neurotoxin
- Numbness, finger tingling/toes, lips
- Can paralyze the diaphragm and lead to death
- No antidote
- Not destroyed by cooking/freezing
- Not easily detected

The toxin that causes paralytic shellfish poisoning (PSP) is produced by another naturally occurring member of the marine plankton community. This species is the dinoflagellate named *Alexandrium*. PSP has historically been less of a problem for the razor clam fishery. However, in past seasons there have been razor clam closures due to PSP.

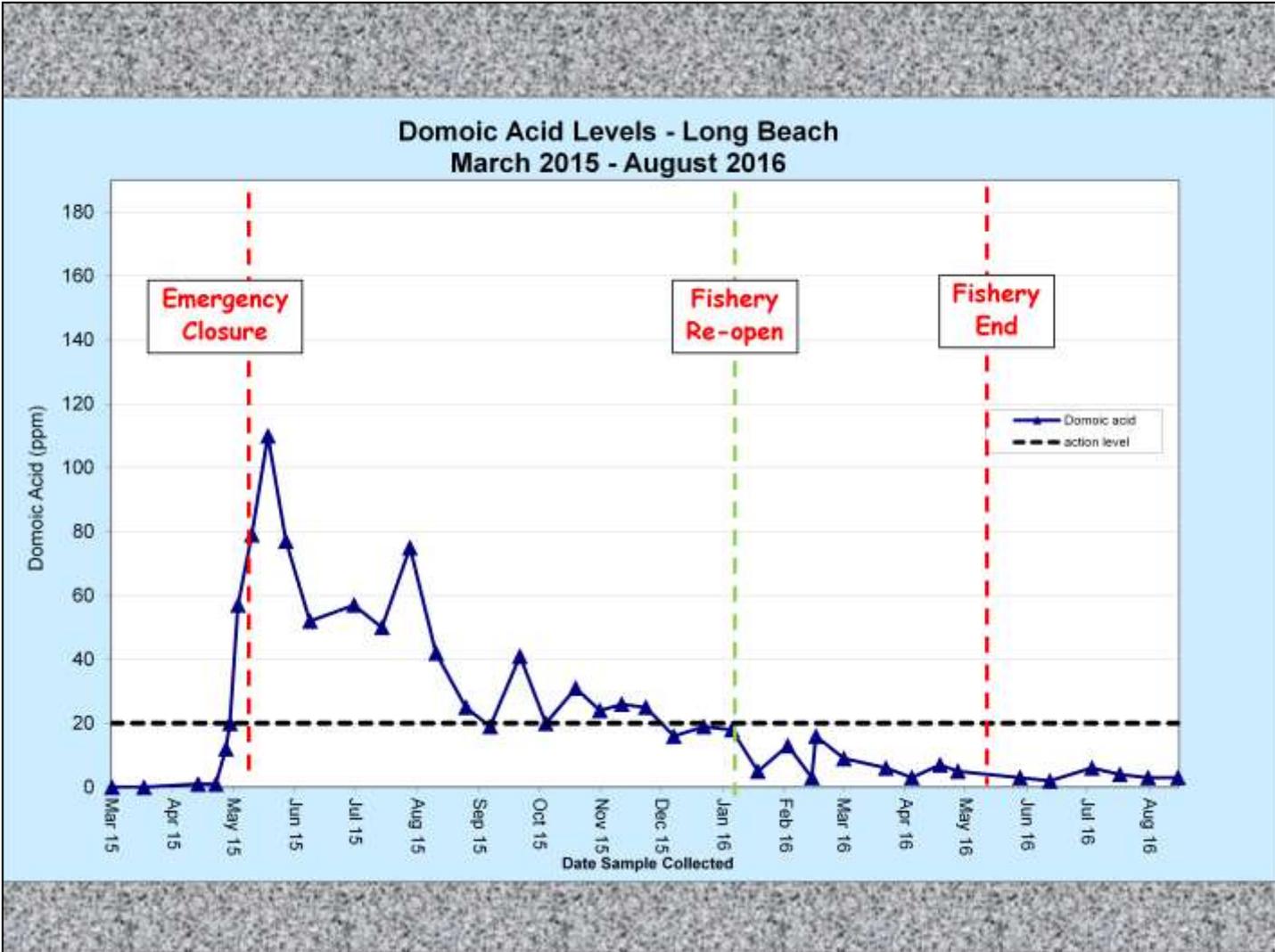
# WDFW is required to collect samples per strict WDOH protocol:

To open or remain open, ALL samples must test below  
The action level...

- Samples from 3 areas per beach.
- 12 adult clams per sample.
- 2 collections 7-10 days apart (often means digging on poorer tides).
- Last collection as close to opening as possible.
- In-season collections also 7-10 days apart.



As a result of concern for the health of the many people who enjoy razor clams, WDFW works closely with staff at the Washington Department of Health (WDOH) to collect and transport to the WDOH lab (north of Seattle in Shoreline) for processing. These clams are collected on a strict schedule that allows for the final sample to be collected as close to the day of each period razor clamming is open. This is the reason our openers are always announced as tentative, until final marine toxin results are available.”



Following the May 2015 closure of all coastal beaches to both state and tribal fisheries, WDFW and WDOH continued to sample razor clams for the presence of marine toxins. The next several slides show the history of the results of that testing through the most recent tests in August 2016. This data will be updated on our web site as new results become available. Note the ending date indicated is the normal spring time end to each fishery. Recall, Long Beach and Twin Harbors will be closing earlier in May than other beaches due to concerns with nesting snowy plover, a threatened species.

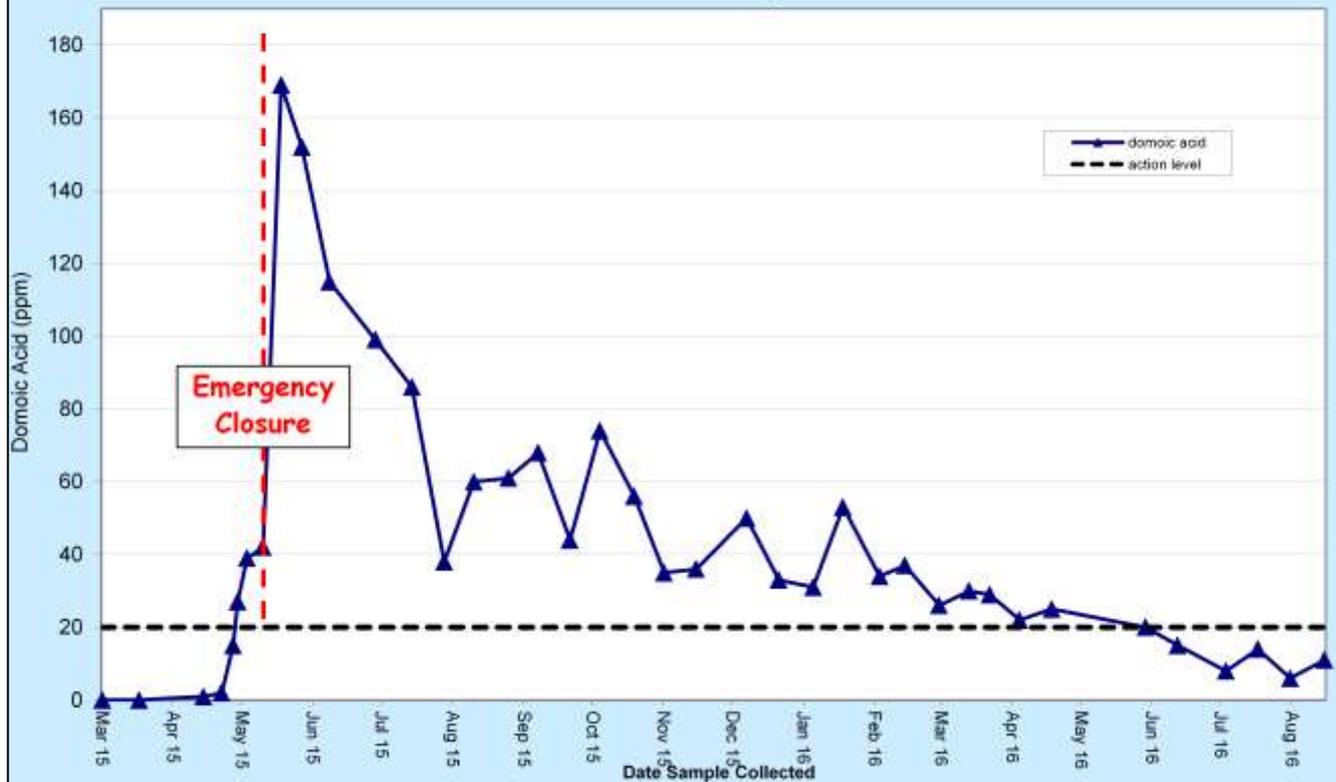
The emergency closure at Long Beach began on May 8, 2015 and the fishery re-opened on January 7, 2016, The 2015-16 season ended at Long beach on May 7, 2016.

Recall, before a beach can be opened for the harvest of razor clams, WDOH protocol requires that all razor clam samples collected from that beach must test under the action level (20 ppm for domoic acid; 80 µg/100g for PSP; and 16 µg/100g for DSP) on both of the two required sample collections.

The most recent levels can be found at: [http://wdfw.wa.gov/fishing/shellfish/razorclams/domoic\\_levels.html](http://wdfw.wa.gov/fishing/shellfish/razorclams/domoic_levels.html)

For more information about domoic acid, see: <http://www.doh.wa.gov/CommunityandEnvironment/Shellfish.aspx>

### Domoic Acid Levels - Twin Harbors March 2015 - August 2016



Following the May 2015 closure of all coastal beaches to both state and tribal fisheries, WDFW and WDOH continued to sample razor clams for the presence of marine toxins. The next several slides show the history of the results of that testing through the most recent tests in August 2016. This data will be updated on our web site as new results become available. Note the ending date indicated is the normal spring time end to each fishery. Recall, Long Beach and Twin Harbors will be closing earlier in May than other beaches due to concerns with nesting snowy plover, a threatened species.

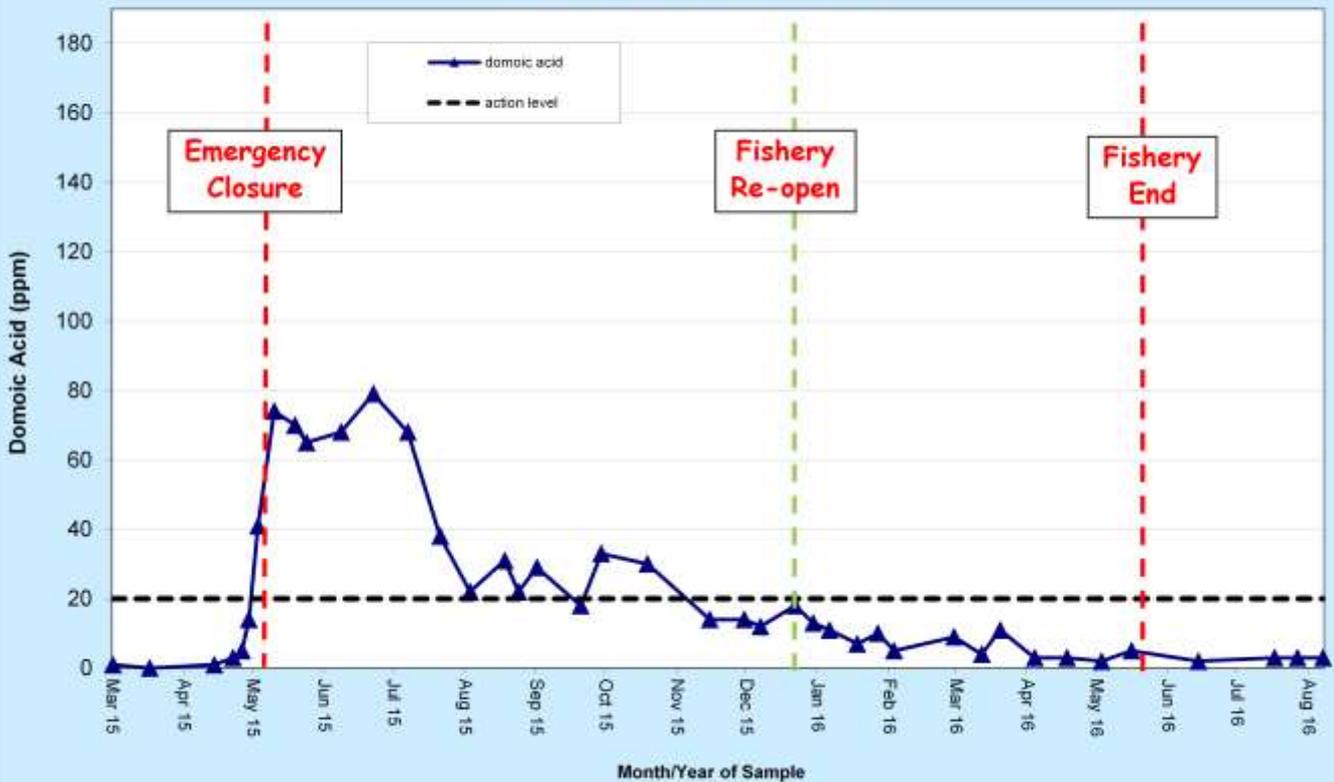
The emergency closure at Twin Harbors began on May 8, 2015 and the fishery did not re-open through the normal end of the 2015-16 season.

Recall, before a beach can be opened for the harvest of razor clams, WDOH protocol requires that all razor clam samples collected from that beach must test under the action level (20 ppm for domoic acid; 80 µg/100g for PSP; and 16 µg/100g for DSP) on both of the two required sample collections.

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For more information about domoic acid, see: <http://www.doh.wa.gov/CommunityandEnvironment/Shellfish.aspx>

### Domoic Acid Levels - Copalis March 2015 - August 2016



Following the May 2015 closure of all coastal beaches to both state and tribal fisheries, WDFW and WDOH continued to sample razor clams for the presence of marine toxins. The next several slides show the history of the results of that testing through the most recent tests in August 2016. This data will be updated on our web site as new results become available. Note the ending date indicated is the normal spring time end to each fishery. Recall, Long Beach and Twin Harbors will be closing earlier in May than other beaches due to concerns with nesting snowy plover, a threatened species.

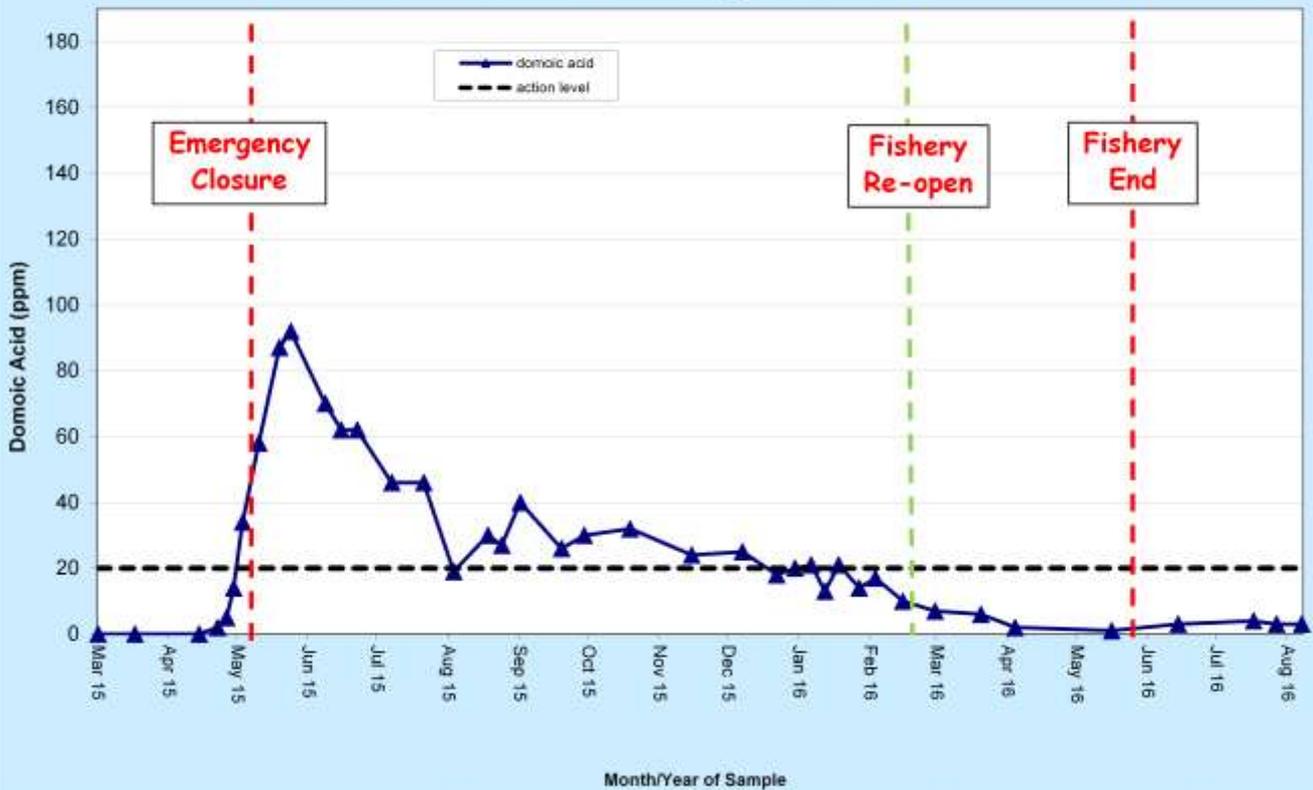
The emergency closure at Copalis began on May 8, 2015 and the fishery re-opened on December 24, 2016. The 2015-16 season ended at Copalis on May 21, 2016.

Recall, before a beach can be opened for the harvest of razor clams, WDOH protocol requires that all razor clam samples collected from that beach must test under the action level (20 ppm for domoic acid; 80 µg/100g for PSP; and 16 µg/100g for DSP) on both of the two required sample collections.

The most recent levels can be found at: [http://wdfw.wa.gov/fishing/shellfish/razorclams/domoic\\_levels.html](http://wdfw.wa.gov/fishing/shellfish/razorclams/domoic_levels.html)

For more information about domoic acid, see: <http://www.doh.wa.gov/CommunityandEnvironment/Shellfish.aspx>

### Domoic Acid Levels - Mocoorks March 2015 - August 2016



Following the May 2015 closure of all coastal beaches to both state and tribal fisheries, WDFW and WDOH continued to sample razor clams for the presence of marine toxins. The next several slides show the history of the results of that testing through the most recent tests in August 2016. This data will be updated on our web site as new results become available. Note the ending date indicated is the normal spring time end to each fishery. Recall, Long Beach and Twin Harbors will be closing earlier in May than other beaches due to concerns with nesting snowy plover, a threatened species.

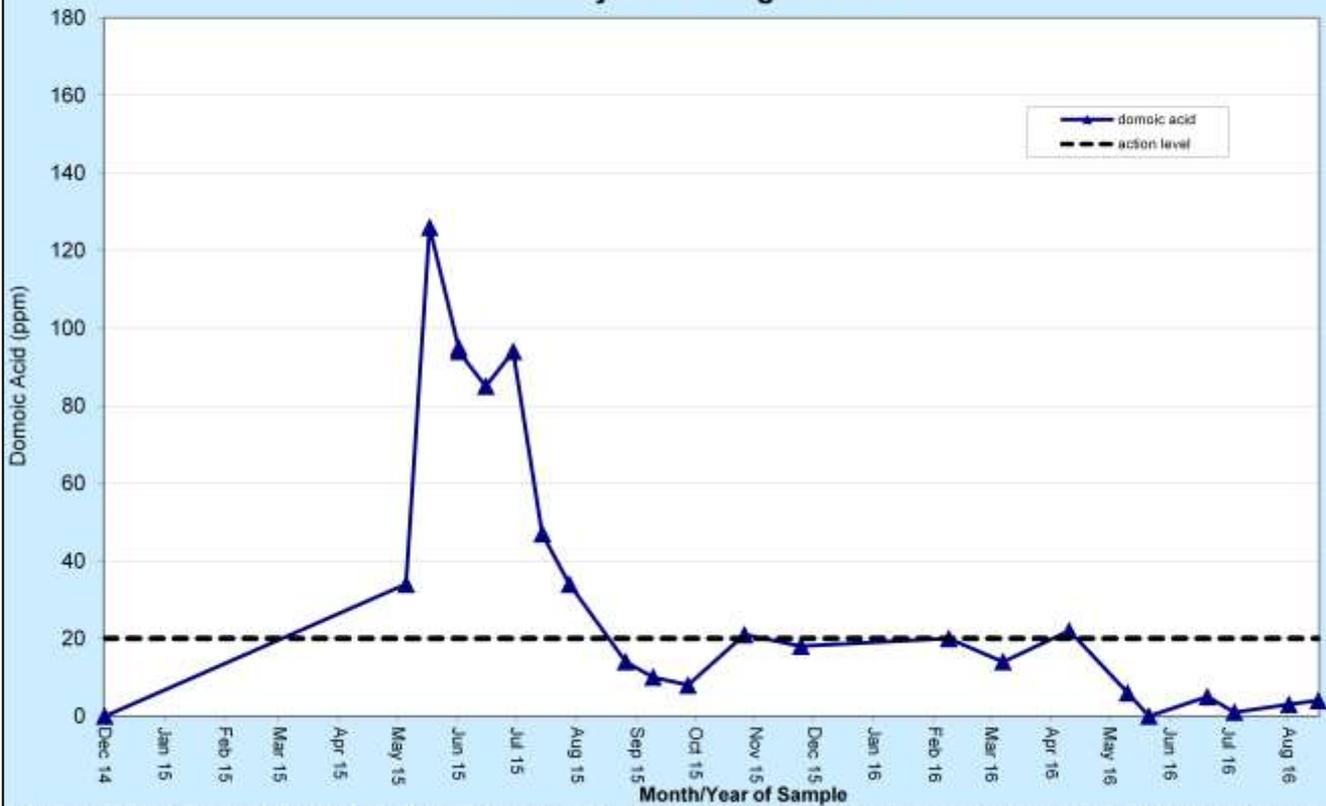
The emergency closure at Mocoorks began on May 8, 2015 and the fishery re-opened on February 17, 2016. The 2015-16 season ended at Copalis on May 22, 2016.

Recall, before a beach can be opened for the harvest of razor clams, WDOH protocol requires that all razor clam samples collected from that beach must test under the action level (20 ppm for domoic acid; 80 µg/100g for PSP; and 16 µg/100g for DSP) on both of the two required sample collections.

The most recent levels can be found at: [http://wdfw.wa.gov/fishing/shellfish/razorclams/domoic\\_levels.html](http://wdfw.wa.gov/fishing/shellfish/razorclams/domoic_levels.html)

For more information about domoic acid, see: <http://www.doh.wa.gov/CommunityandEnvironment/Shellfish.aspx>

### Domoic Acid Levels - Kalaloch January 2015 - August 2016



Following the May 2015 closure of all coastal beaches to both state and tribal fisheries, WDFW and WDOH continued to sample razor clams for the presence of marine toxins. The next several slides show the history of the results of that testing through the most recent tests in August 2016. This data will be updated on our web site as new results become available. Note the ending date indicated is the normal spring time end to each fishery. Recall, Long Beach and Twin Harbors will be closing earlier in May than other beaches due to concerns with nesting snowy plover, a threatened species.

Because of concerns with very low population abundance of harvestable sized clams Kalaloch was not open during the 2014-15 season when domoic acid peaked. During the 2015-16 season domoic acid levels were either above the action levels of right at the action level, just enough to keep this beach closed to harvest.

Recall, before a beach can be opened for the harvest of razor clams, WDOH protocol requires that all razor clam samples collected from that beach must test under the action level (20 ppm for domoic acid; 80 µg/100g for PSP; and 16 µg/100g for DSP) on both of the two required sample collections.

The most recent levels can be found at: [http://wdfw.wa.gov/fishing/shellfish/razorclams/domoic\\_levels.html](http://wdfw.wa.gov/fishing/shellfish/razorclams/domoic_levels.html)

For more information about domoic acid, see: <http://www.doh.wa.gov/CommunityandEnvironment/Shellfish.aspx>



Olympic Region Harmful Algal Blooms

# ORHAB PARTNERSHIP

The ORHAB project is bringing knowledge to the local communities on the Olympic peninsula of the Washington State coast, empowering the tribes and state managers to make scientifically-based decisions about managing and mitigating harmful algal bloom (HAB) impacts on coastal fishery resources.

The ORHAB Partnership was formed in June 1999 by local residents and coastal communities' in response to seemingly random closures of the shellfisheries due to outbreaks of marine biotoxins (Paralytic Shellfish Poison, PSP) and demonic acid contamination of razor clams. It became clear that in order to manage these outbreaks there was a need to better understand underlying dynamics of these disruptive HAB events. These research efforts, made possible by federal funding from NOAA, have been underway since the summer of 2000.



For more information see : [http://wdfw.wa.gov/conservation/research/projects/algae\\_bloom/index.html](http://wdfw.wa.gov/conservation/research/projects/algae_bloom/index.html)

The impacts of harmful algal blooms (HAB) on razor clam fisheries along the coast of Washington State was the impetus that brought together Seattle based NOAA HAB researchers, University of Washington oceanographers and marine algae experts, state and tribal fishery managers and human health experts to form a successful partnership - the **Olympic Region Harmful Algal Bloom (ORHAB)** project. Beginning in 2000 with five-years of funding from NOAA's Monitoring and Event Response for Harmful Algal Blooms ([MERHAB](#)) Program the ORHAB partnership provided for a host of activities that included the necessary scientific equipment and for the unique training of local technicians as HAB specialists. With the end of federal funding and primary reliance on state dollars generated by a surcharge on recreational shellfish licenses, the focus of the partnership is primarily on HAB event prediction and monitoring. These state funds provide for two HAB specialists, one working for WDFW and the other for the University of Washington. In addition, funding from the Quinault Indian Nation (QIN) provides a third HAB specialist who works for QIN. While employed by separate agencies these local experts work closely together to monitor for HAB events along the entire Washington coast. The ORHAB specialists regularly present and discuss their findings with staff biologists and public health experts from WDFW, QIN and the Washington Department of Health (WDOH). In addition, scientists from NOAA and the UW provide oversight and advice on a regular basis. Insight gained from the ORHAB partnership and the recently completed ECOHAB-PNW project has led to a better understanding of where HAB events originate and what environmental factors promote their growth. While much is yet to be learned, we can better manage our important shellfish fisheries because of these insights, good science, and hard work produced by well trained - and locally based - HAB specialists.

For more information see :

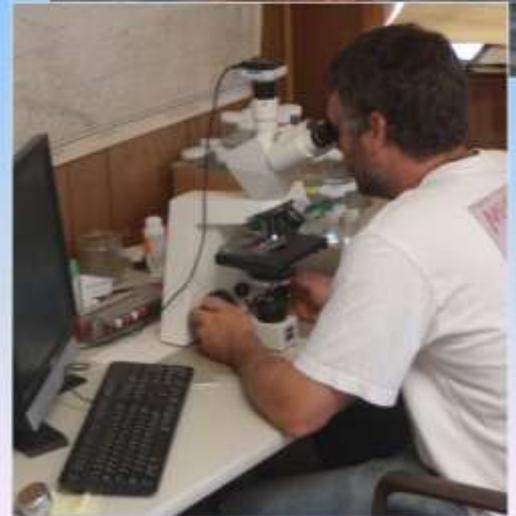
[http://wdfw.wa.gov/conservation/research/projects/algae\\_bloom/index.html](http://wdfw.wa.gov/conservation/research/projects/algae_bloom/index.html)

MERHAB : <http://www.cop.noaa.gov/stressors/extremeevents/hab/current/fact-merhab.aspx>

**WDFW regularly monitors surf zone plankton, toxins, and water quality...**



**...to determine the environmental conditions associated with blooms of harmful species.**



To conduct WDFW's work with monitoring for HABs a staff member has received training by University and federal experts. He makes regular collections of plankton samples from the surf zone and then analyzes them to determine the presence of toxic cells. The data received from this monitoring program can provide us advance notice of pending problems and give us time to adjust openers and give razor clammers a heads up of what may be coming.

For more information see:

[http://wdfw.wa.gov/conservation/research/projects/algal\\_bloom/index.html](http://wdfw.wa.gov/conservation/research/projects/algal_bloom/index.html)



Transferring sample dilutions to a microplate



Adding domoic acid control to dilution series

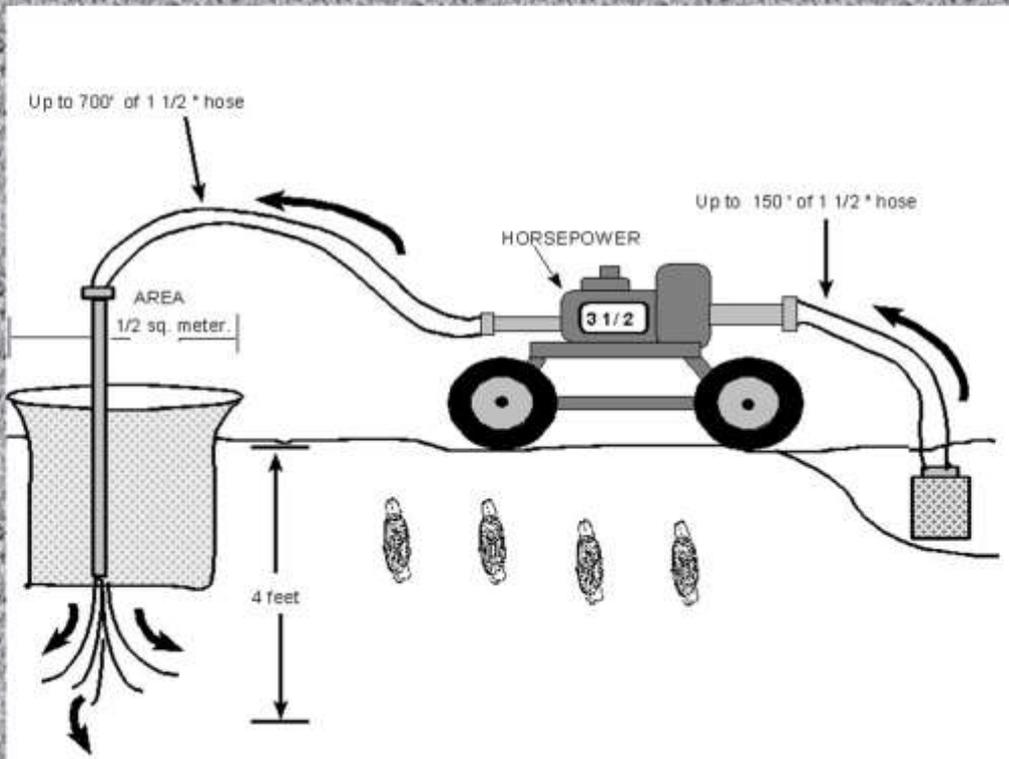


Loading microplate reader

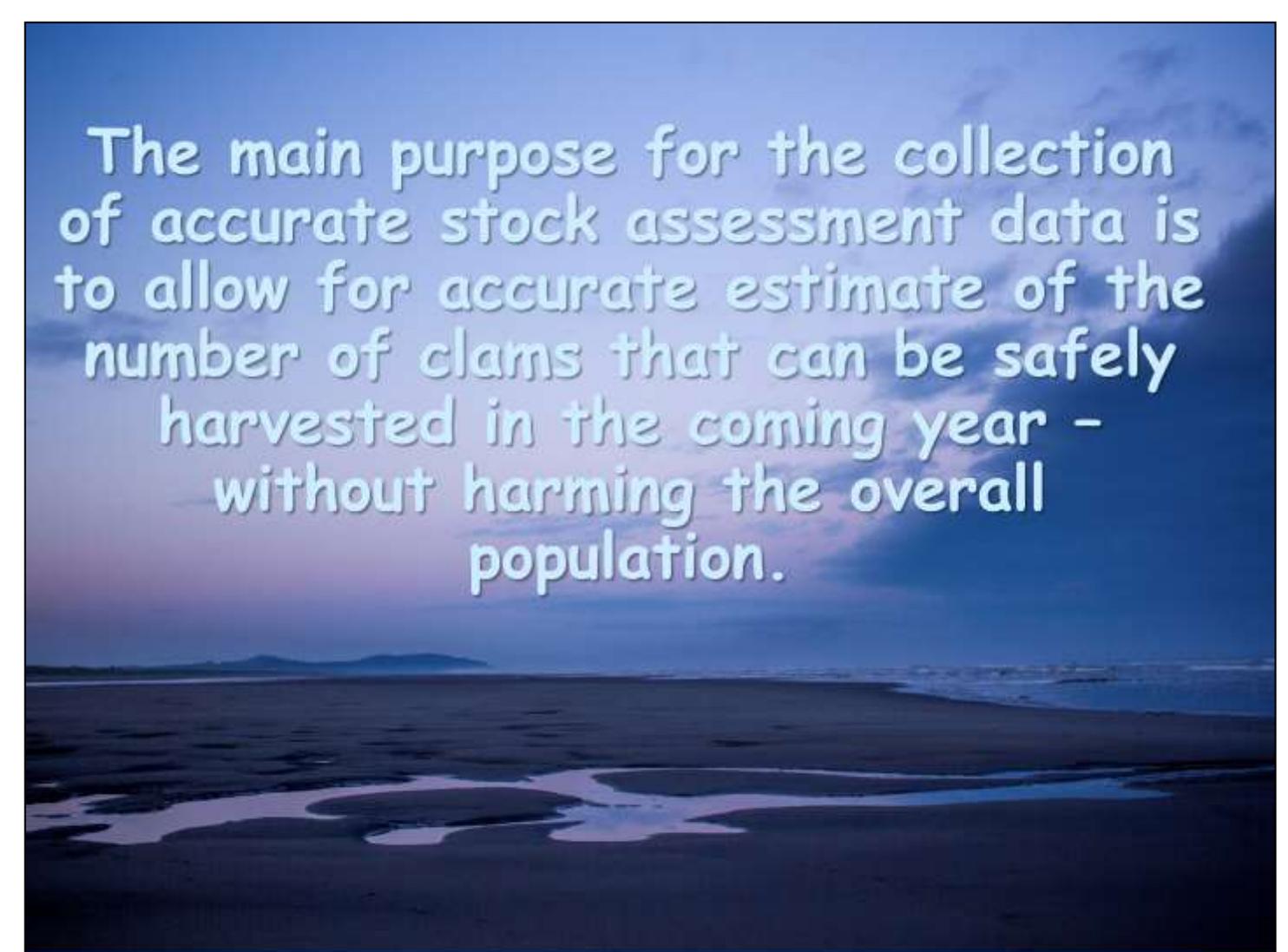
**WDFW is now able to conduct a rapid field test using the ELISA method for the presence of domoic acid in shellfish and seawater**

One major goal of the ORHAB project has been to develop and implement rapid detection technologies. This technology offers the promise of allowing field staff to determine the presence of toxins in seawater samples shellfish tissue without having to wait for the current time-consuming transport of samples to a distant laboratory. This process does not replace the regulatory testing conducted by the Washington Department of Health, but it does provide managers with an early warning of potential pending HAB issues.

# Status of the Razor Clam Stocks



We now turn our attention to the work WDFW does to annually determine the number of razor clams available on each beach. This cartoon is a simplified version of how our razor clam stock assessment process works. You'll find more details in the following pages.



The main purpose for the collection of accurate stock assessment data is to allow for accurate estimate of the number of clams that can be safely harvested in the coming year – without harming the overall population.

The main purpose for the collection of accurate stock assessment data is to allow for an accurate estimate of the number of clams that can be safely harvested in the coming year – without harming the overall population.

The stock assessment data provides us with estimates of the total number of clams and their average size. We are then able to determine the total number of clams that are at or over 3 inches (this size at which razor clams generally begin to make a clear “show” and are harvestable. The total allowable catch (TAC) for each beach is then calculated using a fixed harvest rate of 30% of the total number of clams at or over 3 inches.

Know that razor clams that are 3 inches during our summer stock assessment will quickly grow and become a more suitable size as the season progresses.



Starting in May and ending in September  
WDFW and tribal co-managers survey a total

...total of 58 miles of  
Razor Clam habitat...  
from the sound end of the  
Long Beach Peninsula (Beard's Hollow) to  
the north end of Kalaloch.

This year's work started on May 9 and was completed on August 4.

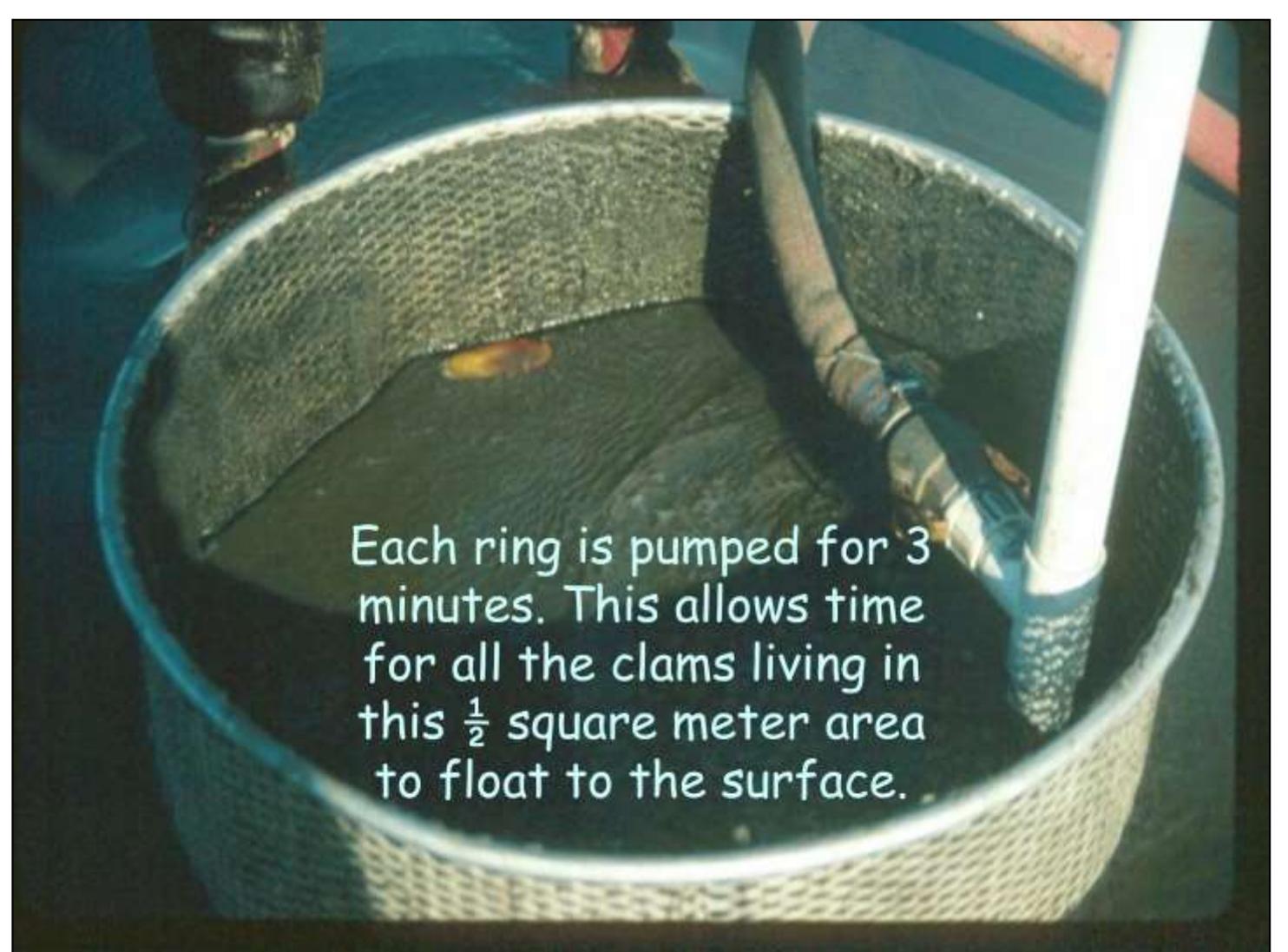
The survey method WDFW has been using since 1997 is the Pumped Area Method.

Surveying razor clams is not as easy as just digging all the clams in a known area. Razor clam digging requires the clam to "show" and not all clams "show" at the same time. As a result, it is not possible to dig every clam in a known area. The sampling method we use takes this into account and removes all the clams from a known area.



Water is pumped up  
the beach  
and used to liquefy the  
sand  
within a  $\frac{1}{2}$  square meter  
aluminum ring.

The Pumped Area Method uses water (pumped from the surf or a nearby lagoon) to liquefy the sand within an aluminum ring that is exactly  $\frac{1}{2}$  square meter in area. Every clam that is within the area of the ring will float to the surface and can be counted and measured as part of the random sample. The clams sample range in size from full grown adults (152 mm or 6 inches plus) down to very small newly “set” juvenile clams that are as small as 5 mm or  $\frac{1}{4}$  inch and have only recently settled into the sand from the larval stage. This provides us a way to make estimates for both the recruit sized clams ( $>$  or  $=$  76 mm or 3 inches) and the pre-recruits clams ( $<$  76 mm or 3 inches). Previously used stock assessment methods did not provide a good bases for estimating pre-recruits.

A circular metal ring is shown underwater, partially submerged in dark water. A white vertical pole is attached to the ring, and a blue hose is connected to it. The ring is being used to pump water from the seabed. The text overlaid on the image explains that this process allows clams to float to the surface for counting.

Each ring is pumped for 3 minutes. This allows time for all the clams living in this  $\frac{1}{2}$  square meter area to float to the surface.

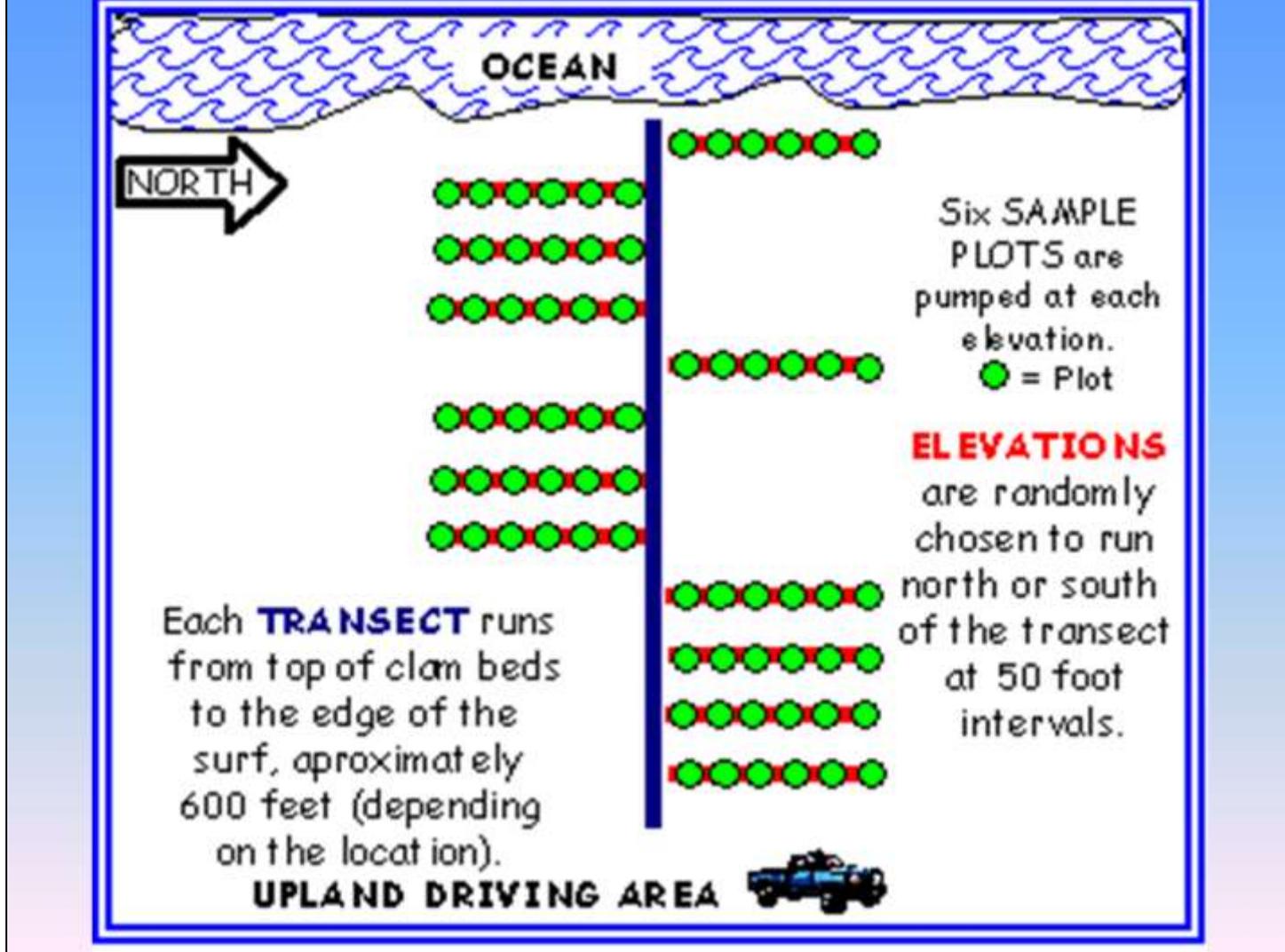
Each ring is pumped for 3 minutes allowing time for all the clams in the area of the ring to float to the surface and be counted.



Each clam is recorded, measured and returned to the beach.

Each clam is measured and recorded and returned to the beach.

The Pumped Area Method allows biologists to obtain the full data set needed to estimate both recruit clams and pre-recruit clams. This is in contrast with previous razor clam population sampling methods that were unable to estimate pre-recruits.



Each of the five management beaches is sampled with randomly selected transects chosen approximately one-mile apart. The sampling occurs during a good low tide, and begins at the top of the razor clam beds and moves out to the edge of the surf. Six plots (sample rings) are pumped at each 50 foot interval.

WDFW offers  
this video that  
discusses our  
razor clam stock  
assessment  
methods. Check  
it out at:

[http://youtu.be/aC4fu6\\_8G8I](http://youtu.be/aC4fu6_8G8I)



A recently produced video that demonstrates the WDFW stock assessment methods is now available on line. This will give you a better picture of the work we do each summer all along the Washington coast to make the best possible razor clam population estimates to be used in the management of the fishery. The video can be found at; [http://youtu.be/aC4fu6\\_8G8I](http://youtu.be/aC4fu6_8G8I)

Or go to <https://Youtube.com> and search for “Razor clams in Washington Stock Assessment”

# How many days can we dig?

Stock assessment data :

1. Estimate of the number clams
2. Estimate of the average size

TAC (total allowable catch) =

Total clams 3 inches or greater x  
**variable harvest rate.**

During the 2011-12 season, WDFW began using a new “variable” harvest rate on two beaches (rather than using a fixed harvest rate of 30%.)

On these beaches we determine the harvest rate based on the ratio of the **current population** of razor clams (as measured by our most recent stock assessment on each beach) and the **highest population** level measured (again on each beach). The maximum harvest rate possible (using the variable harvest rate method) is 40%.

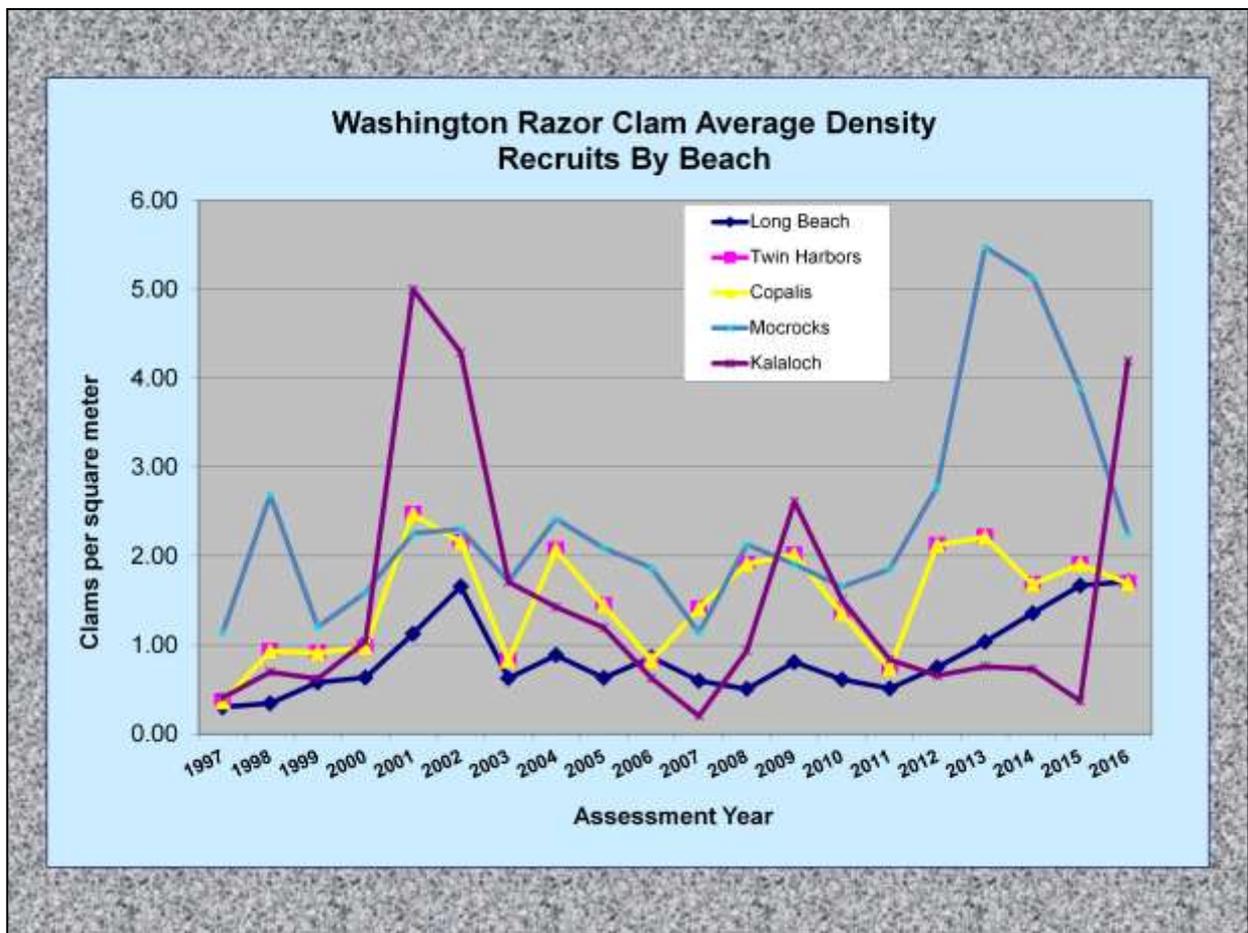
This methods allows for more harvest during times of abundant populations while still preserving the spawning capacity of the population. It also includes an automatic rebuilding strategy (with a reduced harvest rate) during times when stocks are weak.

Is being used to determine the TAC (total allowable catch) for Long Beach, Twin Harbors, Copalis and Mocrocks.

# 2016 Stock Assessment - Results



Many of you will recall that in 2014 we reported strong razor clam populations on all beaches, except for Kalaloch. The 2015 assessment of razor clam populations showed some changes. However, overall the number of clams remains strong. Read on for the details.



The best way to compare razor clam populations between beaches is to look at the average density (on the razor clam beds over the entire length of each beach) as measured in our annual stock assessment work. This graph displays average density on each beach back to 1997. (Because of the change in the way razor clam populations are assessed, it is difficult to compare populations earlier than 1997.) It is clear from this data that razor clam populations naturally change in abundance a fair amount. This is not an unexpected pattern in a shellfish population that is so heavily dependent on favorable oceanographic and weather conditions to allow for successful spawning and setting. As with any natural population, there are also disease processes that contribute to the variability in population levels. The 2016 results show a mixed bag. In general, Long Beach remains strong with the highest density we've seen on that beach in more than 25 years. Twin Harbors, with no harvest last season, good adult survival and recruitment of young clams is in excellent shape. Populations are down at both Copalis and Mocrocks but still on the high end of the long term average density. Recall that in 2013 Mocrocks an unusual surge experienced a surge in recruitment of small clams and populations there appear to be returning to a more normal level. The big story this season is Kalaloch. In 2015 we found an unprecedented recruitment even of juvenile clams all in the 2 inches range. Many of those clams did not survive the winter, but a significant portion did. The density of recruits sized clams (those > than 3 inches) found during the 2016 assessment is the highest since 2001. Read on for more details. The 2016 the average density (clams per square meter) by beach was : Long Beach = 1.71; Twin Harbors = 2.60; Copalis = 1.69; Mocrocks = 2.24; Kalaloch = 4.19. For comparison:

The 2015 the average density (clams per square meter) by beach was : Long Beach = 1.67; Twin Harbors = 1.78; Copalis = 1.91; Mocrocks = 3.89; Kalaloch = 0.37.

The 2014 the average density (clams per square meter) by beach was : Long Beach = 1.36; Twin Harbors = 3.65; Copalis = 1.68; Mocrocks = 5.14; Kalaloch = 0.73.

The 2013 the average density (clams per square meter) by beach was : Long Beach = 1.03; Twin Harbors = 3.15; Copalis = 2.22; Mocrocks = 5.47; Kalaloch = 0.76.

**LONG BEACH RAZOR CLAM POPULATION, TOTAL ALLOWABLE CATCH (TAC) AND HARVEST DATA**

YEAR	POPULATION (clams)		TAC (clams)	HARVEST	% of TAC
	RECRUITS	PRE-RECRUITS	of recruits	TOTAL (clams)	harvested
2012-13	5,356,383	14,450,287	1,606,915	2,382,398	128.9%
2013-14	7,387,752	814,599	2,881,223	2,423,612	84.1%
2014-15	9,694,093	25,633,364	3,885,492	2,421,393	62.3%
2015-16	11,924,512	22,329,350	4,768,605	2,689,735	56.4%
2016-17	12,239,059	6,099,130	4,895,624		
<b>AVERAGE</b>	<b>9,320,360</b>	<b>13,865,346</b>		<b>2,481,352</b>	

For the fourth year running there has been an increase in the abundance of recruit sized razor clams at Long Beach. The current population is the largest population of razor clams we've recorded at Long Beach for at least the last 25 years. As a result, we have used a variable harvest rate (discussed in slide #34) of 40% at Long Beach to determine the TAC for the 2016-17 season.

The number of pre-recruit clams is down over the last several seasons. This could be a matter of timing and it is possible our stock assessment could have missed the peak of the setting period. However, it is very possible the recruit population may not be as strong next season.

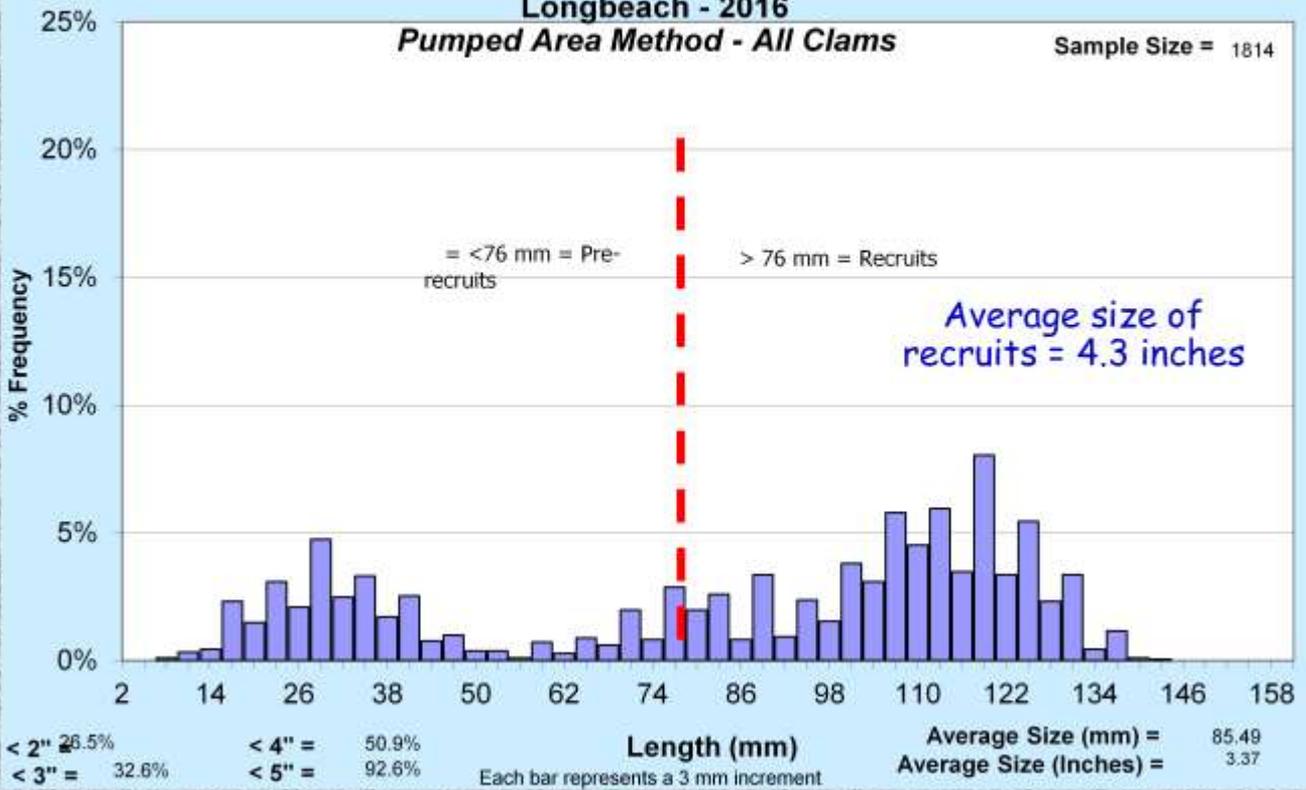
Recall; recruits are defined as clams => 76 mm (3 inches); pre-recruits are < 76 mm (3 inches).

# Washington Razor Clam

## Size Frequency Distribution Longbeach - 2016

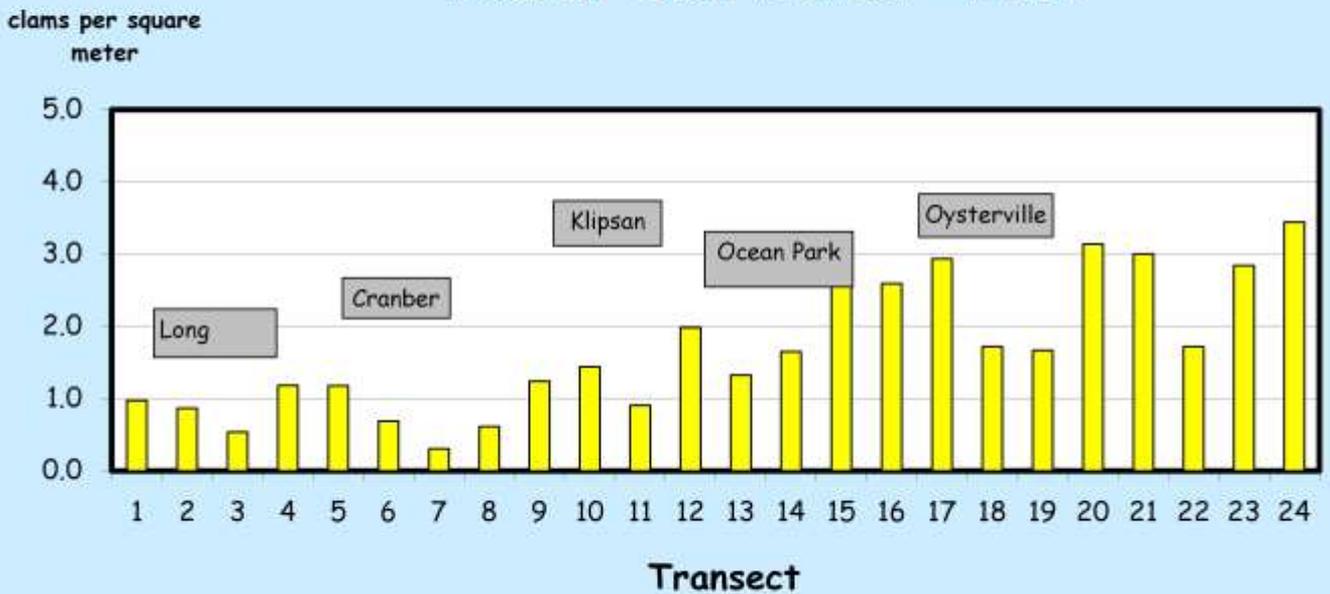
*Pumped Area Method - All Clams*

Sample Size = 1814



The average size of the Long Beach recruit clams found in our 2016 summer surveys was 4.3 inches which is an improvement that diggers will notice over the 2015 average of 4.0 inches and the 2014 average of 3.8 inches.

## Long Beach Razor Clam Population Recruit Distribution - 2016



Generally at Long Beach the better digging is on the north end of the beach. However, the distribution of clams along the beach found in our 2016 assessment shows good populations exist in many places all along the beach.

**TWIN HARBORS RAZOR CLAM POPULATION, TOTAL ALLOWABLE CATCH (TAC)  
AND HARVEST DATA**

YEAR	POPULATION (clams)		TAC (clams) of recruits	HARVEST	% of TAC harvested
	RECRUITS	PRE-RECRUITS		(clams) TOTAL	
2012-13	4,704,458	8,757,897	1,411,337	1,537,299	81.7%
2013-14	5,744,411	1,398,700	2,297,764	1,714,479	78.9%
2014-15	6,657,152	3,113,981	2,662,861	1,701,101	63.9%
2015-16	3,239,459	2,831,118	1,295,784	0	
2016-17	4,741,577	3,069,921	1,896,631		
<b>AVERAGE</b>	<b>5,017,412</b>	<b>3,834,323</b>		<b>1,136,138</b>	

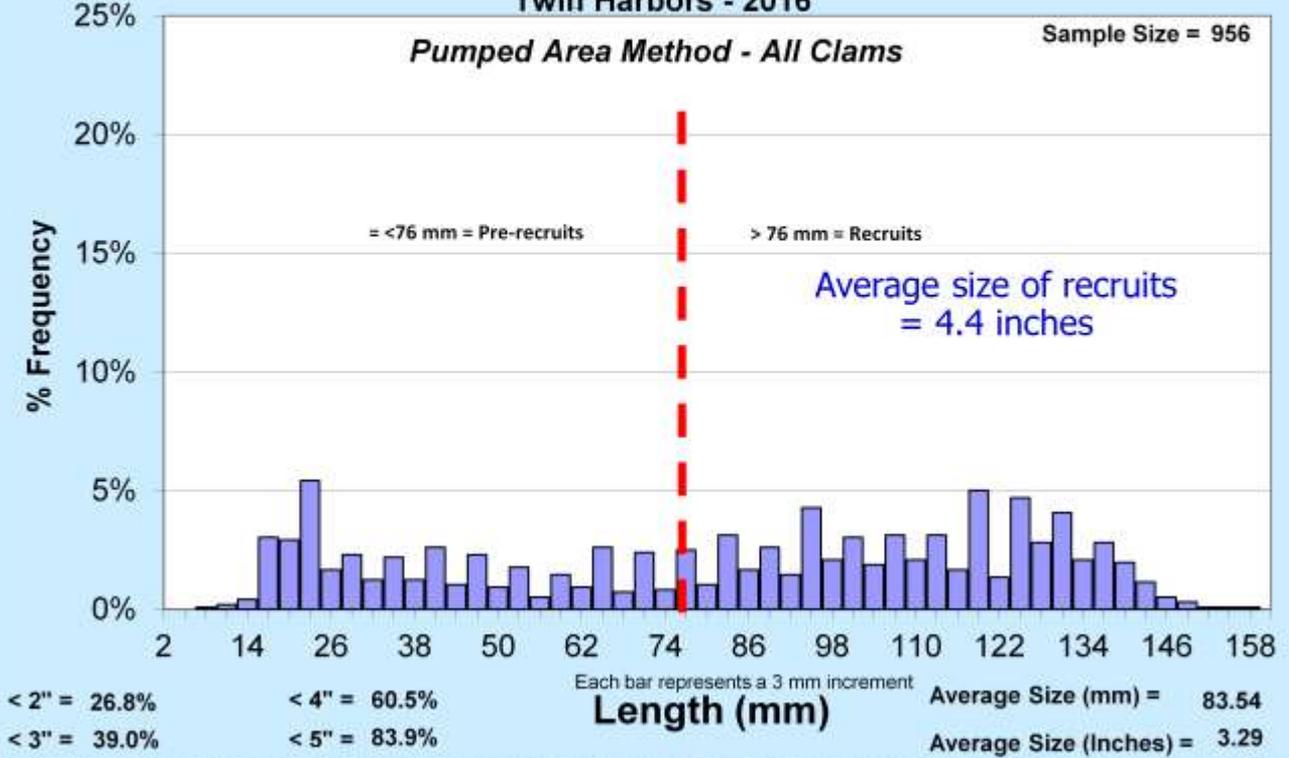
The Twin Harbors razor clam population is showing good signs of adult survival and good recruitment of juvenile clams. This is good news. In previous years when beaches have been closed for an entire season we do not always see good survival of adults. Current marine toxin levels are low and if all goes well – this beach will have some excellent digging opportunities in the 2016-17 season.

Recall; recruits are defined as clams  $\Rightarrow$  76 mm (3 inches); pre-recruits are  $<$  76 mm (3 inches).

# Washington Razor Clam

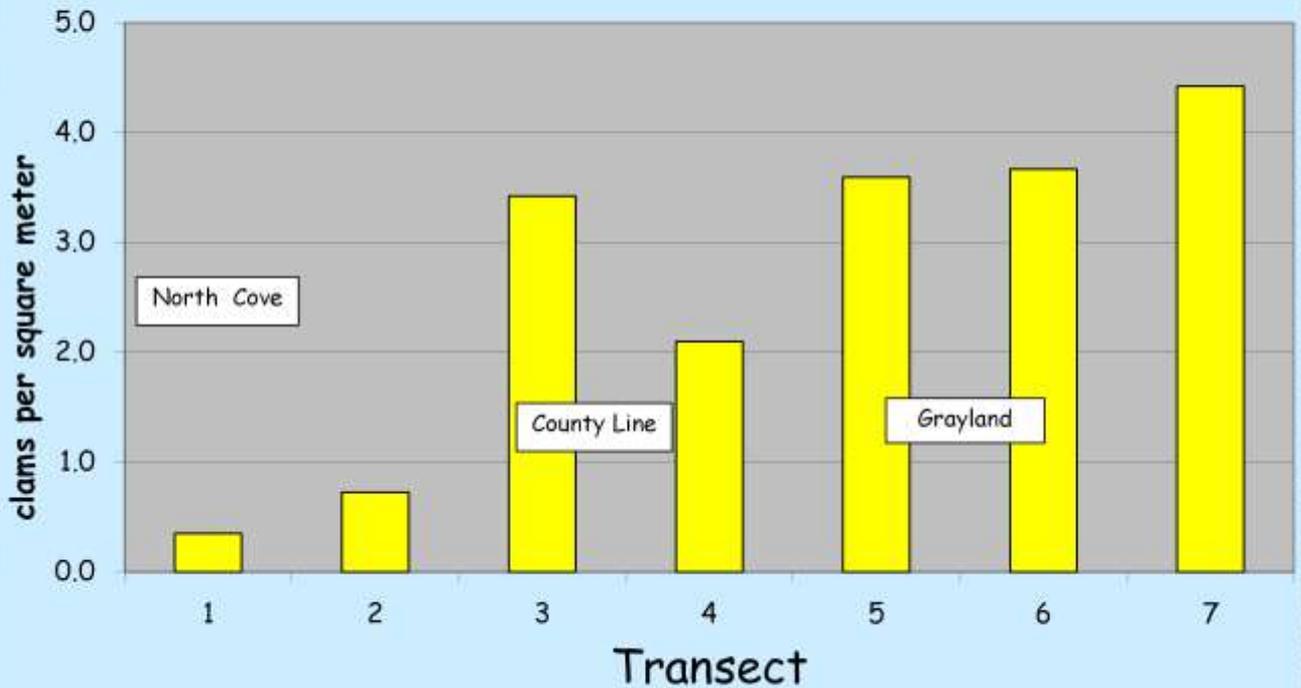
## Size Frequency Distribution

### Twin Harbors - 2016



The average size of the Twin Harbors recruit clams found in our summer 2016 surveys was 4.4 inches. This compares to the 2014 and 2015 average of 4.3 inches.

### Twin Harbors Razor Clam Population Recruit Distribution 2016



Except for the very southern end of the Twin Harbors beach, the 2016 assessment good densities of clams on the northern two-thirds of the Twin Harbors beach. The southern end has seen a lot of erosion and digging there will not be as productive as in the past.

**COPALIS RAZOR CLAM POPULATION, TOTAL ALLOWABLE CATCH (TAC) AND HARVEST DATA**

YEAR	POPULATION (clams)		Total TAC (clams) of recruits	State's Share (50% w/ adjustments)	State's HARVEST (clams) TOTAL	% of share harvested
	RECRUITS	PRE- RECRUITS				
2012-13	7,151,264	9,898,813	2,145,379	1,072,690	1,393,980	130.0%
2013-14	7,472,919	1,394,801	2,241,876	1,396,608	1,102,421	78.9%
2014-15	5,680,975	6,848,607	2,101,961	889,827	802,720	90.2%
2015-16	6,440,889	7,077,889	2,511,869	1,094,781	983,177	89.8%
2016-17	5,708,079	2,780,283	2,083,449	880,571		
<b>AVERAGE</b>	<b>6,490,825</b>	<b>5,600,079</b>			<b>1,070,575</b>	

Our assessment work shows the 2016 Razor clam populations at Copalis shows decrease in recruit sized razor clams band a less than average number of pre-recruit clams. While this decrease in the recruit population not outside of the long-term average it will mean some reduction in harvest opportunities on Copalis.

Recall; recruits are defined as clams => 76 mm (3 inches); pre-recruits are < 76 mm (3 inches).

Late in the 2012-13 season while reviewing state harvest totals on Copalis and Mocrocks, a biometrician discovered an error in the calculations used by the state to estimate the daily recreational harvest.

Biologists determined this error had gone undetected for a number of years and resulted in the reporting of harvest totals that in general underestimate the true total – on all beaches.

Since that time WDFW and the Quinault Indian Nation (QIN) have come to an agreement on a five-year schedule WDFW will use to return to a portion of the clams that were inadvertently dug in excess of the state’s harvest share from Copalis and Mocrocks. The 2016-17 season is year 4 of that 5 year schedule.

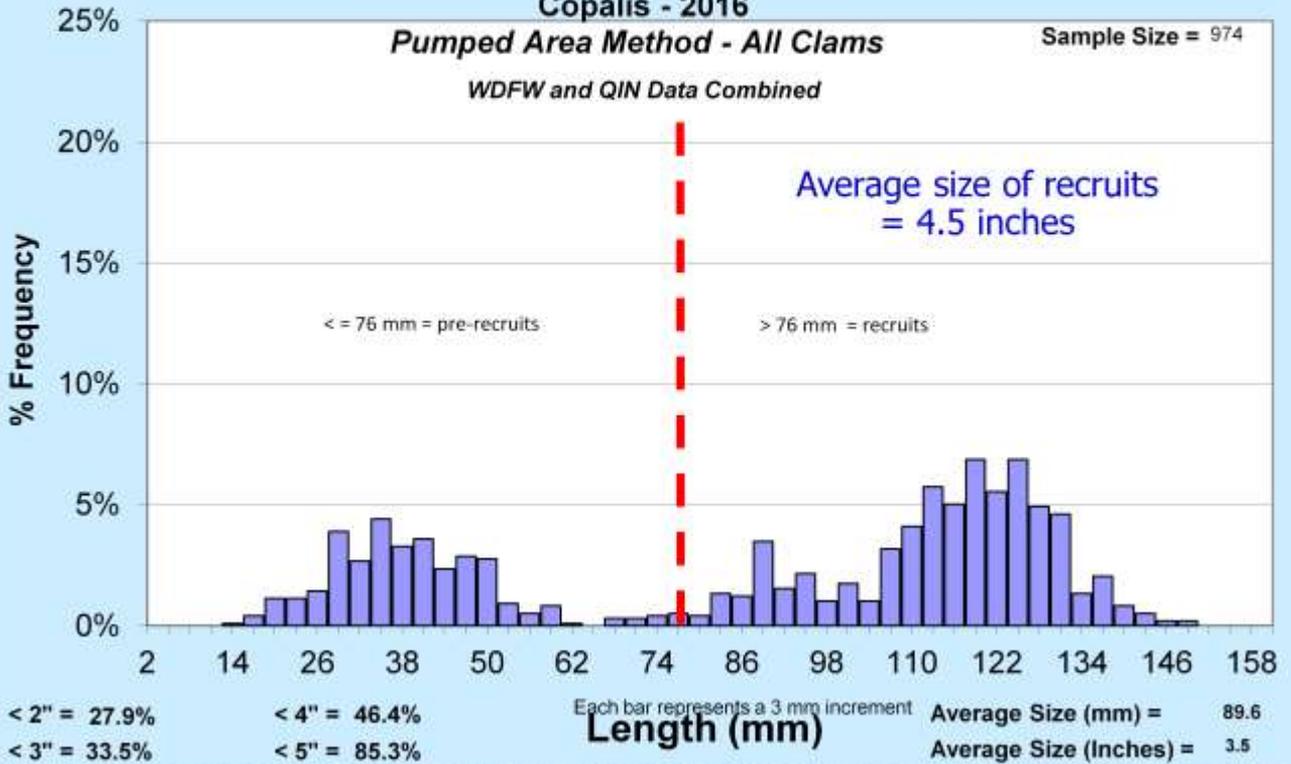
# Washington Razor Clam

## Size Frequency Distribution Copalis - 2016

*Pumped Area Method - All Clams*

Sample Size = 974

*WDFW and QIN Data Combined*



The average size of the Copalis recruit clams found in our 2015 summer surveys was 4.0 inches which is comparable to the 2014 average of 4.3 inches.

## Copalis Razor Clam Recruit Population Distribution 2016



As always the best digging on the Copalis will be in the central portions of the beach between Ocean Shores and north of Ocean City to Conner Creek.

**MOCROCKS RAZOR CLAM POPULATION, TOTAL ALLOWABLE CATCH (TAC) AND HARVEST DATA**

YEAR	POPULATION (clams)		Total	State's Share	State's	% of share
	RECRUITS	PRE-RECRUITS	TAC (clams of recruits)	(50% w/ adjustments)	HARVEST (clams) TOTAL	
2012-13	6,064,416	10,276,881	1,819,335	909,667	765,637	84.2%
2013-14	11,935,249	6,663,172	3,580,575	1,790,287	1,102,421	78.9%
2014-15	11,201,544	12,981,705	4,480,617	2,240,309	831,281	37.1%
2015-16	8,475,370	5,475,844	3,390,148	1,695,074	992,831	58.6%
2016-17	4,893,087	975,023				
<b>AVERAGE</b>	<b>8,513,940</b>	<b>7,274,525</b>			<b>908,610</b>	

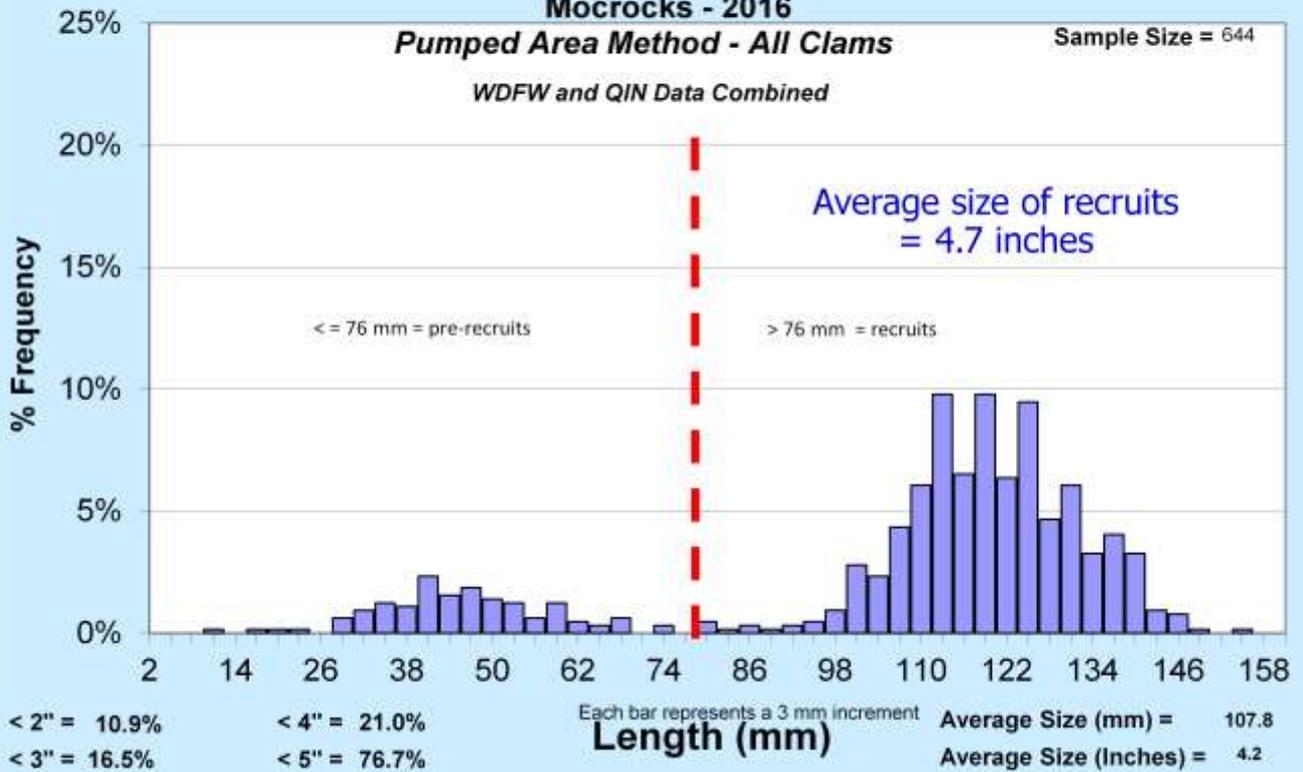
The 2016 stock assessment on Mocrocks shows a significant decrease in the population of recruit clams. There is also concern with the low number of pre-recruits found during this summer's work. It is possible that our assessment missed the primary setting period for the very small juvenile clams with the size frequency of our length data showing mostly pre-recruits that are a little older. Regardless, all of this will result in fewer numbers of digging opportunities for harvesters.

Recall that late in the 2012-13 season while reviewing state harvest totals on Copalis and Mocrocks, a biometrician discovered an error in the calculations used by the state to estimate the daily recreational harvest. Biologists determined this error had gone undetected for a number of years and resulted in the reporting of harvest totals that in general underestimate the true total – on all beaches. Since that time WDFW and the Quinault Indian Nation (QIN) have come to an agreement on a five-year schedule WDFW will use to return to a portion of the clams that were inadvertently dug in excess of the state's harvest share from Copalis and Mocrocks.

# Washington Razor Clam

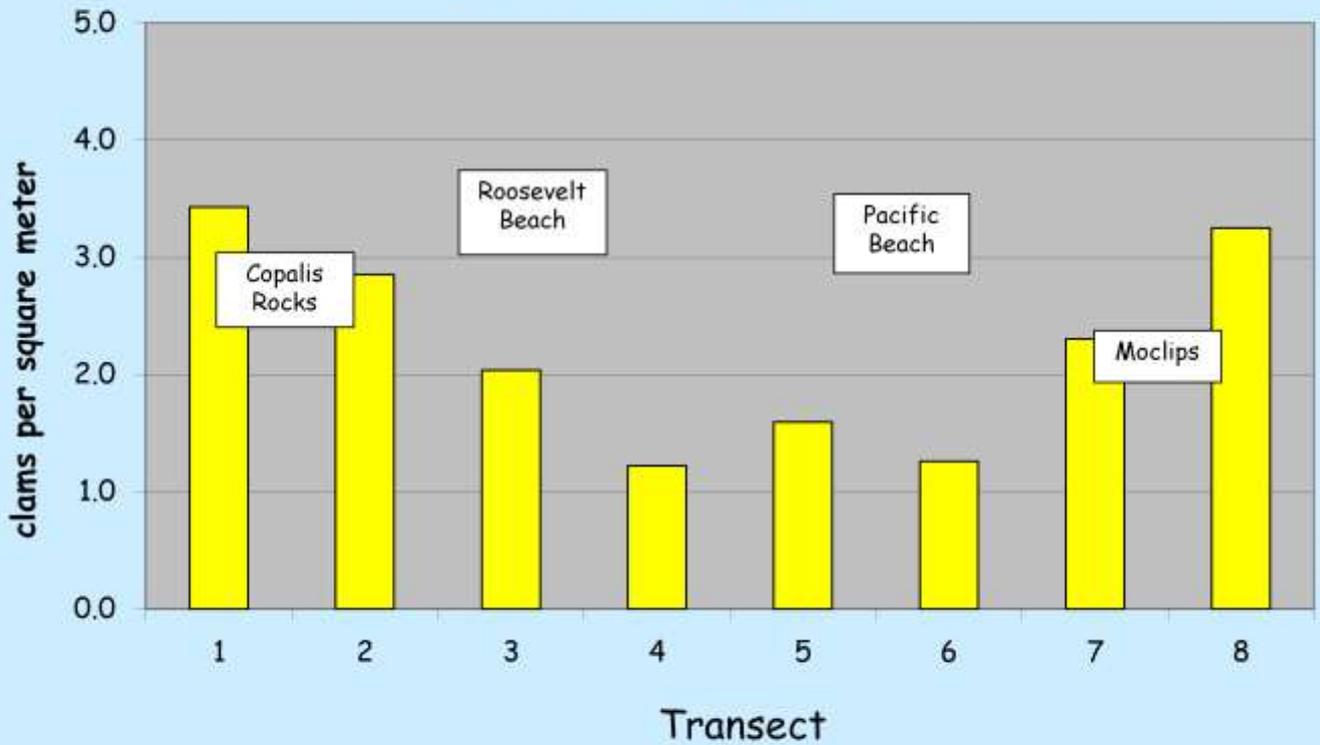
## Size Frequency Distribution

### Mocrocks - 2016



The average size of the Mocrocks recruit clams found in our 2016 summer surveys was 4.7 inches which is larger than the 2015 average of 4.5 inches – diggers will very likely see the difference.

## Mocrocks Razor Clam Population- 2016 Recruit Distribution



Razor clam densities from this summer's work show that the best digging will be at the north and south ends of this beach.

## KALALOCH RAZOR CLAM POPULATION, TOTAL ALLOWABLE CATCH (TAC) AND HARVEST DATA

YEAR	POPULATION (clams)		TAC (clams) harvest rate 25.4%	50%	State's HARVEST (clams)
	RECRUITS	PRE-RECRUITS	of recruits	SHARES	TOTAL
2012-13	894,041	903,369	227,086	113,543	0
2013-14	1,033,286	536,262	262,455	131,227	0
2014-15	990,040	549,684	251,470	125,735	0
2015-16	501,890	89,708,93	127,480	63,740	0
2016-17	5,715,655	985,530	1,451,776	725,888	
<b>AVERAGE</b>	<b>1,826,982</b>	<b>18,536,756</b>			

Recall that the big news after our 2015 assessment was the unprecedented very large abundance of pre-recruit clams present on the northern half of the Kalaloch beach. As we expected only a portion of those small ( $\approx 2$  inch) clams survived through the winter. However, the current population of 5.7 million clams is the largest population of recruits we have measured on this beach since 2001. You will notice in the slides ahead that these clams have been slow to grow which is likely a function of the large number of them and a lack of nutrition to go around. Please see the next slide for the specific length information.

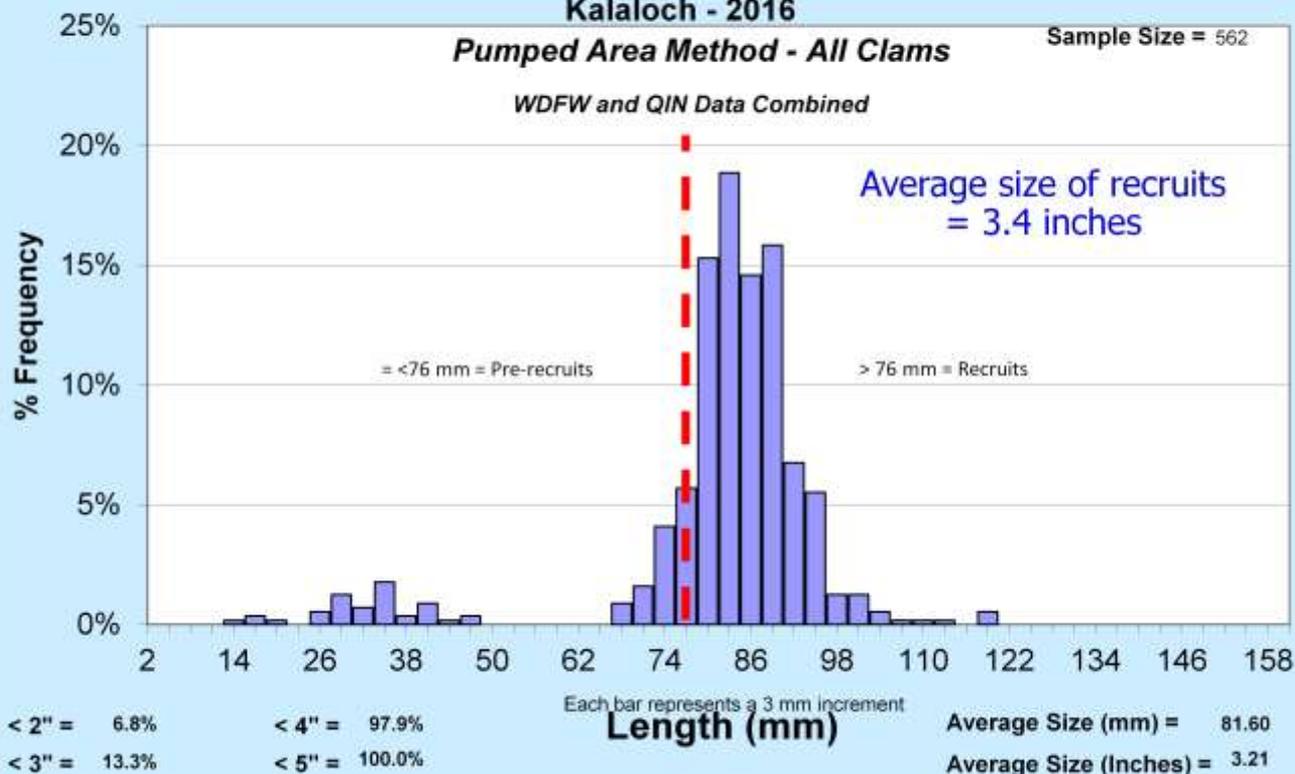
We are interested to know if you have any comments about having the chance to dig at Kalaloch (a beach that has had no openings since the 2011-12 season when just three days of April digging were open) given the knowledge that there are very few (if any clams) that will be larger than 4 inches.

Recall; recruits are defined as clams  $\Rightarrow$  76 mm (3 inches); pre-recruits are  $<$  76 mm (3 inches).

Because Kalaloch lies within the boundaries of the Olympic National Park, their staff works closely with WDFW staff in the management of the recreational fishery here. WDFW has the lead in the population assessment work. ONP has the lead in harvest monitoring and enforcing the recreational fishery. Both groups work together to set specific dates when harvest will occur on this beach.

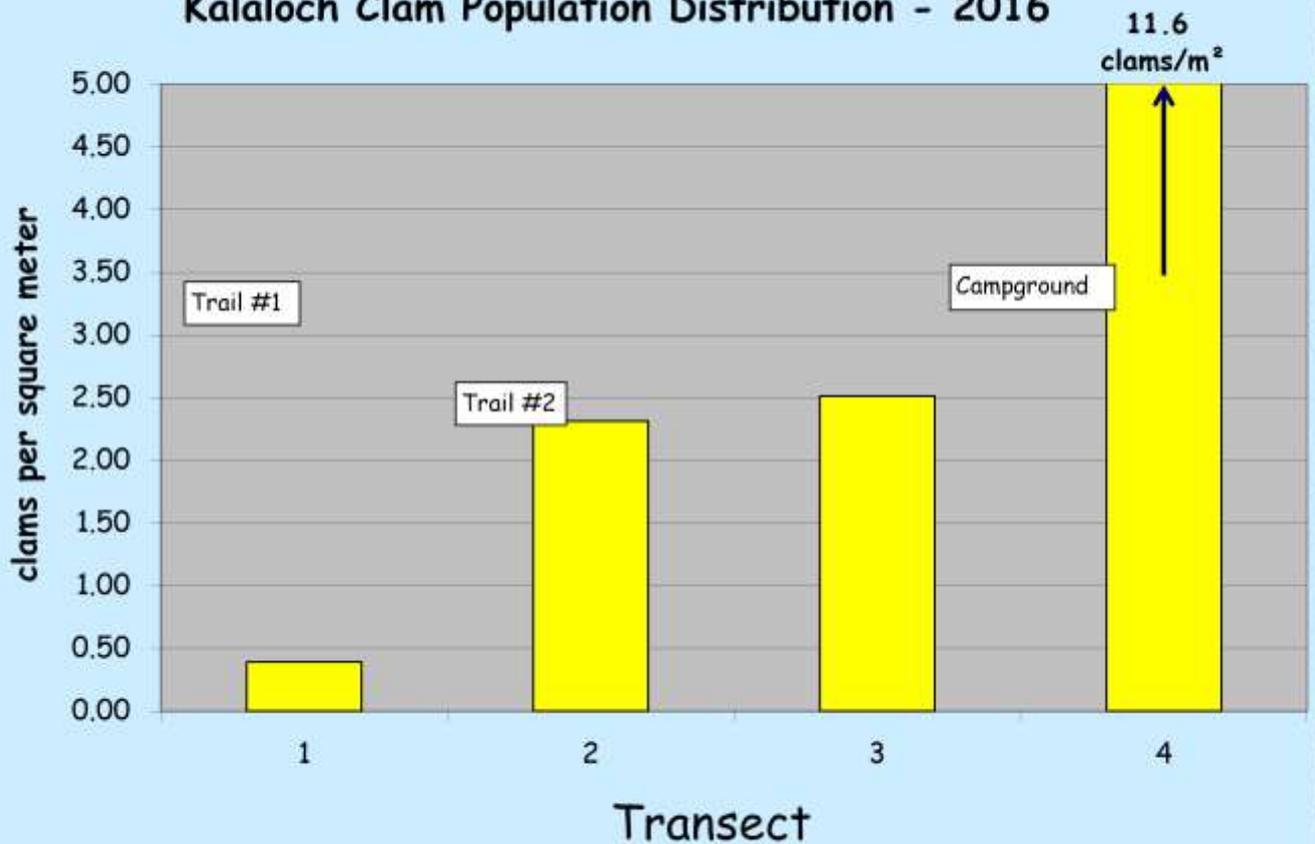
# Washington Razor Clam

Size Frequency Distribution  
Kalaloch - 2016



The few recruit clams we found at Kalaloch in July 2016 have an average size of just 3.4 inches. It is also clear that these are almost all the survivors from the huge set of juveniles we observed in our 2015 assessment. If this beach is opened for digging during the 2015-16 season, diggers will find an abundance of clams, but they will be small – maybe a little larger than what we observed during our work in July – but very likely smaller than 4 inches.

## Kalaloch Clam Population Distribution - 2016



Play close attention that the y-axis (left hand side) of this graph has a maximum of 5.0 clams/m<sup>2</sup> (clams per square meter). The number of recruits (yellow bar) for transect #4 is 11.6 clams/m<sup>2</sup>. This is a more than double the next highest density for one transect on any other razor clam beach in the 2016 assessment.

# Co-Management With Coastal Tribes

- **Share the resource and share the work**
  - ...complete joint stock assessments
  - ...determine TACs jointly
- **Sign Fishery Management Plans annually**
- **Different seasons for different reasons**
  - ...tribal C&S and or commercial seasons
  - ...State recreational seasons
- **Each group monitors their own fishery**
  - ...make individual harvest estimates / share data
  - ...provide enforcement

As was mentioned earlier, WDFW works closely with two coastal tribes in the management razor clam populations.

## Quinault Tribal staff working on Kalaloch Beach in July 2011



The Quinault Indian Nation (QIN) shares the labor of the stock assessment work - with their own crews of biologists and technicians who also use the Pumped Area Method. Working side by side QIN and WDFW staff assess razor clam populations at Copalis, Mocrocks and Kalaloch. On each of these beaches half of the sample transects are completed by QIN staff and half by WDFW staff. The data is pooled and a joint population estimate is made.

At Kalaloch, the Hoh Tribe provides additional staff to assist in the assessment on that beach. Because there is no vehicle access on the Kalaloch beach – having extra people available to move the gear up and down trails to the beach is critical to the success of the work.

**2007-08 INTERIM RAZOR CLAM MANAGEMENT AGREEMENT  
FOR COPALIS AND MOCROCKS BEACHES**

**ENTERED INTO BY THE STATE OF WASHINGTON  
AND QUINAULT INDIAN NATION**

August 28, 2007

This agreement establishes principles, concepts, and procedures, which will govern the non-Indian and treaty tribal fisheries for razor clams at Copalis and Mocrocks Beaches.

**1. EFFECTIVE DATE**

This agreement is effective on August 28, 2007.

**2. TERM**

The term of this agreement is until August 27, 2008, unless superseded by another agreement.

Each year in August WDFW and the costal tribes sit down and discuss the population estimates and proposed total allowable catch (TAC) for the co-managed beaches; Copalis, Mocrocks and Kalaloch. The result of those discussion is a an agreed to Fishery Management Plan signed by policy representatives of each group that guides the management of the fisheries in the coming season.

	2016-17 TAC Share (clams)	2015-16 aver daily harvest (clams)
Long Beach	4,895,624	28,600
Twin Harbors	1,896,631	16,000 (2014-15)
Copalis	880,571	54,600
Mocrocks	941,919	38,000
Kalaloch	725,888	

This is a recap of the Total Allowable Catch that will guide WDFW during the 2016-17 season. We also list here the average daily catch during the 2015-16 season, by beach. Note that the average daily catch includes days with large crowds, excellent weather and good digging success and days with fewer people or poorer success (usually due to bad weather).



WDFW has produced a new video titled: "Digging Razor Clams in Washington"

Check it out at:

<https://youtu.be/RBM9b5r6rMQ>

We are pleased to offer you a new video that should help new diggers learn how to dig razor clams. See it at: <https://youtu.be/RBM9b5r6rMQ> Or search You Tube for "Digging Razor Clams in Washington"

If you are one of our first time diggers we want to welcome you to this fun recreational activity that anyone can easily learn to do. After you've watch this video, and have additional questions, feel free to contact us at the email or phone numbers listed later in this document. Another good piece of advice, if you are on the beach and struggling to successfully dig clams, look around for an experienced digger and ask for advice. Most diggers are friendly and will be more than willing to give you some on-the-spot pointers. To you "old salts" who can dig a clam without blinking – consider offering some advice to those who might be new to razor clamming and look like they could use a few pointers.

## Dig with your kids, not for them . . .

Razor clamming is a fun and easy-to-learn activity that draws generations of families and friends to the Washington coast each year.

We understand that children have varying abilities when it comes to handling digging equipment. Adults may assist kids, but kids need to actively participate in the entire process of digging and gathering razor clams.

Watch our YouTube video online to see an example of how to dig razor clams with kids:  
<http://www.youtube.com/thewdfw>



Also, please remember:

- Adults and youth age 15 and older need a license to dig razor clams; licenses are available at many local sporting goods retailers and online at [wdfw.wa.gov](http://wdfw.wa.gov);
- Everyone needs to dig his or her own limit, bring a separate container for his or her clams, and not dig more than the 15 clam limit;
- It is unlawful to dig for someone else or dig part of someone's limit, unless digging for a disabled harvester with a designated harvester card.
- You are required to keep the first 15 clams dug, regardless of size and condition. Wasting razor clams is against the law.

The Washington Department of Fish and Wildlife is asking for your help to ensure current and future generations continue to enjoy bountiful razor clam harvests.



For more on razor clam seasons, regulations, digging, and cooking your clams, visit WDFW's recreational razor clam website: <http://wdfw.wa.gov/fishing/shellfish/razorclams/>

**We hope you and your family  
have a great time at the beach.**



Still have questions  
about razor clam digging?

Call 360-249-4628



WDFW also  
has a video  
titled: "Razor  
Clams in  
Washington  
Digging with  
Kids"

Check it out  
at:

[http://youtu.be/gI9p\\_PparVk](http://youtu.be/gI9p_PparVk)

Razor clamming is a fun and easy-to-learn activity that draws generations of families and friends to the Washington coast each year. We understand that children have varying abilities when it comes to handling digging equipment. Adults may assist kids, but kids need to actively participate in the entire process of digging and gathering razor clams. Check out the video at:

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# SEASON OPTIONS

What do you think????

- Fall and Winter and/or Spring season only?
- Weekends (Friday/Saturday or Saturday/Sunday)?
- Weekdays (especially if daylight tides) ?
- Fewer winter and more spring tides.
- Two days / twice a month ???

Feed back WDFW has received over the last several years is that most clam diggers like the season structure we've been using that allows for a few days of digging – each month – on as many beaches as possible.

Many coastal businesses have also said that such a season structure helps them by drawing people to coastal communities during periods of the year when fewer people would normally visit.

Specifically, this season we are interested to know if you have any comments about having the chance to dig at Kalaloch, a beach that has had no openings since the 2011-12 season when just three days of April digging were open – given the knowledge that there are very few (if any clams) that will be larger than 4 inches. It may also want to know that governments have plans to allow their harvesters to dig at Kalaloch beginning in September. See the information in slides 55 through 57.

Regardless, we are always open to suggestions and would be happy to hear any ideas about what might work better for you.

What do you think???

Feel free to email your  
comments and suggestions  
to: [razorclams@dfw.wa.gov](mailto:razorclams@dfw.wa.gov)

Thank you for taking the time to review this presentation. We are interested in your opinions regarding our management of the razor clam resource and specifically any suggestions or comments you have on the way we might structure the 2016-17 season.

Email your comments to : [razorclams@dfw.wa.gov](mailto:razorclams@dfw.wa.gov)

*To be added to our e-mail update list, please send an email request to: [razorclams@dfw.wa.gov](mailto:razorclams@dfw.wa.gov)*

>>> Dan Ayres 08/14/03 12:26PM >>>

You are receiving this message because you have expressed interest in Washington State's recreational razor clam fishery. If you do not wish to receive future messages, please reply by return e-mail.

#### DOMOIC ACID UPDATE

The latest demonic acid levels were reported today(8/14/03) by the Washington Department of Health. Levels continue to drop on most all beaches, improving the chances for a fall season.

Long Beach Reserve; 3 ppm on 8/11/02 (down from 9 ppm on 7/15/03)

Twin Harbors Area CL; 17 ppm on 8/11/03 (up from 10 ppm on 7/15/03)

Copalis; 17 ppm on 8/11/03 (down from 36 ppm on 7/15/03)

Mocrocks; 12 ppm on 8/11/03 (down from 24 ppm on 7/21/03)

Kalaloch; 22 ppm on 8/10/03 (down from 28 ppm on 7/29/03)

You may be interested to know that we maintain an email distribution list for anyone specifically interested in razor clam related issues. The periodic updates sent out using this list include information on season openers, marine toxin levels and other pertinent topics. If you are interested in having your email address added to this list, please let us know by sending an email request to: [razorclams@dfw.wa.gov](mailto:razorclams@dfw.wa.gov)



Thanks again for visiting this presentation!

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