

# Red and Green Urchins

## SPECIES

Red Urchin (*Strongylocentrotus fransiscanus*)

Green Urchin (*Strongylocentrotus droebachiensis*)

## ABOUT

Sea urchins are invertebrates belonging to phylum *Echinodermata*, class *Echinodea* and are related to sea cucumbers and sea stars. They are found on most rocky subtidal habitats in British Columbia (BC) from just below the low tide line to 130 metres (426 feet) but are common between 4 - 30 metres (13 - 90 feet). Urchins prefer rocky ground and avoid rocky areas exposed to extreme wave action and areas with sediments such as sand and mud.



Red sea urchin and roe

The larger red urchins recruit to the fishery at 90 mm (3.5 inches), while the smaller green urchins recruit to the fishery at 55 mm (2.2 inches). The red urchin dive fishery was primarily in northern coastal areas of BC but fishing effort is redistributing southward. The green urchin dive fishery is primarily in southern coastal areas.

Harvested primarily for the roe or uni, sea urchin is popular served fresh and uncooked as sushi. It is also used in soups, custards and other seafood dishes as a flavour enhancer.

## STOCK STATUS

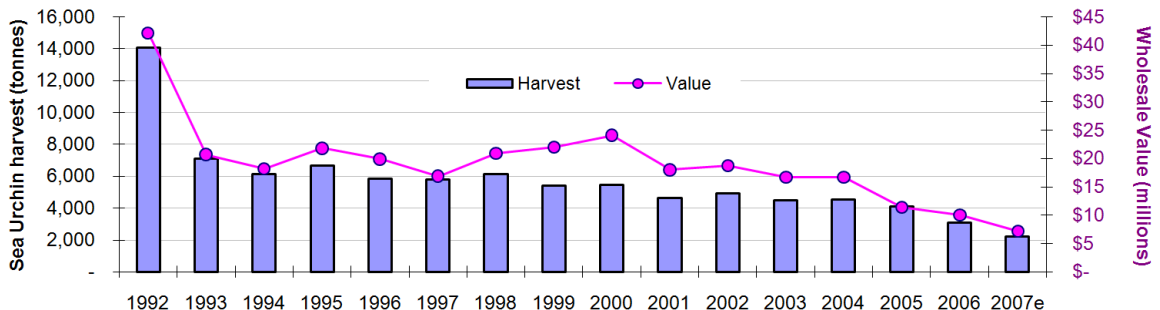
Urchin stocks are considered stable and healthy by long-term historical standards (*DFO - Fisheries Management*).

## MANAGEMENT

BC's urchin fishery is managed federally by Fisheries and Oceans Canada (DFO). The red urchin fishery is managed through limited entry licensing, size limit, area licencing, total allowable catch (TAC), area quotas, equal individual quotas (IQs), hail out/hail in, designated landing ports, dockside validation, area openings/closures, harvest logs, fish slips, licence stacking (restrictions), quota overage restrictions, on-grounds monitoring in northern coastal areas has been suspended due to costs. The green urchin fishery is managed similarly to red, but with no area licencing, on-grounds monitoring, or biological sampling. (*DFO - Fisheries Management*).

## PRODUCT VALUE

**Red:** 2,200 tonnes at \$7.2 million (wholesale) in 2007; **Green:** 60 tonnes at \$1.0 million (wholesale) in 2007. Urchin landings and value have been declining since 2004 (*BC Seafood Industry Year in Review*).



e: estimate

**LIFE HISTORY**

Urchins are small and spherical slightly compressed dorso-ventrally, with red or green shells. Reds are larger with longer spines, mature at 50 mm (2 inches). Greens are smaller with shorter spines and are more mobile. Like most echinoderms, urchins have fivefold symmetry and move by means of hundreds of tiny, transparent, adhesive tube feet.

Sea urchins spawn between June and September in southern BC. The fertilized eggs develop into planktonic larvae before settling on the bottom where they change into tiny juvenile sea urchins. Young sea urchins emerge from shelter when approximately 40 mm (1.6 inches) in diameter and forage freely over the rocky sea bottom. Adulthood is attained at approximately 70 mm (3 inches) diameter and legal size of 90 mm (3.5 inches) is reached in five to ten years. Both species are considered slow growing and long lived with life span sometimes exceeding 30 years; red urchins can live up to 100 years.

Sea urchins graze on attached or drift seaweed and kelp. Combined feeding activities by aggregations of sea urchins can remove all large plant material in areas leaving "sea urchin barrens". Sea urchins are readily eaten by some sea stars, crabs, and sea otters.

**PRODUCTS**

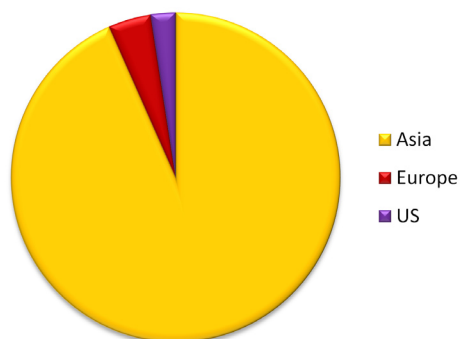
Urchin is available live or fresh whole, and fresh and frozen urchin roe. Reds are shipped cleaned as roe to Japan; greens are shipped as whole live product.

**PRODUCT MARKET**

Market is primarily for fresh roe to Japan. Small markets exist in France, United States and Canada.

**MARKET TREND**

Green and red urchin markets have collapsed due to competition from Russian products from illegal, unregulated and unreported fisheries (IUU).

**LINKS**

DFO - Fisheries Management Plans: [www.pac.dfo-mpo.gc.ca/ops/fm/fishmgmt\\_e.htm](http://www.pac.dfo-mpo.gc.ca/ops/fm/fishmgmt_e.htm)

BC Seafood Industry Year in Review: [www.env.gov.bc.ca/omfd/reports/index.html](http://www.env.gov.bc.ca/omfd/reports/index.html)

Pacific Urchin Harvesters Association (PUHA): [www.puha.org](http://www.puha.org)

BCSeafood.ca: [www.bcseafood.ca/index.php](http://www.bcseafood.ca/index.php)

Fish and Seafood Online: <http://www.ats-sea.agr.gc.ca/sea-mer/index-eng.htm>