

## Marine Birds – Red-breasted Merganser

### description

This atlas page illustrates the best available data that identifies Red-breasted Merganser habitat, derived from surveys conducted year-round. The Red-breasted Merganser (*Mergus serrator*) is a large diving duck with a shaggy crest on the back of its head and a long red-orange bill. Although it is similar to the Common Merganser (*Mergus merganser*), the Red-breasted Merganser breeds and winters further north, and is more commonly seen in salt water habitats. In coastal areas in British Columbia, this species is found near the mouths of rivers, where it feeds on small fish, which it captures underwater with its serrated bill.

Source data used to develop this map consisted of a range of shoreline-based, ground, boat and aerial surveys, which were focused on identifying, counting and recording marine birds. The majority of the surveys were collected at sites with defined boundaries and areas. Surveys collected along transects from each dataset were buffered depending upon observation width described within the source survey methodology in order to generate a survey area.

Observations of the listed species were totalled for each survey location and divided by the area surveyed to generate a density value for each survey location. The densities of all of the survey locations within a single planning unit were averaged and adjusted for survey effort to calculate the illustrated metric, average density of Red-breasted Merganser observations by planning unit. The values were then classified and symbolized using 5 quantiles, meaning that each class consisted of 20% of the non-zero planning units. (A quantile is established by dividing the frequency distribution of a variable into equal groups: that is, each quantile contains the same fraction of the total number of values being measured.)

All of the planning units that were surveyed, regardless of whether Red-breasted Merganser was sighted, were displayed underneath the density layer to illustrate the extent of the planning units that were surveyed.



PHOTO: M. CARTER

### data sources

- Environment Canada (Canadian Wildlife Service) - BC Ferry Surveys
- Environment Canada (Canadian Wildlife Service) – Burrard Inlet Environmental Action Plan: Winter Bird Surveys
- Environment Canada (Canadian Wildlife Service) – Coastal Waterbird Inventory
- Environment Canada (Canadian Wildlife Service) – Moulting Sea Duck Survey
- Environment Canada (Canadian Wildlife Service) - Pelagic Seabird Surveys
- Environment Canada (Canadian Wildlife Service) – West Coast Vancouver Island Waterbird Survey
- Bird Studies Canada - BC Coastal Waterbird Survey
- Capital Regional District – Harbours Atlas

### data resolution

- Weighted averages were calculated for each 2 kilometre x 2 kilometre planning unit.

### data collected

- 1971-2008

### date compiled

- 2010

### reviewers

- Peter Davidson, Bird Studies Canada
- James Kenyon, Ducks Unlimited Canada
- Representatives from Environment Canada, Canadian Wildlife Service

### reviewer comments

- Red-breasted Mergansers generally breed on freshwater wetlands, mostly away from the coast, and are much more numerous in coastal-marine habitats during the non-breeding season (September-March/April).

### caveats of use

- Survey effort is not consistent across all planning units, across all areas of the coast or across all seasons. Areas with no data may not have been surveyed and these data gaps are not necessarily indicative of an absence of Red-breasted Merganser.
- The density values in an area can change over time in response to natural population fluctuations and changes in habitat conditions (natural or anthropogenic).
- The precision of the average density values displayed in the legend is not indicative of the original precision of the survey counts.
- This feature is a compilation of data collected by many people, for different purposes, using different survey techniques with different methodologies within each technique and, therefore, considerable care must be taken when using the data.
- Surveys performed in different seasons will produce different results.
- It is important to note that *in some cases* Coastal Waterbird Inventory surveys recorded only a subset of species present, but BCMCA did not use this information due to sheer volume and complexity of data. As a result, some areas depicted as zero density on this map may actually be ‘no data’ areas rather than true ‘absence’ data.
- Recommended date of expiry for use of these data in a marine planning context: None provided.

### map, feature data and metadata access

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

### references

Species description contains material from:

- B.C. Conservation Data Centre. *Species Summary: Mergus serrator and Mergus merganser*. BC Ministry of Environment (MoE) 2010. 21 Sep. 2010 <http://a100.gov.bc.ca/pub/eswp/>
- Titman, Rodger D. Red-breasted Merganser (*Mergus serrator*). *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. 1999. <http://bna.birds.cornell.edu/bna/species/443>

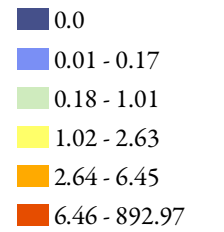
# BCMCA Atlas

## Marine Birds

### Red-breasted Merganser

#### Legend

Birds per square kilometre standardized by effort



Note:  
- Classification based on 5 quantiles.

#### Data Sources:

Environment Canada  
(Canadian Wildlife Service),  
Bird Studies Canada,  
Capital Regional District,

#### 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 \*

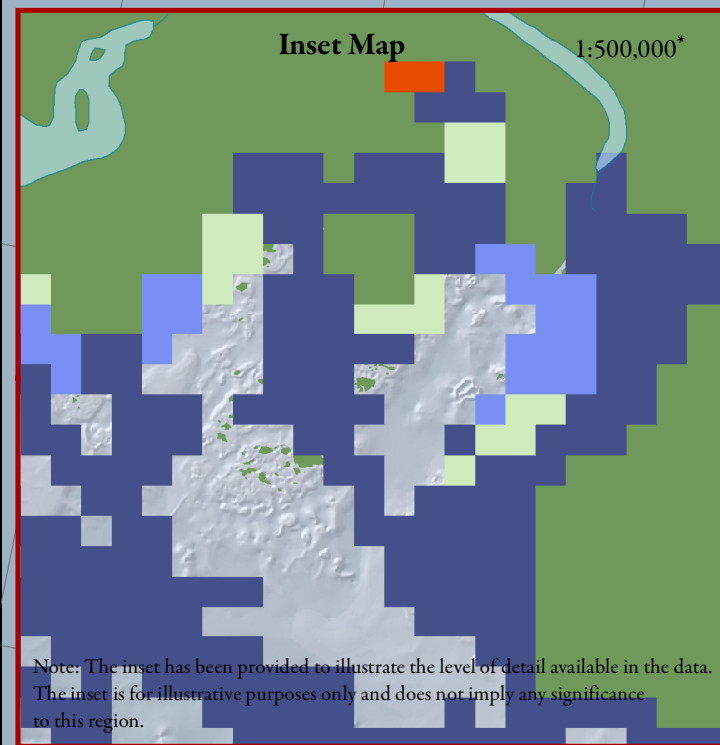
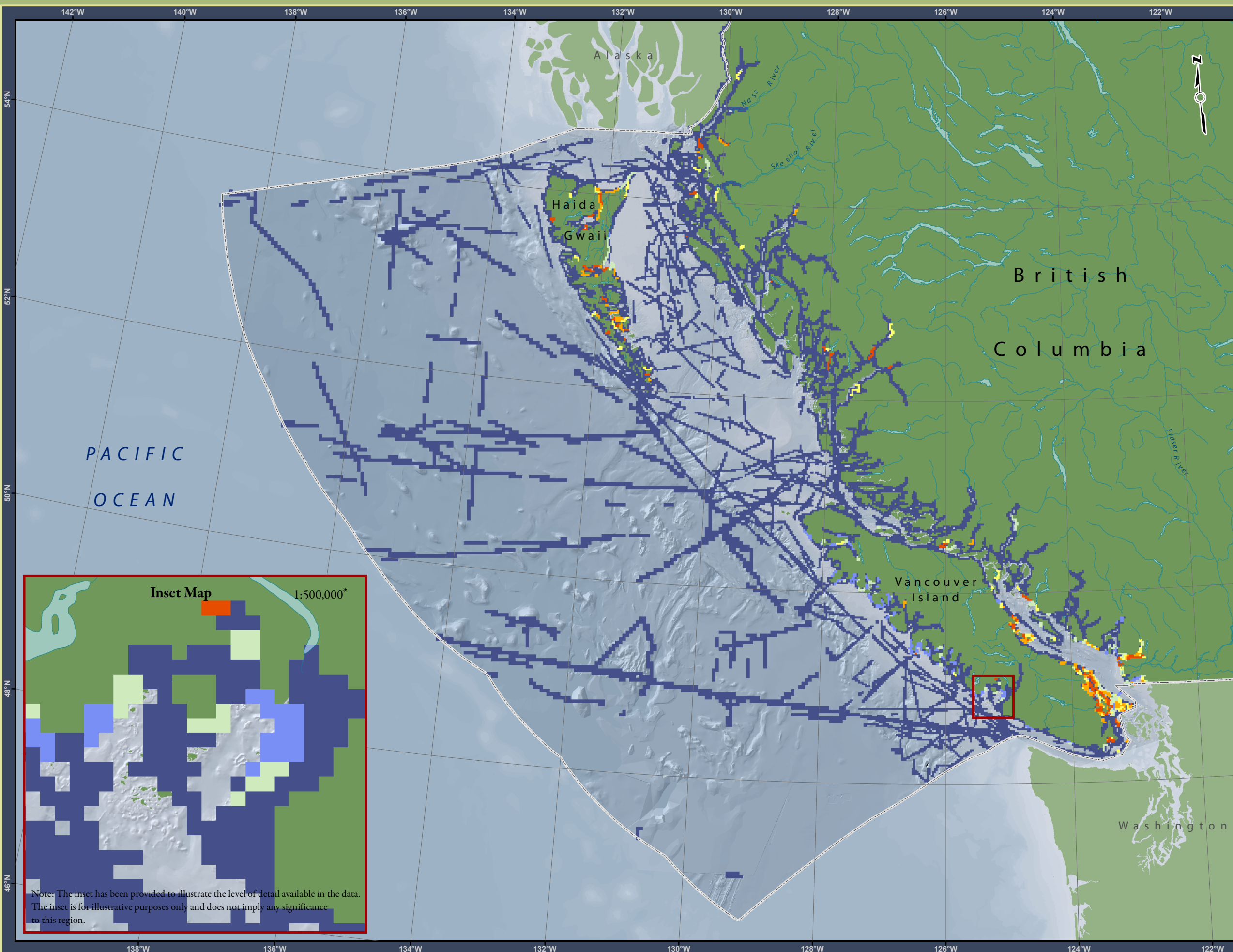
\* Written scales are approximate and  
are based on a 11 x 17 inch paper size.

Prepared for:



Map template by Caslys Consulting Ltd.

August 27, 2010



Note: The inset has been provided to illustrate the level of detail available in the data.  
The inset is for illustrative purposes only and does not imply any significance  
to this region.