

Coulton, D. W., Clark, R. G., Howerter, D. W., Anderson, M. G., and Wassenaar, L. I. 2011. Costs and benefits of natal dispersal in yearling mallards *Anas platyrhynchos*. – J. Avian Biol. 42: 123-133.

Appendix 1

Descriptive attributes of Canadian Aspen Parkland study sites including, year, degree latitude (Lat, °N) and longitude (Long, °W), study site size (Area; km²) and densities (per km²) of mallard breeding pairs (Pairs) and class I and II (Temp) and class III and IV (Perm) wetlands, and percent study site in grass (Grass), wood-shrub (Wd-shb), and crop (Crop) and herbaceous (Herb) upland nest cover. Also shown are point estimates of nesting success for yearling mallards *Anas platyrhynchos* estimated to have long- (NS_{LD}) and short- (NS_{SD}) natal dispersal distances and their respective sample sizes (n). Costs of dispersal were considered higher if group differences in nesting success were ≥ 0.10 otherwise costs were similar. Long- versus short-distance dispersal relative to study sites was determined from discriminant function analysis of greater-secondary covert feather $\delta^{34}\text{S}$, δD , $\delta^{15}\text{N}$, and $\delta^{13}\text{C}$ values.

| Location | Year | Lat | Long | Area | Pairs | Temp | Perm | Grass | Wd-shb | Crop | Herb | NS _{LD} | NS _{SD} |
|--------------|------|------|--------|------|-------|------|------|-------|--------|------|------|------------------|------------------|
| Punnichy, SK | 1993 | 51.3 | -104.3 | 55.4 | 5.1 | 4.3 | 25.2 | 5.0 | 5.8 | 35.7 | 0.23 | 0.0 (3) | 0.13 (15) |

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|------------------------|------|------|--------|------|------|------|------|------|------|------|------|-----------|-----------|
| Belmont, MB | 1994 | 49.4 | -99.5 | 65.1 | 4.5 | 7.9 | 15.0 | 10.9 | 7.4 | 27.7 | 0.41 | 0.60 (5) | 0.26 (19) |
| Davis, SK | 1994 | 53.2 | -105.6 | 67.7 | 7.6 | 3.1 | 20.2 | 7.6 | 8.2 | 32.0 | 0.37 | - (0) | 0.22 (18) |
| Kutawagon Lake, SK | 1995 | 51.4 | -104.2 | 67.1 | 3.4 | 1.8 | 25.4 | 9.7 | 6.2 | 38.2 | 0.27 | - (0) | 0.07 (28) |
| Baldur, MB | 1996 | 49.4 | -99.3 | 67.2 | 7.5 | 3.7 | 7.0 | 11.2 | 12.7 | 19.5 | 0.40 | 0.0 (2) | 0.17 (47) |
| Parkside, SK | 1996 | 53.2 | -106.6 | 66.0 | 4.4 | 1.6 | 7.2 | 8.5 | 5.4 | 38.5 | 0.29 | 0.0 (1) | 0.07 (30) |
| Pine Lake, AB | 1996 | 52.2 | -113.4 | 65.6 | 5.7 | 14.6 | 29.5 | 23.5 | 12.8 | 13.3 | 0.55 | 0.33 (6) | 0.15 (27) |
| Allan Hills West, SK | 1997 | 51.7 | -106.1 | 65.5 | 14.5 | 2.5 | 17.9 | 6.4 | 3.1 | 34.5 | 0.35 | 0.40 (5) | 0.46 (41) |
| Elnora, AB | 1997 | 52.0 | -113.3 | 65.9 | 5.6 | 19.0 | 25.0 | 28.6 | 17.7 | 6.2 | 0.57 | 0.33 (9) | 0.25 (20) |
| Mixburn, AB | 1997 | 53.1 | -111.4 | 65.7 | 4.9 | 10.3 | 48.7 | 10.4 | 6.6 | 30.1 | 0.40 | 0.33 (3) | 0.39 (31) |
| Willowbrook, SK | 1997 | 51.2 | -102.9 | 66.8 | 6.5 | 9.8 | 22.8 | 8.2 | 9.5 | 35.5 | 0.27 | 0.0 (1) | 0.14 (28) |
| Donalda, AB | 1998 | 52.6 | -112.6 | 65.8 | 14.3 | 7.1 | 28.6 | 6.8 | 4.7 | 34.1 | 0.32 | 0.14 (7) | 0.11 (35) |
| Farrerdale, SK | 1998 | 51.5 | -105.9 | 65.7 | 6.2 | 5.7 | 11.3 | 14.3 | 2.8 | 40.9 | 0.30 | 0.11 (9) | 0.10 (20) |
| Jumping Deer Creek, SK | 1998 | 51.2 | -104.1 | 65.6 | 10.2 | 10.5 | 33.7 | 11.3 | 14.7 | 15.9 | 0.47 | 0.0 (2) | 0.25 (27) |
| Minnedosa, MB | 1998 | 50.2 | -99.9 | 67.0 | 10.4 | 5.4 | 30.9 | 8.0 | 3.6 | 31.7 | 0.35 | 0.0 (3) | 0.13 (45) |
| Allan Hills East, SK | 1999 | 51.6 | -105.9 | 65.7 | 16.2 | 11.7 | 27.0 | 11.1 | 4.3 | 24.4 | 0.50 | 0.10 (10) | 0.18 (17) |
| Kinsella, AB | 1999 | 52.9 | -111.7 | 65.7 | 8.5 | 13.1 | 30.1 | 14.4 | 15.4 | 22.5 | 0.39 | 0.0 (2) | 0.05 (22) |
| Red Deer, AB | 1999 | 52.4 | -112.4 | 65.7 | 10.3 | 11.5 | 24.6 | 12.9 | 9.1 | 14.2 | 0.55 | 0.50 (4) | 0.18 (17) |
| Allan Hills North, SK | 2000 | 51.7 | -106.2 | 66.3 | 12.2 | 5.0 | 15.2 | 4.3 | 5.7 | 39.0 | 0.28 | 0.33 (6) | 0.09 (23) |

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|-------------------|------|------|--------|------|------|------|------|------|-----|------|------|---------|-----------|
| Holmfield, MB | 2000 | 49.2 | -99.5 | 68.0 | 10.2 | 6.1 | 20.2 | 13.1 | 2.2 | 16.3 | 0.64 | 0.0 (1) | 0.24 (29) |
| Leask, SK | 2000 | 53.1 | -106.9 | 65.2 | 3.4 | 1.4 | 5.6 | 8.1 | 6.6 | 34.8 | 0.26 | 0.0 (1) | 0.04 (25) |
| Prince Albert, SK | 2000 | 53.1 | -105.5 | 67.0 | 9.7 | 10.0 | 18.3 | 5.1 | 8.5 | 22.7 | 0.44 | 0.0 (2) | 0.16 (19) |
