

## Marine Fish – Herring Spawn – Cumulative Habitat Index

### description

Pacific herring (*Clupea pallasii*) is a small fish with a compressed body, about 15 to 25 centimetres in length at maturity. It has a deeply forked tail, a silver belly and a blue-green back. They are usually found offshore, but each spring Pacific herring move into protected inlets on the coast to spawn. Females lay approximately 20,000 eggs, which are sticky and adhere to eelgrass, kelp and other objects. Because schooling and spawning occur in very high densities, the water often appears milky over the entire spawning area due to the presence of abundant milt (sperm).

Locations where herring spawn are ecologically important for many reasons. At the BC Marine Conservation Analysis (BCMCA) ecological workshops, experts recommended including herring spawn locations in our list of representative ecological features for these reasons:

- as a surrogate for pelagic seabirds in general, and for nearshore Scoter species in particular,
- because of the intrinsic value of herring as a forage fish and the importance of spawning areas to the species,
- to aid in the identification of priority eelgrass beds and subtidal vegetation.

This map is a representation of cumulative herring spawn habitat index (SHI) data obtained from Fisheries and Oceans Canada, based on approximately 30,000 spawn records. These data illustrate the historical (1928-2009) frequency and magnitude of herring spawning events along British Columbia's convoluted shorelines. The source data, available at Fisheries and Oceans Canada (DFO) website, contains geographic coordinates and SHI values for each kilometre of BC shoreline. BCMCA did not modify the source data, but did compute average SHI values by BCMCA planning unit (2 kilometres x 2 kilometres), and then classify the planning units using the same class breaks that DFO uses to classify spawning habitat by shore unit.



PHOTO: YEEN SAMPSON



PHOTO: JOHN BROUWER

### data sources

- Fisheries and Oceans Canada

### data resolution

- Source data is provided for shore units that are roughly one kilometre in length.

### date compiled

- SHI data was obtained by the BCMCA in May 2009 and represents long-term spawn (cumulative from 1928).

### reviewers

- Bruce McCarter, Fisheries and Oceans Canada

### reviewer comments

- This map does not represent spawning areas currently utilized nor does it represent spawning areas anticipated but rather it is a representation of the spawning areas that have been recorded throughout the entire period of data collection.

### caveats of use

- There is considerable inter-annual variation in the location and magnitude of herring spawn.
- The spawn habitat index is recalculated following herring spawn surveys annually. The DFO website should be checked regularly for updated values. Efforts and resources required to measure and map herring spawning areas have and will continue to change. Refer to: [www.pac.dfo-mpo.gc.ca/sci/herring/bulletin\\_e.htm](http://www.pac.dfo-mpo.gc.ca/sci/herring/bulletin_e.htm) for further interpretative caveats.
- Recommended date of expiry for use of these data in a marine planning context: 2012

### map, feature data and metadata access

- Visit [www.bcmca.ca/data](http://www.bcmca.ca/data) for more information.

### references







- For more information on the data collection, and process of developing the cumulative spawn habitat index see Fisheries and Oceans Canada: [www.pac.dfo-mpo.gc.ca/sci/herring/bulletin\\_e.htm](http://www.pac.dfo-mpo.gc.ca/sci/herring/bulletin_e.htm)

# BCMCA Atlas

## Marine Fish

### Herring Spawn - Cumulative Habitat Index

#### Legend

-  Vital - Top 5%
-  Major - Next 10%
-  High - Next 15%
-  Medium - Next 20%
-  Low - Next 25%
-  Minor - Lowest 25%

Note:  
- Classification is by 2 km x 2 km planning unit and mimics DFO classification of cumulative spawn habitat index.

#### Data Sources:

Fisheries and Oceans Canada (DFO)

#### Base Data:

ESRI Base Data, GeoBase, GeoBC, NOAA, Natural Resources Canada, USGS, Washington State Government

#### Thematic Data:

For more information on data sources and methods please refer to the facing page to this map

Projection: BC Albers NAD83

0 25 50 75 100 125 150

Kilometres

0 25 50 75

Nautical Miles

1:4,250,000 \*

\* Written scales are approximate and are based on a 11 x 17 inch paper size.

Prepared for:



Map template by Caslys Consulting Ltd.

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