

# Olympia oyster

*Ostrea lurida*

## BIOLOGY FACT SHEET



Photo: Dominique Barnes

## San Diego seafood profiles

### Taxonomic description

- A marine bivalve mollusk, in the marine invertebrate group along with other oysters
- Often reaches 6-8 cm (2.4-3.1 inches) length and 2.5-3.5 cm (0.90-1.3 inches) thick [1]
- Shell shape variable, often forming to the shape of the surface on which it grew [1]

### Distribution

- Found on the west coast of North America, from southern Alaska to Baja California, Mexico [1,2,3]

### Life history

- Spawning is triggered by water temperature of 16-18C (60-64F) and

can occur 1-2 times per year between spring and fall [1].

- Broods; fertilized eggs develop in the female mantle [1]
- An average brood of larvae is between 250,000-300,000
- Maximum age is unknown

### Habitat

- Lives in estuaries, sounds, tidal channels, and bays.
- Filter feeder, eats microscopic algae and plankton [3]
- Many predators including birds, rays, and rock crabs.
- Sensitive to water temperature changes, but can tolerate short exposure to changes in salinity [1]

- Large amount of its natural habitat has been removed due to urban development and pollution [2]

### References

- [1] Couch, D. and T.J. Hassler. 1989. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Northwest) —Olympia oyster. U.S. Fish Wild. Serv. Biol. Rep. 82(11.124) U.S. Army Corps of Engineers, TR EL\_82-4. 8pp.
- [2] Timmins-Schiffman E, Friedman C, Metzger D, White S, Roberts S. Genomic resource development for shellfish of conservation concern. *Molecular Ecology Resources* [serial online]. March 2013;13(2):295-305. Available from: Academic Search Complete, Ipswich, MA. Accessed May 13, 2014.
- [3] <http://www.habitat.noaa.gov/restoration/techniques/oysters.html>
- [4] [http://w3.shorecrest.org/~Lisa\\_Peck/MarineBio/syllabus/chZinvertebrates/Invertpw/echino\\_wp\\_06/derek/structure.htm](http://w3.shorecrest.org/~Lisa_Peck/MarineBio/syllabus/chZinvertebrates/Invertpw/echino_wp_06/derek/structure.htm)

### Did you know?

The Olympia oyster is the only oyster that is native to the west coast of North America.



# Olympia oyster

## FISHERY FACT SHEET

*Ostrea lurida*



Lagoon with racks of shellfish at  
Carlsbad Aquafarm, Inc.

Photo: D. Barnes

## San Diego seafood profiles

### Seasonal availability

- Shellfish farms often provide year round availability.

### Managing authority

- Farmed with strict governing by Federal Agencies: NOAA, Army Corps of Engineers, Fish and Wildlife Service, USDA, EPA, FDA, BOEM, and the Coast Guard [7]
- In states where recreational shellfishing is common, the state Department of Fish and Game regulate seasonal harvest [1]
- In Washington state, the minimum size for oyster harvest is 2.5 inches. The large minimum size is thought to prevent much collection of the oyster [1]

### Gear type

- Oyster farming in the U.S. began in 1890s in Puget Sound tidelands [2]
- Oysters are grown by on-bottom, off-bottom or suspended culture methods [7]

- The standard marketable size of an Olympia oyster is about the size of a silver dollar (3.5-4 cm) [2]

### Status of the fishery

- Native American harvested Olympia oysters for food [2]
- Production peaked from 1890s to 1900 but greatly declined after due to pollution and over harvesting [2]
- Larger, faster growing species, like the Pacific Oyster from Japan, continue to dominate oyster farming in the U.S. [3]
- It takes 3-5 years for an Olympia oyster to reach market size [2,3]
- A growing interest in the local food movement has increased interest in the Olympia oyster [6]

### Potential ecosystem impacts

- Oyster farms have minimal impacts to local ecosystems. [5]
- Oyster beds provide many ecosystem benefits such as: habitat for other species, improved

water quality, biodiversity support, reduced shoreline erosion, and enhanced restoration projects [4]

- Monterey Bay Aquarium's Seafood Watch classifies farmed oysters as three of its "Best Choices" for seafood options [5]

### References

- [1] Washington Dept. Fish & Wildlife. [http://wdfw.wa.gov/fishing/shellfish/ps\\_clam\\_oyster\\_faqs.html](http://wdfw.wa.gov/fishing/shellfish/ps_clam_oyster_faqs.html)
- [2] Couch, D. and T.J. Hassler. 1989. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Northwest) —Olympia oyster. U.S. Fish Wild. Serv. Biol. Rep. 82(11.124)
- [3] U.S. Army Corps of Engineers, TR EL\_82-4. 8pp.
- [4] Beahrs, A. (2012). Heaven on the Half Shell. *Smithsonian*, 43(3), 62-69.
- [5] NOAA - Oyster Restoration - <http://www.habitat.noaa.gov/restoration/techniques/oysterrestoration.html>
- [6] Seafood Watch 2014 [http://www.seafoodwatch.org/cr/seafoodwatch/web/sfw\\_factsheet.aspx?fid=82](http://www.seafoodwatch.org/cr/seafoodwatch/web/sfw_factsheet.aspx?fid=82)
- [7] Sunset Magazine. Christopher Hall, *The West Native Oyster Makes a Comeback*. <http://www.sunset.com/travel/northwest/olympia-oyster>
- [7] FISHWATCH. U.S. Seafood Facts. NOAA. [http://www.fishwatch.gov/seafood\\_profiles/species/oyster/species\\_pages/pacific\\_oyster\\_farmed.htm](http://www.fishwatch.gov/seafood_profiles/species/oyster/species_pages/pacific_oyster_farmed.htm)

### Did you know?

During World War II, the U.S. military contracted with Washington oyster growers to provide oyster meats as source of nutritious protein for soldiers.





# Olympia oyster

## NUTRITION FACT SHEET

*Ostrea lurida*



Photo credit: Sunset Magazine <http://img4.sunset.com/1/>

## San Diego seafood

### Edible portions

- Everything but the shell is edible and is typically prepared
- Oyster shells should always be tightly closed prior to preparation [1]

### Description of meat

- Olympia oysters have a bright, earthy, coppery taste [2]; sometimes described as peppery

### Culinary uses

- Local Olympia oyster is often available fresh from the farm.
- Shucking the shell is manageable. Instructions can be found in multiple online resources (e.g., [4])
- Olympia oysters can be prepared many ways: Freshly on the half shell, fried, steamed, smoked, in soups and stew, and more [2]

### Nutritional information

- Low calorie, easier to digest than red meat, and high in vitamins [3]
- Raw Pacific oyster (50g or 1.8oz) [5]

Nutrition Facts	
Serving Size 50 g	
Amount Per Serving	
Calories 41	Calories from Fat 10
% Daily Value*	
Total Fat 1g	2%
Saturated Fat 0g	1%
Trans Fat	
Cholesterol 25mg	8%
Sodium 53mg	2%
Total Carbohydrate 2g	1%
Dietary Fiber 0g	0%
Sugars	
Protein 5g	
Vitamin A 3%	Vitamin C 7%
Calcium 0%	Iron 14%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	
NutritionData.com	

### Toxicity report

- There are no reported contaminants from local farm raised oyster; wild caught oyster from San Diego are not recommended for consumption without bay water quality and oyster toxicity analyses.

### Seasonal availability

- Farm fresh year round

### References

- [1] Pacific Coast Shellfish Growers Association-PCSGA. <http://pcsga.org/buying-tips/>
- [2] Taylor Shellfish Farms. <http://www.taylorshellfishfarms.com/about-our-shellfish.aspx>
- [3] Sea Grant Washington. <http://www.wsg.washington.edu/oysterstew/news/nutritious.html>
- [4] Localfoods. How to Shuck Oysters. <http://localfoods.about.com/od/shellfishrecipes/ss/How-To-Shuck-Oysters.htm>
- [5] Seafood Health Facts. Pacific Oyster, 2013. [http://seafoodhealthfacts.org/seafood\\_choices/](http://seafoodhealthfacts.org/seafood_choices/)

### Did you know?

Olympia oyster was very popular in the 1800s during the Gold Rush. Mark Twain loved them so much he put them on his “fantasy menu” along with his other favorite foods.



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## CULINARY INFO SHEET

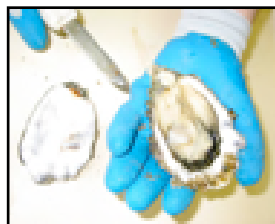
### STEP 1: SHUCK

#### Tools:

- Shucking or oyster knife
- Garden gloves

#### Method:

1. **TWO TECHNIQUES** are side-entry and hinge-entry shucking, presented here is the hinge-entry shucking method [1]
2. **POSITION** oyster cupped side down, with the hinge facing you (Fig.1).
3. **SEPARATE** Insert the tip of the oyster knife between the two shells where twisting motion to gently pry the shells slightly apart. Move the blade forward along the "roof" of the top shell and sever the adductor muscle where it joins the top shell (approximately the "2 o'clock" position, fig. 2,3). When the muscle has been severed, the top
4. **PRY APART** Gently pry the top shell away from the bottom shell with the knife blade. With the shells just slightly apart, use the knife blade to gently scrape any remaining oyster tissue off the inner top surface of the shell. Remove the top shell (Fig. 4).
5. **FINISH** Move the knife blade underneath the oyster meat and cut the adductor muscle where it is attached to the bottom shell (fig. 5)



### STEP 2: PREPARE

#### Appetizer | Baked Oysters Brownfeller

From: Alton Brown, Food Network [3]

#### Ingredients (serves 4):

- 24-28 oysters on half shell with liquor
- 6 tbsls unsalted butter
- 3/4 c finely chopped onion
- 3/4 c finely chopped celery
- 1 tsp kosher salt, divided
- 1 tbsls minced garlic
- 14 oz artichoke hearts, drained, finely chopped
- 1 c panko bread crumbs
- 2 tsp finely chopped lemon zest
- 1/2 tsp freshly ground black pepper
- 1 tsp dried oregano



Photo: [kolorblindmag.com](http://kolorblindmag.com)

#### Method:

1. Preheat oven to 425°F. Melt butter in a 12" saute pan over med-low heat.
2. Increase heat slightly and add onion, celery, 1/2 tsp salt; cook for 5-7 min. Add garlic & cook for another 1-2 min.
3. Reduce heat to low; add artichoke, bread crumbs, zest, 1/2 tsp salt, pepper, oregano. Cook for 2-3 min, remove from heat.
4. Set shucked oysters on a bed of rock salt (4 c) on a sheet pan with sides, spoon mixture evenly over oysters.
5. Bake for 10-12 min until bread crumbs are lightly browned. Serve immediately.

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#### Appetizer | Grilled Oysters

Adapted from Simply Recipes [2]

#### Ingredients (serves 4):

- 24 whole live oysters
- 2 cloves garlic, finely minced
- 3 tbsls extra virgin olive oil
- 3 tbsls unsalted butter
- 1 tsp lemon juice
- 1/2 tsp chili pepper flakes
- 1/4 tsp salt
- cracked black pepper to taste
- 1 tbsls finely minced parsley



Photo: Jaden Hair [2]

#### Method:

1. Heat a small sauce pan over med-low heat, add olive oil & butter when hot.
2. Add garlic and sauté for about 30 sec, add rest of ingredients and turn off heat.
3. Place shucked oysters on a bed of rock salt or rice in a baking pan, spoon a little sauce on each oyster and place entire pan on a hot, pre-heated grill for about 5-6 min.

#### SERVING SUGGESTIONS:

Unshucked oysters will open if placed in a pan on a hot grill for about one minute.

#### OTHER RECIPE IDEAS:

Oyster soup, or raw with a squeeze of lemon and dash of hot sauce



#### References

- [1] [http://wdfw.wa.gov/fishing/shellfish/oysters/how\\_to\\_schuck.html](http://wdfw.wa.gov/fishing/shellfish/oysters/how_to_schuck.html)
- [2] [http://www.simplyrecipes.com/recipes/grilled\\_oysters/](http://www.simplyrecipes.com/recipes/grilled_oysters/)
- [3] <http://www.foodnetwork.com/recipes/alton-brown/baked-oysters-brownfeller-recipe.html>