

# rock crabs

## BIOLOGY FACT SHEET

red: *Cancer productus*  
yellow: *Cancer anthonyi*  
brown: *Cancer antennarius*



yellow rock crabs in pre-mating embrace taken  
at 70' at La Jolla Shores by Volker Kilian

<http://week.divebums.com/2009/Apr27-2009/>

## San Diego seafood profiles

### Taxonomic description

- Distinguished by their broad carapaces (outer shell) and claws [2]
- Males have slender abdomens and are larger than females, which have broad abdomens where they carry eggs [1,2]
- These crabs grow to different sizes, but rarely exceed 20 cm (8") in width. [1]
- The red rock crab is brick red in color, the brown crab is dark brown with red spots, the yellow crab is light brown to pale yellow with no spots [2]

### Distribution

- Found along California's coastline, from Baja California to Washington [2]
- Though the three species ranges overlap, red rock crab is most common in northern California, the brown crab in central California and the yellow crab in southern California [1]

### Life history

- Grow in steps, molting the external shell at each step [1].
- Mating occurs throughout the year, but peaks in Spring in California, and happens when females have soft shells just after molting [1].
- Three months after mating, eggs are produced and then fertilized from a sperm packet left by the male during mating. The female carries the eggs for six to eight weeks until they hatch [1].
- Larvae are planktonic and go through seven developmental molts before settling to the bottom as juveniles [1].

### Habitat

- Found mostly from the low intertidal to greater than 100 m (328 feet) depth [1].

- Are commonly found in rocky substrates, except for the yellow rock crab which lives on sandy bottoms [1].
- Act as predators and scavengers, using their claws to feed on shelled animals such as snails and clams [1]
- As juveniles they are prey to commercial fishes and invertebrates like octopus [2].
- Adults contribute to the diet of the threatened southern sea otter and other species [2].

### References

- [1] Leet, W.S. 2001. Rock Crab. California's Living Marine Resources: A Status Report. California Department of Fish and Wildlife.
- [2] Carroll, J.C., R.N. Winn. 1989. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Pacific Southwest)-brown rock crab, red rock crab, and yellow crab. U.S. Fish Wildl. Serv. Biol. Rep. 82(11.117). U.S. Army Corps of Engineers, TR EL-82-4. 16 pp
- [3] Schmitt, W. L. "The Marine Decapod Crustacea of California:." Google Books. N.p., n.d. Web. 7 Aug. 2013.

### Did you know?

Crustacean chivalry: Males will often guard a female who is preparing to molt, by holding her under his abdomen [2].

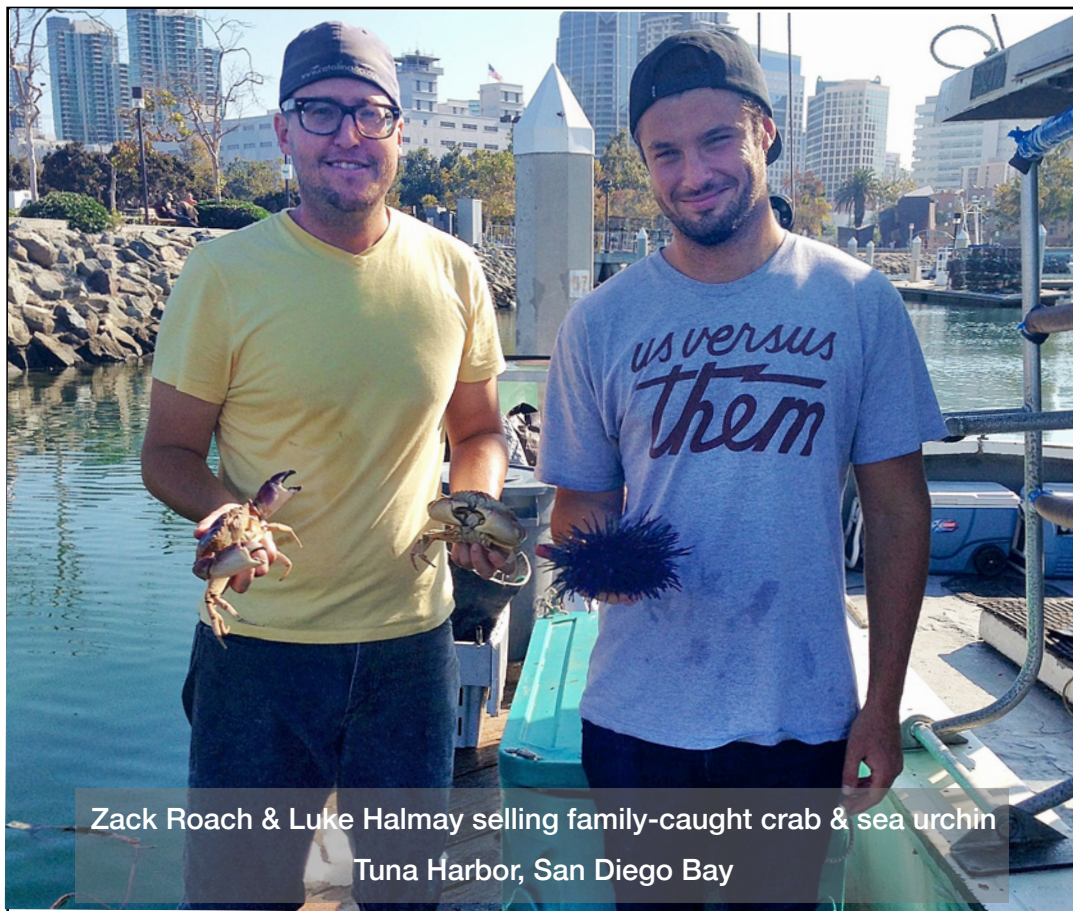
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## FISHERY FACT SHEET

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Zack Roach & Luke Halmay selling family-caught crab & sea urchin  
Tuna Harbor, San Diego Bay

## San Diego seafood profiles

### Seasonal availability

- Year-round [i]

### Managing authority

- As of 2002, the Fish and Game Commission was authorized to adopt regulations to manage annual general trap permits & catch regulations in accordance with the Marine Life Management Act of 1998 [ii]

### Gear type

- Baited rectangular traps made of welded mesh or collapsible plastic attached to a buoy.
- Most commercial trapping occurs 27-73 m (90-240 ft) deep on open sandy bottoms or nearby rocky reefs [ii]
- Commercial crab boats are typically small & may set 200+ traps, which must each be raised & emptied every 96 hrs, weather permitting [ii]
- Prior to 1991, only the trapped crabs' claws were harvested; clawless crabs were returned to the ocean with the hope that claws would

regenerate. Today, it is illegal to harvest only claws and most are landed alive for sale at fresh fish markets [ii]

### Status of the fishery

- There is little to no information on the fishery in California
- One of the only major near shore fisheries with no restricted access and a low capital entry requirement; if these factors result in increased fishing pressure (high intensity for long periods of time), reductions in crab abundance and size may result [ii].
- The fishery is sustained by setting a minimum harvest on pre-reproductive crabs (<4.25 in. width at widest part of the body shell) and by including a 3.24 in escape ring on traps [i]
- Beneficial future management efforts include: increased collaborative data collections, testing effects of a restricted access program in areas of high fishing intensity, gear modifications to reduce bycatch of other species [ii].

### Potential ecosystem impacts

- No information is available for this particular fishery, but use of baited traps in general may lead to unintended catch, damage to seafloor in rough conditions, and entanglement of marine mammals in buoy lines. Solutions exist for most of these potential effects (e.g., release of bycatch, breakaway lines) [iii]

### References

- [i] California Fish and Game Commission. Marine Region. 2013. California Commercial Fishing: Commercial Fishing Digest. State of California.
- [ii] Parker, D.O. 2002. Annual Status of the Fisheries Report. California Dept of Fish & Wildlife. Marine Region.
- [iii] Monterey Bay Aquarium. 2013. Fishing Methods Fact Card: Traps and Pots. [www.montereybayaquarium.org/cr/cr\\_seafoodwatch/content/media/MBA\\_SeafoodWatch\\_TrapsandPots&TrawlingFactCards.pdf](http://www.montereybayaquarium.org/cr/cr_seafoodwatch/content/media/MBA_SeafoodWatch_TrapsandPots&TrawlingFactCards.pdf)
- [iv] Parker, D.O. 2001. Rock Crabs. California's Living Marine Resources: A Status Report. Calif Dept of Fish & Game.

### Did you know?

NorCal is missing out: 85-90% of the commercial rock crab landings are in southern California, because the Dungeness crab is the fishery focus in northern California [iv].





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## NUTRITION FACT SHEET

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Photo: <http://www.catalinawholesale.com>

## San Diego seafood profiles

### Edible portions

- Claw meat is most commonly eaten, however the entire crab may be used in some recipes.

### Culinary uses

- Crack the shell as you would an egg: be gentle to not destroy the contents [3]
- Use the claws, or crack the entire shell & clear out guts, to cook in sauce or broth.
- Meat does not re-heat well, but freezes well so freeze until ready for use [4].
- Easy preparation ideas:
  - boil the claws in a broth containing your favorite seasoning and serve with melted butter or mayo
  - cook whole cleaned crab in tomato-based sauce for pasta or pizza
  - cook claws in cioppino, paella, or seafood stew
  - steam or boil claws, remove meat and use in crab cakes or casseroles.

- Popular dishes include crab cakes, bisques and chowders, pastas, and even crab mac-n-cheese [5].

### Nutritional information

Hard shell crab, steamed [1]

#### Nutrition Facts

Serving Size 1 cup, cooked, flaked and pieces

Amount Per Serving  
Calories 119      Calories from Fat 19

	% Daily Values*
Total Fat 2.08g	3%
Saturated Fat 0.267g	1%
Polyunsaturated Fat 0.796g	
Monounsaturated Fat 0.328g	
Cholesterol 117mg	39%
Sodium 708mg	30%
Potassium 379mg	
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 0g	
Protein 23.64g	

Vitamin A 0%      Vitamin C 6%  
Calcium 12%      Iron 6%

\* Percent Daily Values are based on a 2000 calorie diet.  
Your daily values may be higher or lower depending on your calorie needs.

Nutrition Values are based on USDA Nutrient Database SR18

### Description of meat

- Claw meat is very sweet

### Toxicity report

- No known contaminants.

### Seasonal availability

- Available fresh year-round [2]

### References

- [1] Falsecret. 2013. Steamed Hard Shell Crab. [www.falsecret.com/calories-nutrition/generic/crab-hard-shell-steamed](http://www.falsecret.com/calories-nutrition/generic/crab-hard-shell-steamed)
- [2] California Fish and Game Commission. Marine Region. 2013. California Commercial Fishing: Commercial Fishing Digest. State of California
- [3] <http://vimeo.com/54756986>
- [4] Shaw, H. 2013. Pacific Red & Rock Crabs: Cheap & Plentiful. Fish & Seafood Cooking. About.com. [http://fishcooking.about.com/od/meetyourfish/p/Pacific\\_crab.htm](http://fishcooking.about.com/od/meetyourfish/p/Pacific_crab.htm)
- [5] Santa Monica Seafood. 2012. Introducing Pacific Stone Crab Meat!. [www.santamonicafood.com/blog/2012/04/10/introducing-pacific-stone-crab-meat/](http://www.santamonicafood.com/blog/2012/04/10/introducing-pacific-stone-crab-meat/)
- [6] Amistaadt, A.J. How to cook red rock crab. eHow. [http://www.ehow.com/how\\_5057747\\_cook-red-rock-crab.html](http://www.ehow.com/how_5057747_cook-red-rock-crab.html)

### Did you know?

For rock crabs 4-6" wide, figure on 8-10 crabs per person if just using the claws [6].

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## CULINARY INFO SHEET

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## STEP 2: PICKING COOKED CRAB

### Tools:

- Nutcracker
- Newspaper (picking gets messy!)

### Method:

1. **PREP** Remove each claw by grabbing the base and pulling it away. If the crab is small (top shell is <5½" wide), discard the body or use it in stocks or sauces. If the crab is big also pick the body and legs for meat.
2. **PICKING CLAW MEAT** Pull the lower part of each claw off. This often pulls the inner claw meat with it, but if needed pinch the meat and pull it away from the cartilage
3. **Crack the rest of the claw** and knuckles with a nutcracker. Gently increase pressure until the claw is cracked, then pick away the shell and extract the meat. If you crush it too forcefully, you will mash the meat and bits of shell will get into it.
4. **PICKING BODY MEAT** Slip your finger under the plate on the bottom of the crab, peel it back by grabbing the base of it, and pull the whole thing away.
5. **Open the body** by wedging your thumbs on opposite sides of the body (fig.1), then pull the top of the crab away from the bottom of the crab. Start cleaning the inside by grabbing the front end of the crab and pinching away the whole mass.
6. **Remove** the feathery gills that line the side of the body, and throw them away. Scrape out the greenish stuff (the liver, also called "mustard"); it's edible and many love it. If you have a female crab you may see bright orange roe, or eggs. Some eat this warmed and served on toast, put into crab cakes, or added to crab soups.
7. **Pick** out the meat located in cartilage-lined channels in each side of the body.



Photo: [http://fishcooking.about.com/od/crablobsterrecipes/ss/crab\\_picking.html](http://fishcooking.about.com/od/crablobsterrecipes/ss/crab_picking.html) [1]

## San Diego seafood profiles

### STEP 1: COOKING

### Prep | Boiling rock crab

Adapted from [www.ehow.com](http://www.ehow.com) [2]

### Tools:

- Live rock crabs
- Large lobster pots, at least 2
- Salt

### Method:

1. Fill a pot with very cold water, add a couple of trays of ice and set it aside.
2. Fill another pot with water up to 3-4" from the top. Add ¼ cup of salt for each gallon of water, and bring to a rolling boil.
3. Drop the crabs into the boiling water one at a time, taking care not to overcrowd the pot. Each crab should move freely about in the water with the boiling action. If you have a lot of crabs, cook them in batches.
4. Once the crabs have been added and the water stops boiling, cover the pot. Return it to a boil, and continue to cook for 12-15 minutes. When the crabs begin to float to the surface of the water, cook for another 2-3 minutes.
5. Remove the crabs from the boiling water with tongs and plunge them immediately into the pot of ice water to halt the cooking process and prevent shrinkage and drying of the meat.
6. Cool the cooked crabs in the ice water for 3-4 minutes. Remove them from the water and drain them. You can let them cool further if they're still too warm to handle comfortably with your fingers. It's all right to begin picking out the meat at any time after removal from the ice water.
7. Put any unused whole cooked crabs into plastic sealable food storage bags. They'll keep in the refrigerator for up to a week.



Photo: <http://seattlefoodshed.wordpress.com>

## STEP 3: PREPARING

### Light Entrée | Crab Cakes

Adapted from Linda Check, [allrecipes.com](http://allrecipes.com) [3]

### Method:

1. In a medium bowl, whisk together egg, mayonnaise, lemon juice, red pepper flakes, tarragon, and scallions. Gently stir in crabmeat, being careful not to break up meat. Gradually mix in cracker crumbs, adding until desired consistency is achieved.
2. Heat oil in a skillet over medium heat. Form crab mixture into 4 patties. Place patties in skillet, and cook until golden brown, about 5 to 6 minutes on each side.



Photo: Jessica, [allrecipes.com](http://allrecipes.com)

### Ingredients (serves 4):

- 1 egg
- 3 tbsl mayonnaise
- 4 tsp lemon juice
- 1/8 tsp red pepper flakes
- 1 tsp dried tarragon
- 1 tbsl minced green onions
- 8 ounces crabmeat
- 1/2 cup crushed buttery round crackers
- 1 tbsl butter or olive oil

Picking a crab seems like a lot of work, but you'll get the hang of it and be picking crabs in a few minutes each.

### SERVING SUGGESTIONS:

Crab meat can be picked before serving for use in recipes, or after serving to be eaten right from the shell.

### OTHER RECIPE IDEAS:

Try crab meat in dip, soup, salad, scampi, pasta dishes or simply out of the shell with a little lemon.



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### References

- [1] [http://fishcooking.about.com/od/crablobsterrecipes/ss/crab\\_picking.html](http://fishcooking.about.com/od/crablobsterrecipes/ss/crab_picking.html)  
[2] [www.ehow.com/how\\_5057747\\_cook-red-rock-crab.html](http://www.ehow.com/how_5057747_cook-red-rock-crab.html)  
[3] <http://allrecipes.com/Recipe/Best-Ever-Crab-Cakes/Detail.aspx?ev19=1>