

Marine Birds – Double-crested Cormorant Winter Surveys

description

This atlas page illustrates the best available data that identifies Double-crested Cormorant winter habitat, which falls within the months of December through to February. The Double-crested Cormorant (*Phalacrocorax auritus*) is a large, dark marine bird with a long neck and an orange patch of skin at the base of its slender, hook-tipped bill. This is the only species of cormorant in this area that occurs in large numbers in both inland and coastal areas. Most populations are permanent residents throughout the year, with the exception of some inland populations, which move to the coast during winter months.

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 Double-crested Cormorant in the winter 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.)



PHOTO: MIKE BAIRD

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) – 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 and Rob Butler, Bird Studies Canada
- James Kenyon, Ducks Unlimited Canada
- Representatives from Environment Canada, Canadian Wildlife Service

reviewer comments

- Double-crested Cormorant counts are declining. The illustrated distribution could more accurately be referred to as the ‘historical’ distribution, while the present distribution is likely much smaller.

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 Double-crested Cormorant.
- 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.
- Recommended date of expiry for use of these data in a marine planning context: None provided.

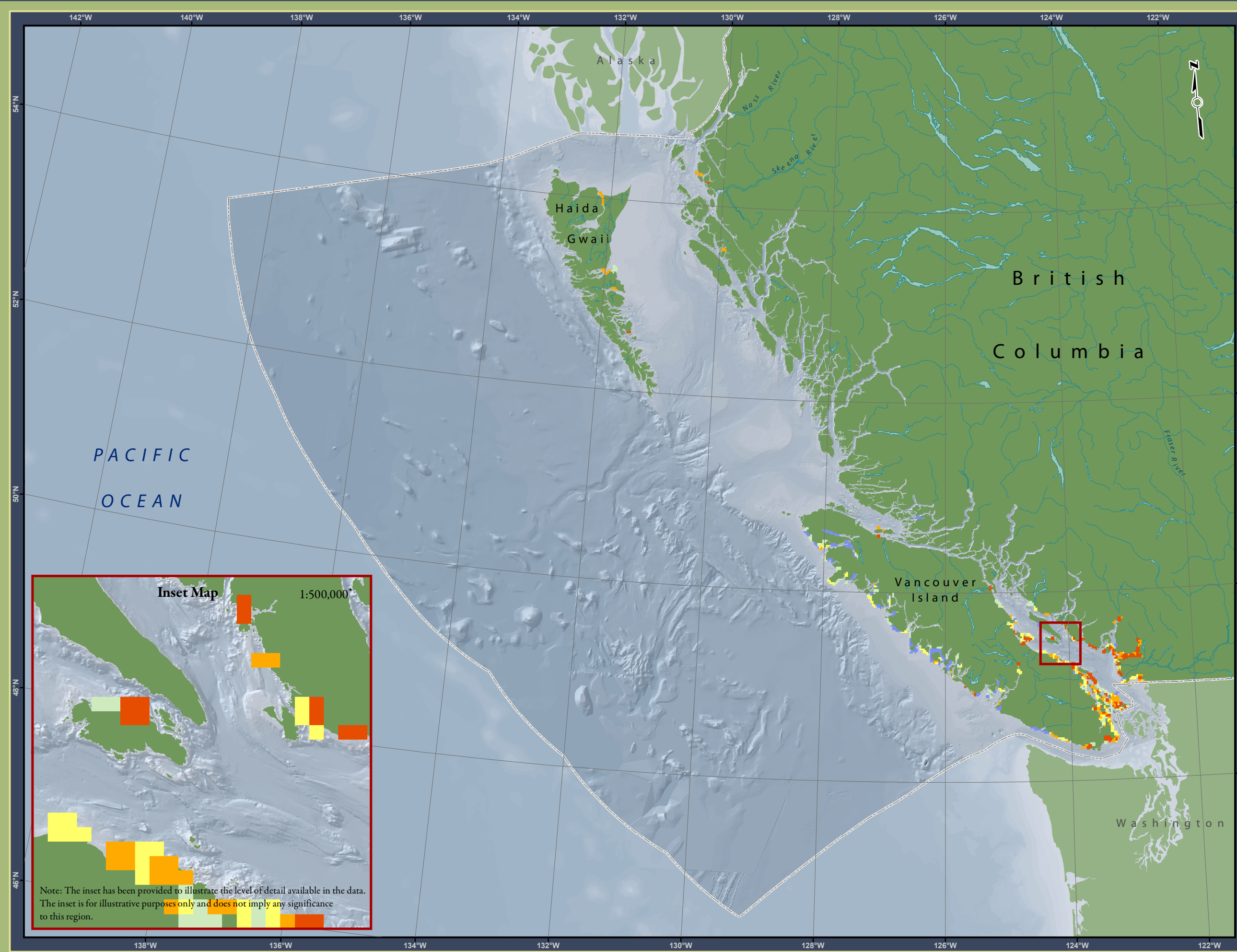
map, feature data and metadata access

- Visit www.bcmca.ca/data for more information.

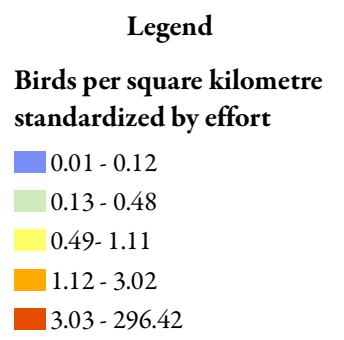
references

Species description contains material from:

- B.C. Conservation Data Centre. *Species Summary: Phalacrocorax auritus*. BC Ministry of Environment (MoE) 2010. 21 Sep. 2010 <http://a100.gov.bc.ca/pub/eswp/>
- The Cornell Lab of Ornithology. *All about Birds*. 2009. www.allaboutbirds.org/guide
- Seattle Audubon Society. *BirdWeb – Seattle Audubon’s Guide to the Birds of Washington*. Revised 2008. www.seattleaudubon.org/birdweb



BCMCA Atlas
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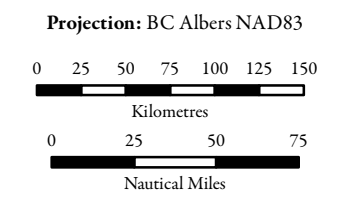


Note:
- Classification based on 5 quantiles.

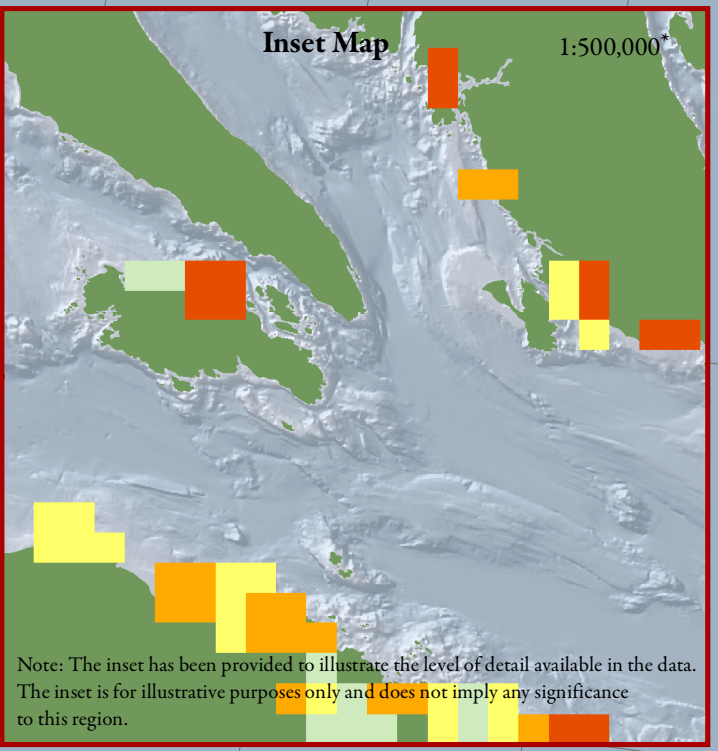
Data Sources:
Environment Canada
(Canadian Wildlife Service),
Bird Studies Canada,
Capital Regional District

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



1:4,250,000 *
* Written scales are approximate and
are based on a 11 x 17 inch paper size.



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.