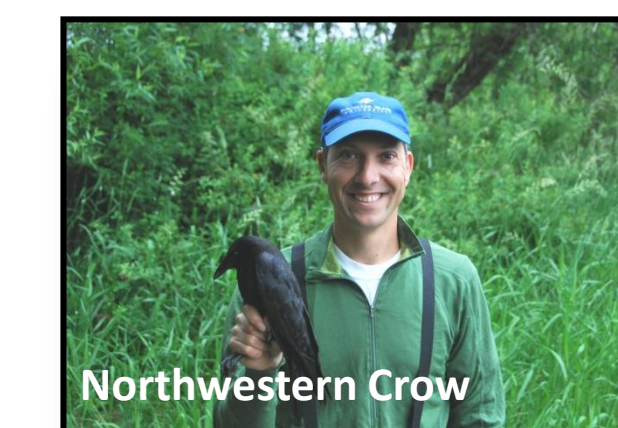


# Vancouver Island University Bird Banding Project at Buttertubs Marsh in Nanaimo, BC



Elsie A. Hampshire and Eric Demers

Biology Department, Vancouver Island University, 900 Fifth Street, Nanaimo, BC, V9R 5S5  
Elsie.Hampshire@gmail.com; Eric.Demers@viu.ca



## OVERVIEW

Urban parklands are gaining more recognition as important wildlife habitats in otherwise fragmented landscapes.<sup>1</sup> In particular, these green spaces can provide important breeding, stopover and wintering habitats for songbirds.<sup>2</sup>

The Buttertubs Marsh wetland complex located within the City of Nanaimo, BC, is an example of a productive urban parkland habitat with significant ecological value. This 53-hectare urban park, jointly managed by the City of Nanaimo, Ducks Unlimited Canada and the Nature Trust of BC, encompasses a mixture of ecosystem types, including marsh and shallow water, riparian areas, upland forest and old-field habitats (Fig. 1).

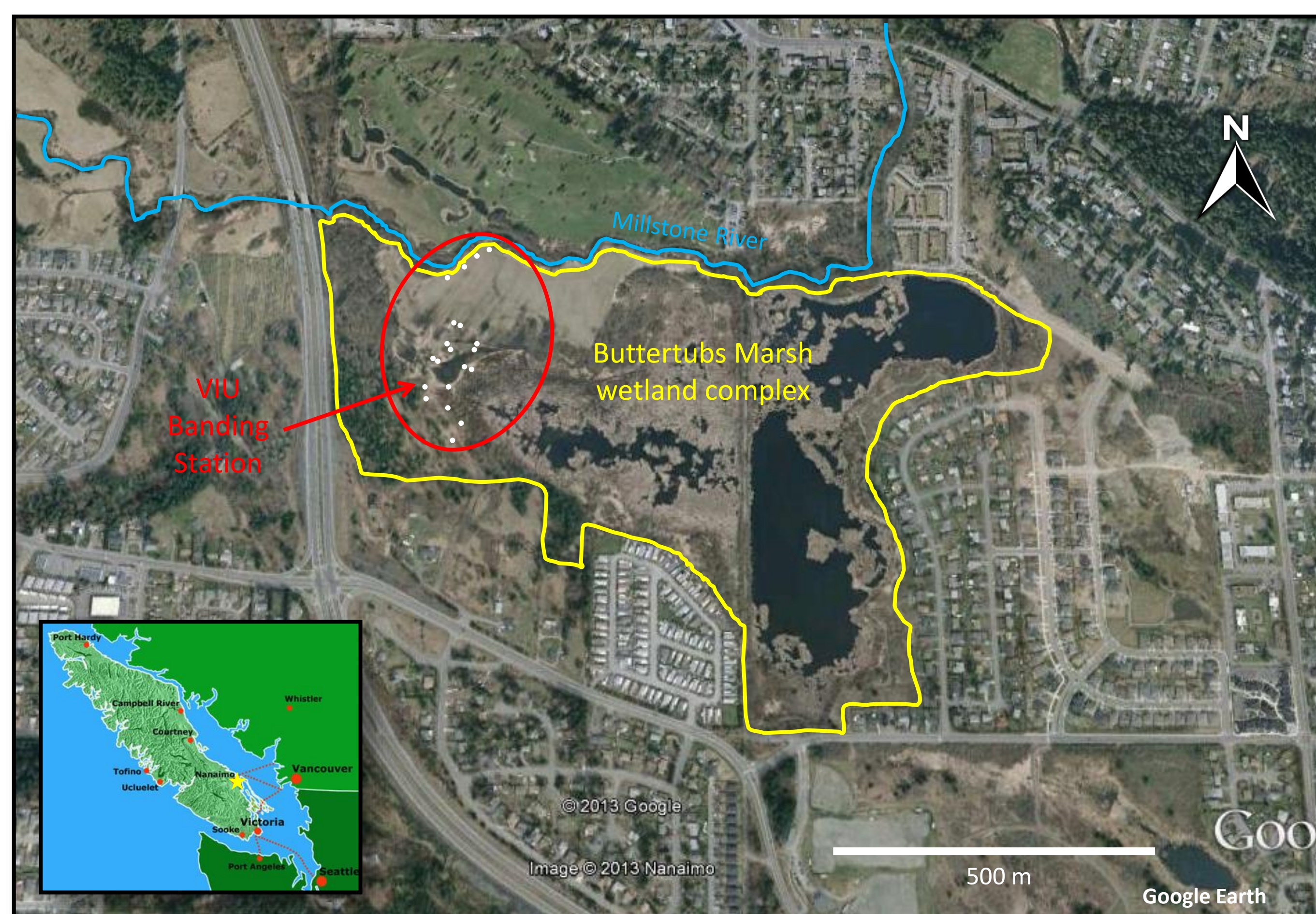


Figure 1. Aerial photograph of the Vancouver Island University (VIU) banding station within the Buttertubs Marsh wetland complex in Nanaimo, BC.

In 2013, Vancouver Island University established a bird banding project at Buttertubs Marsh, with objectives to:

- monitor use of the park by migrant, breeding and resident birds; and,
- provide practical educational and training opportunities for students and community volunteers.

## METHODS

- Twenty mist-nets stratified among the old-field, riparian and upland forest habitats are operated 1-4 days weekly between March and October.
- Each captured bird is processed as follows: species identification, band application, age / sex determination, fat score, biometrics (e.g., wing chord and tail length, mass).



## RESULTS

Since 2013, a total of 4,843 birds from 57 species have been captured (Table 1). Capture rate ranged from 37.6 to 51.0 birds per 100 net-hours, and was highest during the first year of the project. The proportion of recaptures has remained relatively constant between years.

Table 1. Mist net capture statistics at the Vancouver Island University banding station during 2013-2015.

Parameter	2013	2014	2015
Number of birds banded	1,130	1,212	887
Number of recaptures	560	654	400
Total	1,690	1,866	1,287
Recapture rate (%)	33.1%	35.0%	31.1%
Capture effort (net-hours)	3,316	4,960	3,048
Capture rate (birds per 100 net-hours)	51.0	37.6	42.2
Number of species	49	46	44

Capture rate varied each year between seasons, reflecting breeding, dispersal and migration (Fig. 2). Capture rates generally increased each year, with the highest levels observed during fall migration (especially 2013).

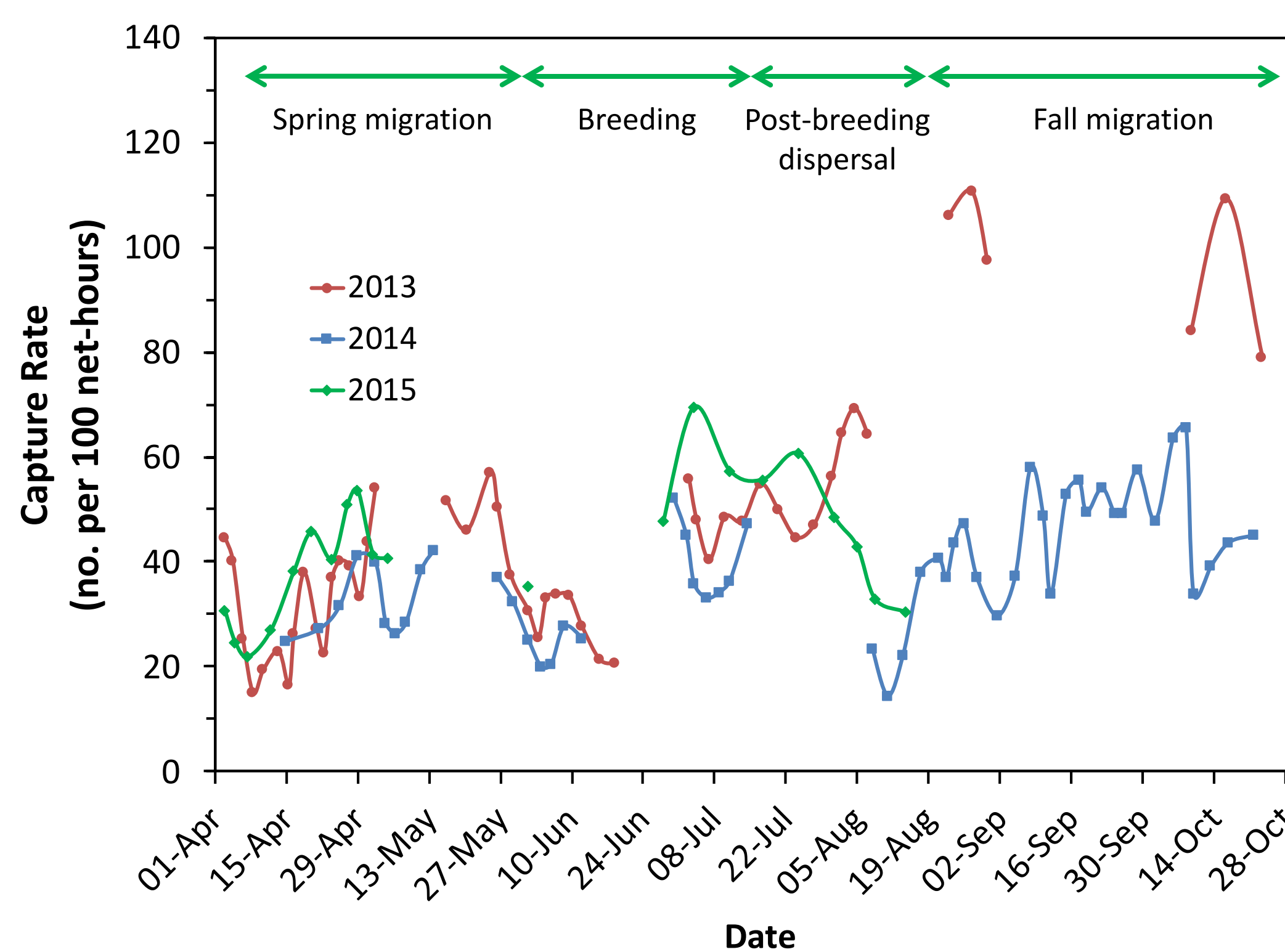
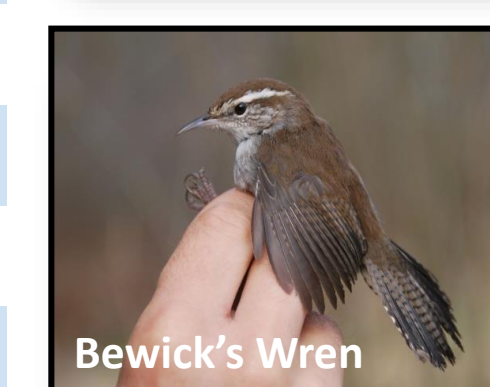
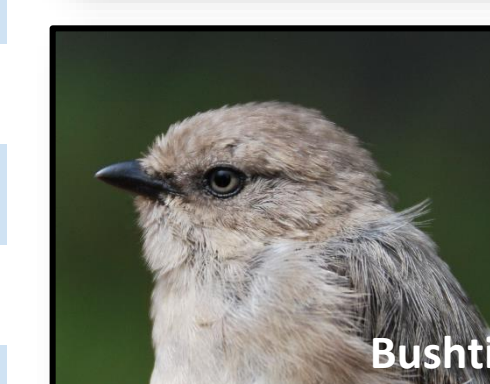
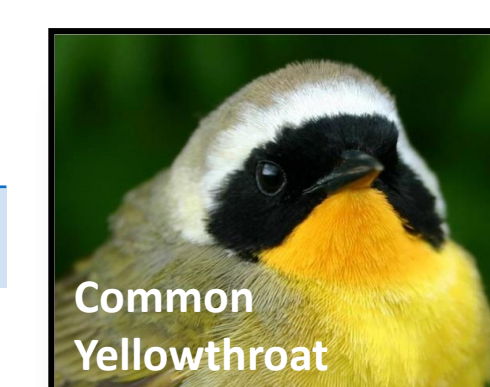


Figure 2. Weekly moving average of capture rate in mist nets at the Vancouver Island University banding station during 2013-2015.

Together, Common Yellowthroat and Song Sparrow are the two most common species captured at Buttertubs Marsh (Table 2). All species listed breed at the site, except for Lincoln's Sparrow which is only caught during spring and fall migration.

Table 2. Number captured and rank (in parentheses) of the ten species most captured in mist nets at Buttertubs Marsh during 2013-2015.

Species	2013	2014	2015
Common Yellowthroat	493 (1)	310 (1)	270 (1)
Song Sparrow	290 (2)	279 (2)	148 (2)
Bushtit	91 (3)	148 (3)	63 (5)
American Robin	88 (4)	114 (4)	85 (4)
Chestnut-backed Chickadee	74 (6)	107 (5)	51 (7)
Orange-crowned Warbler	61 (7)	99 (6)	108 (3)
Spotted Towhee	57(8)	95 (7)	60 (6)
Lincoln's Sparrow	23 (13)	86 (8)	43 (9)
Bewick's Wren	55 (9)	75 (9)	51 (7)
Purple Finch	21 (14)	46 (10)	26 (12)



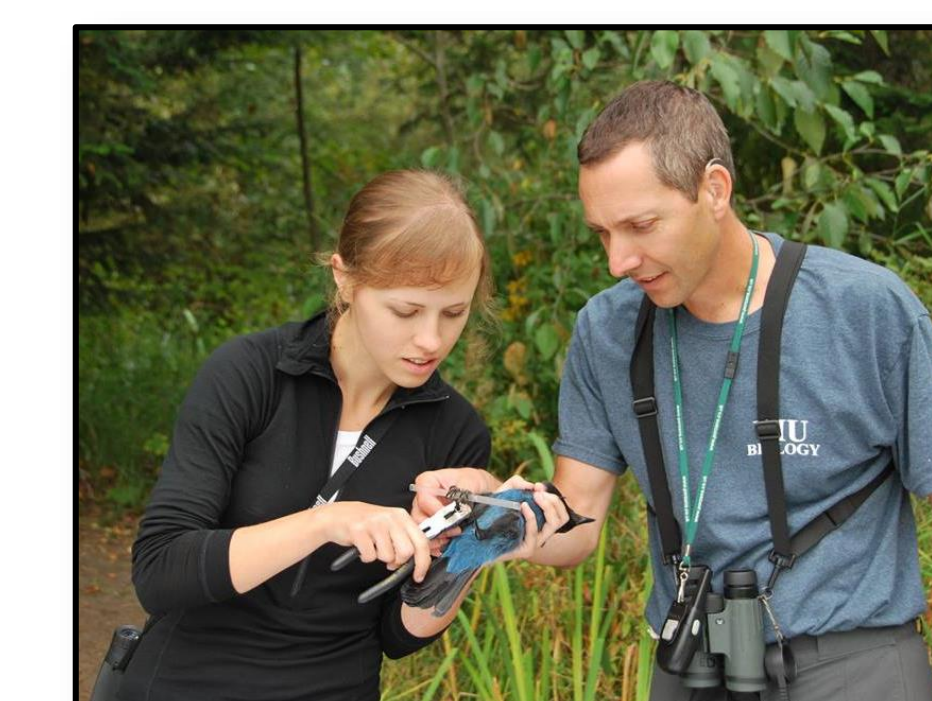
Results highlight the importance of the Buttertubs Marsh wetland complex as breeding, stopover and wintering habitat for songbirds.

## TREE SWALLOW NEST BOXES

A Tree Swallow nest box colony was also established at Buttertubs Marsh in 2013. Occupancy of the 30 nest boxes has increased steadily each year, with 63% of boxes used and 123 nestlings banded during 2013-2015.

## TRAINING AND OUTREACH

Training of undergraduate students and community volunteers is an integral objective of this project. To date, over 75 volunteers have received training in bird monitoring and banding techniques. Many students have subsequently contributed at other banding stations, obtained employment in ornithology, or pursued graduate studies.



In addition, regular public demonstrations have provided an exclusive opportunity for people of all ages to learn about bird ecology, evolution, identification and behaviour up-close and personal.



## REFERENCES

- 1 Lepczyk, C.A., and P.S. Warren. 2012. Urban Bird Ecology and Conservation. University of California Press, Los Angeles, CA.
- 2 North American Bird Conservation Initiative, Canada. 2012. The State of Canada's Birds, 2012. <http://www.stateofcanadasbirds.org/>

## ACKNOWLEDGMENTS

- This project would not be possible without a dedicated group of volunteers: R. Abbott, M. Angelstad, G. Ball, K. Bachan, D. Baird, T. Barrington, K. Barry, M. Baxter, G. Beisel, G. Bell, H. Blackburn, J. Blackburn, H. Blackman, K. Bortolin, S. Bowering, D. Buffett, C. Butterworth, R. Cannings, H. Carolsfeld, R. Cathers, S. Chalmers, B. Cousins, T. Davis, L. Demattia, E. Demers, M. Dietterle, T. Douglas, B. Dudeck, G. Duncan, A. Ellison, S. Fraser, M. Funk, L. Gillis, T. Goater, S. Gordon, P. Greig, R. Greiter, S. Greenway, D. Gullison, J. Hall, L. Hammond-Kaarremaa, A. Hampshire, E. Hampshire, M. Hampshire, R. Harding, C. Hedden, L. Henderson, R. Hocken, S. James, D. Johnson, C. Josefsson, J. Kadera, J. Kalicum, H. Kimura, B. Kingzett, A. Kirkley, A. Kletchko, G. Klimes, M. Kondoh, C. Lee, J. Lepage, C. Matthews, D. Matthews, H. McCabe, J. Melvin, J. Mentz, B. Merrilees, M. Morgan, P. Morrison, P. Musto, L. Nelson, C. Nguyen, D. Nickel, R. Nilson, A. Nightingale, K. Ocharov, L. Parker, M. Paskevicius, O. Peer, B. Pennell, P. Reid, S. Reimer, K. Relke, N. Renaud, S. Richards, T. Ridgway, S. Ringel, O. Roscow, M. Rowland, H. Rueggeberg, J. Schochter, C. Seibert, J. Semper, R. Shelling, W. Simms, R. Stevens, T. Stewart, W. Taylor, M. Tomlinson, C. Tong, E. Tranfield, L. Ware, H. Wathen, C. Watson, J. Watson, K. Wetten, S. Wetten, D. Wheeler, J. Whitelaw, A. Wilschut, S. Wood, H. van Vliet, A. Zimich.
- The City of Nanaimo, Ducks Unlimited Canada, the Vancouver Avian Research Centre, The Nature Trust of BC, and the Nanaimo Science and Sustainability Society (NS<sup>3</sup>) are acknowledged for their support of this project.
- Funding was provided by the Vancouver Island University Research Awards Committee Research Fund, the Andy Spencer Bamfield Research Fellowship, the Mount Arrowsmith Biosphere Reserve, and Ducks Unlimited Canada.
- Bird banding conducted in accordance with Canadian Wildlife Service permit 10885 and Vancouver Island University Animal Use Protocol No. 2012-10-R.

