

PACIFIC GREAT BLUE HERON POPULATION MONITORING ON VANCOUVER ISLAND AND THE SURROUNDING GULF ISLANDS

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The Pacific or Great Blue Heron *fannini* subspecies winters and breeds on Vancouver Island in locations within 5km of the marine shoreline. Due to population concerns and threats associated with urban development, the Province of BC has coordinated monitoring of Great Blue Heron colonies on Vancouver Island and the adjacent Gulf Islands from 1997 through 2015. Starting in 2005, I trained volunteer stewards and technicians to use a standardized methodology to assess heron colonies and nests, locate and count active nests, determine nest success and follow a sample of visible nests to determine productivity of young herons that lived until fledgling age. The data is housed at the BC Conservation Data Centre and provided to local governments and interested parties to support conservation bylaws and urban planning. Each breeding season we assessed between 18 and 37 colonies. Overall colony success rate ranged from a low of 43% in 2008 to 90% in 2010 with an average of 66%. The number of active nests in the study area (The number of active nests in the study period 2013 – 2015) does not show a significant trend with a mean of 536 ± 9 active nests annually. Nest success in sampled nests ranged from a low of 30% in 2005 to 100% in 2015 with an overall average of $65\% \pm 21\%$. Vennesland and Butler (2008 COSEWIC report) estimated that at least 63% of active nests would need to fledge young to maintain Pacific Great Blue Heron populations which occurred in 9 of 14 years analysed. As well, the average annual productivity on Vancouver Island was 1.4 chicks per sampled nest. In only 2006, 2010 and 2012 the productivity exceeded the 1.9 chicks per nest population maintenance threshold estimated by Henny and Bethers in 1971. Bald Eagle predation on chicks and adults appears to be responsible for lower productivity and nest success and colony failures. Another factor in the annual variation of nesting success appears to be cool wet springs (e.g. 2001) which affect egg production and timing of nesting. Great Blue Heron colonies on Vancouver Island appear to be locating closer to urban centres possibly to deter Bald Eagle predation, but this poses vulnerability to disturbance from noise, tree cutting and various building pressures. Management recommendations include: (1) continuation of the heron monitoring program to collect information on colony productivity with the help of the public and various stakeholders, (2) distribution of annual colony data to regional and municipal districts to help inform decision making, (3) installment of a heron webcam at either the Protection Island or Beacon Hill Heron colonies for public outreach and research purposes.