**APPENDIX 1. COYOTE REPORT CLASSICIFICATION**

**Figure A1.1.** The report classification form used to extract information from coyote reports. Volunteers read each report and completed this form.

**Graphical user interface, text, application, email

Description automatically generated**

**Graphical user interface

Description automatically generated with medium confidence**

Graphical user interface, application

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

**Text A1.1.** The protocol used to train volunteers and inform their use of the report classification form.

*Volunteer Training Protocol*

1. Initial Training: Volunteers will be sent 30 reports to classify, following the classification protocol outlined below. Each of these reports has been previously classified by Jonathan. Once volunteers have classified the 30 reports, they will notify Jonathan and a virtual meeting will be scheduled to go over the reports and examine where answers differ from Jonathan’s classifications. Jonathan will explain why he classified the report differently to help the volunteer adjust their coding to minimize variability.
2. Secondary Training: Volunteers will then classify another 30 practice reports, and compare their answers to the classification done by Jonathan (on their own time). If necessary, they will contact Jonathan with any questions.
3. Report Classification: Once volunteers feel confident in their classification ability (steps 1 and 2 can be repeated as needed) they will be sent 100 reports at a time to be classified. All reports shared with volunteers will have all personal identifiers (name, contact, location) removed.

*Google Form Report Classification Protocol*

The descriptions below are stepwise guidelines to help volunteers classify reports. Please direct any questions to Jonathan Farr ([jfarr@ualberta.ca](mailto:jfarr@ualberta.ca)). Remember, it is important to avoid making inferences when classifying the reports.

1. Report ID
   * Record the unique ID of the report being classified (not the spreadsheet case/row)
2. Number of coyotes
   * Select the bullet point that best matches the number of coyotes defined in the report
3. Coyote young are named
   * Select the box only if coyote young (young/pups/babies) or dens are named explicitly (NOT small/little/tiny)
4. Human activity
   * Select the box that best fits the activity described in the report. If no activity is explicitly mentioned (for example, if a report says “saw coyote in alley”) select *Unknown.*
5. Vulnerable individual present or implied
   * The vulnerable individual does not need to be explicitly present, if reports say “near a school” or “worried because children play in this area,” select *Child.*
6. If a dog was present, was it:
   * Select *Leashed, Off-leash* or *In home / yard* if explicitly stated or if dog is mentioned, if dog is not mentioned or is not explicitly stated, select unknown.
7. Did the person try hazing the coyote?
   * Select *Yes* only if the person explicitly mentions trying to haze the coyote by chasing, shouting, kicking, throwing things or honking at the coyote.
   * Select *No* if the person explicitly attempts to avoid interaction with the coyote by walking away, running away or standing still. Also select *No* if the person was in a situation where hazing was not possible, for example if the coyote did not notice the person, if they saw the coyote on security footage, or viewed it from a distance.
   * Select *Unknown* for all other situations.
8. Coyote response to people
   * In this section, it is important to read the entire report then select the highest option that the report indicates. For example, if the coyote watched the person then approached them and bit their dog, select *Made physical contact with pets or people*, NOT *Watched the person* or *Approached the person.*
     + Select *Did not / could not see the people* if the coyote is described as being seen from a distance, or from indoors, or if the coyote is explicitly described as not seeing the person. If the coyote is described as preoccupied (hunting, sniffing around) without giving any further details, select *Did not / could not see the people*
     + Select *Ran away* if the coyote explicitly avoided human interaction by running away. A report saying they saw a coyote running across a street should not be classified as *Ran away.* If the coyote is running away from an off leash dog, make note of this in the comment
     + Select *Walked away* if the coyote explicitly avoided human interaction by walking away. A report saying they saw a coyote walking across a street should not be classified as *Walked away.*
     + Select *Did not appear to notice or care about people* if the coyote is described as being indifferent to people.
     + Select *Watched the person* only if the coyote is explicitly described as watching the person (looking at them) without approaching them
     + Select *Howled at the person* only if the coyote is howling/yipping at the person directly. Reports that are auditory descriptions of coyotes howling outside at night in the ravine or neighbourhood should not be classified as *Howled at the person.*
     + Select *Followed or stalked pets or people* only if the coyote is described as following/escorting/stalking the people without attempting to approach them.
     + Select *Approached the person* only if the coyote is described as approaching/nearing/sneaking up on the person.
     + Select *Chased or charged pets or people* if the coyote lunges/chases/bites at the person, and does not make contact because it is hazed by the person or decides not to make contact for another unknown reason
     + Select *Made physical contact with pets or people* only if the coyote bites or is kicked/punched/bitten by a person or pet.
     + Select *Unknown* if the report is too vague to infer any of the other responses. For example “Saw coyote in field” or “Coyote ran/walked across street” would be classified as *Unknown*
9. Human Perception
   * *Reporter expressed negative perception of coyote or emotion* should be selected if the report uses words such as terrified, scared, uncomfortable, nervous, worried, frightened, disturbing, fear, concern, or alarm.
   * *Reporter expresses neutral perception or emotion* should be selected if the report uses words such as surprised, curious or denied a negative reaction, such as “wasn’t scared.”
   * *Reporter expresses positive perception or emotion* should be selected if the report uses words such as love, happy, exciting, cool, and beautiful.
   * *Reporter expresses concern for coyote* should be selected only if the person explicitly expresses worry or concern for the coyote’s well-being.
   * *Unable to determine* should be selected for all reports where the reporter does not describe the coyote using one of the words above, or does not address their emotional response to the coyote sighting/encounter using one of the words above.
10. Coyote health is mentioned
    * Select the box that best describes the health of the coyote if described in the report.
11. Additional comments
    * Please record any additional comments you may have
12. Classifier ID (first initial and last name)
    * The first initial and last name of the person who classified the report (ex: J Farr)
13. Reporter comments should be reviewed
    * Select only if you desire for your comments to be reviewed by Jonathan. You may also email [jfarr@ualberta.ca](mailto:jfarr@ualberta.ca) or text XXX-XXX-XXXX with any questions that may come up.

**Table A1.1.** Inter-observer agreement between report classifiers.

|  |  |
| --- | --- |
| **Variable** | **Inter-rater agreement†** |
| Coyote boldness | 85 % |
| Human concern | 96 % |
| Human activity | 87 % |
| Vulnerable individual | 97 % |
| Dog leash status | 85 % |
| Number of coyotes observed | 92 % |
| Coyote health | 89 % |

† Percentage of reports out of 100 classified the same between two classifiers

**APPENDIX 2. COYOTE BOLDNESS AND HUMAN CONCERN ACROSS VARIABLES**

**Table A2.1.** Distribution of coyote boldness categories across land cover, temporal and contextual variable categories. Reports are expressed as number (percentage); percentage is calculated as a function of the total number of reports within each category, so that each row sums to 100%.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Independent Variables** | | **Coyote Boldness**  **Number of reports (percentage)** | | | |
| **Variable** | **Categories** | **Avoidance** | **Indifferent** | **Bold** | **Aggressive** |
| **Land Cover** | Natural | 143 (28.9%) | 178 (36%) | 110 (22.2%) | 64 (12.9%) |
|  | Modified Open | 45 (20.3%) | 77 (34.7%) | 54 (24.3%) | 46 (20.7%) |
|  | Mowed | 107 (22%) | 209 (42.9%) | 124 (25.5%) | 47 (9.7%) |
|  | Residential | 606 (30.4%) | 888 (44.6%) | 341 (17.1%) | 158 (7.9%) |
|  | Commercial | 92 (26.8%) | 180 (52.5%) | 53 (15.5%) | 18 (5.2%) |
| **Season** | Breeding | 352 (28.3%) | 611 (49.1%) | 189 (15.2%) | 93 (7.5%) |
|  | Pup-Rearing | 185 (23.4%) | 275 (34.7%) | 193 (24.4%) | 139 (17.6%) |
|  | Dispersal | 456 (30.3%) | 646 (43%) | 300 (20%) | 101 (6.7%) |
| **Time of Day** | Day | 490 (25.2%) | 889 (45.7%) | 365 (18.8%) | 201 (10.3%) |
|  | Night | 449 (33%) | 544 (40%) | 264 (19.4%) | 103 (7.6%) |
|  | Unknown | 54 (23%) | 99 (42.1%) | 53 (22.6%) | 29 (12.3%) |
| **Human Activity** | Cycling | 30 (52.6%) | 21 (36.8%) | 1 (1.8%) | 5 (8.8%) |
|  | Driving | 174 (42.2%) | 228 (55.3%) | 3 (0.7%) | 7 (1.7%) |
|  | Home/Yard | 221 (36.7%) | 257 (42.7%) | 52 (8.6%) | 72 (12%) |
|  | Outdoor Activity | 33 (26.4%) | 49 (39.2%) | 29 (23.2%) | 14 (11.2%) |
|  | Unknown | 246 (28.2%) | 441 (50.6%) | 99 (11.4%) | 86 (9.9%) |
|  | Walking | 289 (19.6%) | 536 (36.4%) | 498 (33.8%) | 149 (10.1%) |
| **Vulnerable Individual** | Cat | 21 (17.5%) | 24 (20%) | 12 (10%) | 63 (52.5%) |
|  | Child | 35 (23.3%) | 77 (51.3%) | 27 (18%) | 11 (7.3%) |
|  | Dog | 274 (18.6%) | 494 (33.4%) | 495 (33.5%) | 214 (14.5%) |
|  | Multiple | 35 (19.1%) | 77 (42.1%) | 45 (24.6%) | 26 (14.2%) |
|  | Unknown | 628 (39%) | 860 (53.4%) | 103 (6.4%) | 19 (1.2%) |
| **Dog Leash Status** | Leashed | 33 (15.6%) | 65 (30.7%) | 83 (39.2%) | 31 (14.6%) |
|  | Off-Leash | 38 (24.2%) | 33 (21%) | 35 (22.3%) | 51 (32.5%) |
|  | Unknown | 199 (17.5%) | 410 (36.1%) | 399 (35.1%) | 128 (11.3%) |
| **Coyote Number** | One | 780 (31.6%) | 1086 (43.9%) | 425 (17.2%) | 181 (7.3%) |
|  | Two | 124 (21.5%) | 240 (41.5%) | 138 (23.9%) | 76 (13.1%) |
|  | Three | 35 (20.2%) | 66 (38.2%) | 51 (29.5%) | 21 (12.1%) |
|  | More | 22 (16.4%) | 52 (38.8%) | 37 (27.6%) | 23 (17.2%) |
|  | Unknown | 32 (17.5%) | 88 (48.1%) | 31 (16.9%) | 32 (17.5%) |
| **Health** | Healthy | 219 (35.7%) | 301 (49.1%) | 65 (10.6%) | 28 (4.6%) |
|  | Unhealthy | 64 (35.4%) | 85 (47%) | 23 (12.7%) | 9 (5%) |
|  | Unknown | 710 (25.9%) | 1146 (41.7%) | 594 (21.6%) | 296 (10.8%) |

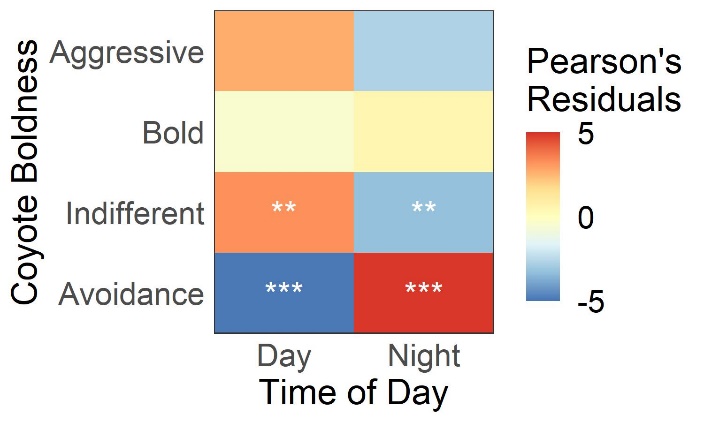
**Table A2.2.** Distribution of human concern of coyote categories across land cover, temporal and contextual variable categories. Reports are expressed as number (percentage); percentage is calculated as a function of the total number of reports within each category, so that each row sums to 100%.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Independent Variables** | | **Human Concern**  **Number of reports (category percentage)** | | |
| **Variable** | **Categories** | **Negative** | **Neutral** | **Positive** |
| **Land Cover** | Natural | 80 (65%) | 25 (20.3%) | 18 (14.6%) |
|  | Modified Open | 54 (68.4%) | 13 (16.5%) | 12 (15.2%) |
|  | Mowed | 93 (66.9%) | 35 (25.2%) | 11 (7.9%) |
|  | Residential | 425 (69.8%) | 99 (16.3%) | 85 (14%) |
|  | Commercial | 66 (60%) | 23 (20.9%) | 21 (19.1%) |
| **Season** | Breeding | 260 (64%) | 85 (20.9%) | 61 (15%) |
|  | Pup Rearing | 155 (67.4%) | 45 (19.6%) | 30 (13%) |
|  | Dispersal | 303 (71.5%) | 65 (15.3%) | 56 (13.2%) |
| **Time of Day** | Day | 365 (65.6%) | 108 (19.4%) | 83 (14.9%) |
|  | Night | 290 (68.1%) | 82 (19.2%) | 54 (12.7%) |
|  | Unknown | 63 (80.8%) | 5 (6.4%) | 10 (12.8%) |
| **Human Activity** | Cycling | 2 (16.7%) | 8 (66.7%) | 2 (16.7%) |
|  | Driving | 45 (46.4%) | 21 (21.6%) | 31 (32%) |
|  | HomeYard | 214 (72.8%) | 42 (14.3%) | 38 (12.9%) |
|  | OutdoorAct | 20 (76.9%) | 3 (11.5%) | 3 (11.5%) |
|  | Unknown | 189 (69%) | 42 (15.3%) | 43 (15.7%) |
|  | Walking | 248 (69.5%) | 79 (22.1%) | 30 (8.4%) |
| **Vulnerable Individual** | Cat | 32 (78%) | 2 (4.9%) | 7 (17.1%) |
|  | Child | 91 (87.5%) | 10 (9.6%) | 3 (2.9%) |
|  | Dog | 314 (77%) | 67 (16.4%) | 27 (6.6%) |
|  | Multiple | 131 (92.3%) | 7 (4.9%) | 4 (2.8%) |
|  | Unknown | 150 (41.1%) | 109 (29.9%) | 106 (29%) |
| **Dog Leash Status** | Leashed | 49 (75.4%) | 12 (18.5%) | 4 (6.2%) |
|  | Off-Leash | 43 (87.8%) | 3 (6.1%) | 3 (6.1%) |
|  | Unknown | 291 (79.7%) | 54 (14.8%) | 20 (5.5%) |
| **Coyote Number** | One | 396 (60.7%) | 141 (21.6%) | 115 (17.6%) |
|  | Two | 138 (76.7%) | 26 (14.4%) | 16 (8.9%) |
|  | Three | 62 (77.5%) | 9 (11.2%) | 9 (11.2%) |
|  | More | 50 (80.6%) | 9 (14.5%) | 3 (4.8%) |
|  | Unknown | 72 (83.7%) | 10 (11.6%) | 4 (4.7%) |
| **Health** | Healthy | 85 (38.3%) | 51 (23%) | 86 (38.7%) |
|  | Unhealthy | 31 (77.5%) | 6 (15%) | 3 (7.5%) |
|  | Unknown | 602 (75.4%) | 138 (17.3%) | 58 (7.3%) |

**Table A2.3.** Pearson’s χ2 test of independence results examining if land cover, coyote season, time of day, or any contextual variables affected coyote boldness or human concern of coyotes.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables Tested** | ***N***† | **χ2** | **df** | ***p*** |
| Coyote boldness x Land cover | 3540 | 102.9 | 12 | 1.5E-16 |
| Coyote Boldness x Season | 3540 | 126.3 | 6 | 7.5E-25 |
| Coyote boldness x Time of day | 3305 | 30.1 | 3 | 1.3E-06 |
| Coyote boldness x Human activity | 3483 | 452.2 | 12 | 2.7E-92 |
| Coyote boldness x Vulnerable individual | 3540 | 916.8 | 12 | 1.4E-188 |
| Coyote boldness x Dog leash status | 1505 | 67.0 | 6 | 1.7E-12 |
| Coyote boldness x Number of coyotes | 3540 | 109.9 | 12 | 6.3E-18 |
| Coyote boldness x Coyote health | 3540 | 88.4 | 6 | 6.6E-17 |
| Human concern x Land cover | 1060 | 13.2 | 8 | 0.11 |
| Human concern x Season | 1060 | 6.1 | 4 | 0.2 |
| Human concern x Time of day | 982 | 1.1 | 2 | 0.58 |
| Human concern x Human activity | 1022 | 46.6 | 6 | 2.3E-08 |
| Human concern x Vulnerable individual | 1060 | 209.9 | 8 | 5.20E-41 |
| Human concern x Dog leash status | 452 | 3.67 | 2 | 0.16 |
| Human concern x Number of coyotes | 1060 | 42.0 | 8 | 1.3E-06 |
| Human concern x Coyote health | 1060 | 164.5 | 4 | 1.6E-34 |
| Human concern x Coyote boldness | 653 | 56.3 | 6 | 2.5E-10 |

† *N* is the number of reports available for each test



**Figure A2.1.** Relationship between coyote boldness and time of day. Colors represent Pearson’s residual values calculated post-hoc from chi square tests, with positive values (red) indicating positive relationships and negative values (blue) indicating negative relationships. Significance is indicated by asterisks (\* p < 0.05, \*\* p <0.01, \*\*\* p < 0.001).

**APPENDIX 3. ORDERED LOGISTIC REGRESSION MODELLING**

**Table A3.1.** Pearson’s chi-square test of independence outputs testing the relationship between season, time of day, and contextual variables.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variables Tested** | ***N*†** | **χ2** | **df** | ***p*** |
| Season x Human activity | 9134 | 66.5 | 10 | 2.1E-10 |
| Season x Vulnerable individual | 9134 | 77.0 | 8 | 1.9E-13 |
| Season x Dog leash status | 2202 | 23.6 | 6 | 6.2E-04 |
| Season x Number of coyotes | 9134 | 95.5 | 8 | 3.5E-17 |
| Season x Coyote health | 9134 | 19.5 | 4 | 6.4E-04 |
| Season x Time of day | 8474 | 298.9 | 2 | 1.3E-65 |
| Time of day x Human activity | 8474 | 92.7 | 5 | 1.8E-18 |
| Time of day x Vulnerable individual | 8474 | 39.2 | 4 | 6.3E-08 |
| Time of day x Dog leash status | 2029 | 51.1 | 3 | 4.6E-11 |
| Time of day x Number of coyotes | 8474 | 240.8 | 4 | 6.3E-51 |
| Time of day x Coyote health | 8474 | 155.3 | 2 | 1.9E-34 |
| Human activity x Vulnerable individual | 1262 | 89.8 | 6 | 3.4E-17 |
| Human activity x Dog leash status | 1882 | 60.8 | 4 | 2.0E-12 |
| Human activity x Number of coyotes | 9059 | 624.4 | 16 | 1.5E-122 |
| Human activity x Coyote health | 9059 | 108.1 | 8 | 9.2E-20 |
| Vulnerable individual x Dog leash status | 1958 | 13.6 | 2 | 1.1E-03 |
| Vulnerable individual x Number of coyotes | 9134 | 193.5 | 16 | 1.6E-32 |
| Vulnerable individual x Coyote health | 9134 | 40.9 | 8 | 2.2E-06 |
| Dog leash status x Number of coyotes | 9134 | 193.5 | 16 | 1.6E-32 |
| Dog leash status x Coyote health | 2202 | 5.4 | 6 | 5.0E-01 |
| Number of coyotes x Coyote health | 9134 | 464.8 | 8 | 2.5E-95 |

† *N* is the number of reports available for each test

**Table A3.2** The outputs from univariate ordinal regression models aiming to determine the best-fit scale for measuring land cover variables and building density, showing AIC values and the difference between the AIC value of each univariate model and the null model.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Coyote Boldness** | | | **Human Concern** | | |
| Variable (scale)† | AIC | ΔAICnull | Variable (scale)† | AIC | ΔAICnull |
| Building Density (100m) | 8865.2 | -52.1 | Building Density (100m) | 1805.2 | 0.7 |
| **Building Density (200m)** | **8860.7** | **-56.6** | **Building Density (200m)** | **1804.5** | **0.0** |
| Building Density (400m) | 8868.1 | -49.2 | Building Density (400m) | 1804.8 | 0.3 |
| Building Density (800m) | 8885.2 | -32.1 | Building Density (800m) | 1806.3 | 1.8 |
| Building Density (1600m) | 8899.3 | -18.1 | Building Density (1600m) | 1805.6 | 1.0 |
| **Natural (100m)** | **8911.2** | **-6.1** | Natural (100m) | 1803.5 | -1.0 |
| Natural (200m) | 8912.5 | -4.8 | Natural (200m) | 1803.7 | -0.8 |
| Natural (400m) | 8911.9 | -5.4 | Natural (400m) | 1804.9 | 0.4 |
| Natural (800m) | 8911.4 | -6.0 | Natural (800m) | 1804.6 | 0.1 |
| Natural (1600m) | 8918.0 | 0.6 | **Natural (1600m)** | **1802.2** | **-2.3** |
| Modified Open (100m) | 8892.7 | -24.6 | Modified Open (100m) | 1806.5 | 2.0 |
| Modified Open (200m) | 8889.9 | -27.4 | Modified Open (200m) | 1806.5 | 2.0 |
| **Modified Open (400m)** | **8889.1** | **-28.2** | Modified Open (400m) | 1806.5 | 2.0 |
| Modified Open (800m) | 8898.2 | -19.1 | Modified Open (800m) | 1806.5 | 2.0 |
| Modified Open (1600m) | 8899.9 | -17.4 | **Modified Open (1600m)** | **1802.1** | **-2.4** |
| **Mowed (100m)** | **8906.5** | **-10.8** | Mowed (100m) | 1805.6 | 1.1 |
| Mowed (200m) | 8914.2 | -3.1 | Mowed (200m) | 1806.5 | 2.0 |
| Mowed (400m) | 8919.3 | 1.9 | Mowed (400m) | 1805.1 | 0.6 |
| Mowed (800m) | 8918.0 | 0.7 | **Mowed (800m)** | **1801.1** | **-3.4** |
| Mowed (1600m) | 8918.6 | 1.3 | Mowed (1600m) | 1805.3 | 0.8 |
| Commercial (100m) | 8916.0 | -1.3 | **Commercial (100m)** | **1802.3** | **-2.2** |
| **Commercial (200m)** | **8915.7** | **-1.6** | Commercial (200m) | 1804.3 | -0.2 |
| Commercial (400m) | 8915.8 | -1.5 | Commercial (400m) | 1804.9 | 0.4 |
| Commercial (800m) | 8917.0 | -0.3 | Commercial (800m) | 1805.5 | 1.0 |
| Commercial (1600m) | 8918.1 | 0.8 | Commercial (1600m) | 1804.4 | -0.1 |
| **Residential (100m)** | **8877.4** | **-40.0** | Residential (100m) | 1803.7 | -0.8 |
| Residential (200m) | 8890.8 | -26.6 | Residential (200m) | 1801.4 | -3.1 |
| Residential (400m) | 8903.4 | -13.9 | Residential (400m) | 1798.7 | -5.8 |
| Residential (800m) | 8910.3 | -7.1 | **Residential (800m)** | **1798.3** | **-6.2** |
| Residential (1600m) | 8912.9 | -4.4 | Residential (1600m) | 1801.6 | -2.9 |

† Bolded values indicate the best-fit scale (lowest AIC value)

**Table A3.3.** Spearman’s correlation coefficients between variables used for ordinal regression models of coyote boldness towards humans. For variable pairs with r > 0.6, only the variable with the lowest AIC in univariate models was retained for further analysis.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Road Distance Decay | Modified Open (400m) | Natural (100m) | Mowed (100m) | Building Density (200m) | Commercial (200m) | Residential (100m) |
| Road Distance Decay | - | -0.12 | -0.18 | -0.13 | 0.50 | 0.14 | 0.58 |
| Modified Open (400m) | - | - | 0.02 | -0.34 | -0.14 | -0.11 | -0.06 |
| Natural (100m) | - | - | - | -0.28 | -0.39 | -0.31 | -0.23 |
| Mowed (100m) | - | - | - | - | 0.00 | 0.02 | -0.15 |
| Building Density (200m) | - | - | - | - | - | 0.16 | **0.61** |
| Commercial (200m) | - | - | - | - | - | - | -0.17 |
| Residential (100m) | - | - | - | - | - | - | - |

**Table A3.4.** Spearman’s correlation coefficients between variables used for ordinal regression models of human concern of coyotes. For variable pairs with r > 0.6 (bold), only the variable with the lower AIC in univariate models was retained for further analysis.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Modified Open (1600m) | Mowed (800m) | Natural (1600m) | Commercial (100m) | Residential (800m) |
| Modified Open (1600m) | - | -0.42 | 0.062 | -0.15 | 0.024 |
| Mowed (800m) | - | - | -0.03 | -0.017 | -0.02 |
| Natural (1600m) | - | - | - | -0.19 | -0.32 |
| Commercial (100m) | - | - | - | - | -0.13 |
| Residential (800m) | - | - | - | - | - |

**Table A3.5.** The variables included in global models examining the factors affecting coyote boldness towards humans and human concern of coyotes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Global Model** | **Variables** | **df** | **AIC** | **ΔAICnull** |
| **Coyote Boldness** | RoadDistDecay + BuildingDensity200m + Natural100m + ModifiedOpen400m + Mowed100m + Commercial200m + Season + Natural100m\*Season + ModifiedOpen\*Season + Year + RoadDistDecay\*Year + BuildingDensity200m \*Year + Natural100m\*Year + ModifiedOpen400m\*Year + Mowed100m\*Year + Commercial200m\*Year | 22 | 8691.3 | -226.1 |
| **Human Concern** | Natural1600m + Modified\_Open1600m + Mowed800m + Commercial100m + Residential800m + Season + Year + Year\*Natural1600m + Year\*Modified\_Open1600m + Year\*Mowed800m + Year\*Commercial100m + Year\*Residential800m | 15 | 1797.2 | 8.2 |

**Table A3.6.** The coefficients, confidence intervals and model parameters from the top-ranked ordinal regression models assessing coyote boldness towards humans.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables†**  **ß (2.5% C.I. , 97.5% C.I.)** | | | | | | | | | | | | |  | **Model Parameters** | | |
| **BUILD** | **MOD** | **MOW** | **ROAD** | **SEAS(D)** | **SEAS(P)** | **YEAR** | **MOD:**  **SEAS(D)** | **MOD:**  **SEAS(P)** | **MOW:**  **YEAR** | **MOD:**  **YEAR** | **ROAD: YEAR** | **BUILD: YEAR** | **COM: YEAR** | **AICc** | **ΔAICc** | **wgtAICc** |
| -0.13  (-0.2,  -0.05) | -0.02  (-0.13, 0.09) | 0.09  (0.02, 0.16) | -0.11 (-0.18 , -0.03) | 0.03 (-0.1 , 0.17) | 0.03 (-0.1 , 0.17) | 0.29 (0.22 , 0.35) | 0.12 (-0.02 , 0.27) | 0.36 (0.19 , 0.52) | NA | NA | NA | NA | NA | 8677.6 | 0 | 0.14 |
| -0.13  (-0.2,  -0.05) | -0.02  (-0.14, 0.09) | 0.09  (0.02, 0.15) | -0.11 (-0.18 , -0.03) | 0.03 (-0.11 , 0.17) | 0.03 (-0.11 , 0.17) | 0.28 (0.22 , 0.35) | 0.13 (-0.02 , 0.27) | 0.36 (0.2 , 0.52) | 0.04 (-0.02 , 0.1) | NA | NA | NA | NA | 8677.7 | 0.1 | 0.14 |
| -0.13  (-0.2,  -0.05) | -0.02  (-0.13, 0.09) | 0.09 (0.02, 0.15) | -0.11 (-0.18 , -0.03) | 0.03 (-0.1 , 0.17) | 0.03 (-0.1 , 0.17) | 0.29 (0.22 , 0.35) | 0.12 (-0.02 , 0.27) | 0.36 (0.2 , 0.52) | NA | -0.04 (-0.1 , 0.02) | NA | NA | NA | 8677.7 | 0.13 | 0.13 |
| -0.13  (-0.2,  -0.05) | -0.02  (-0.14, 0.09) | 0.09 (0.02, 0.15) | -0.11 (-0.18 , -0.03) | 0.03 (-0.11 , 0.17) | 0.03 (-0.11 , 0.17) | 0.29 (0.22 , 0.35) | 0.13 (-0.02 , 0.27) | 0.36 (0.2 , 0.53) | 0.04 (-0.03 , 0.1) | -0.03 (-0.09 , 0.03) | NA | NA | NA | 8678.5 | 0.92 | 0.09 |
| -0.13  (-0.2 ,  -0.05) | -0.02  (-0.13, 0.09) | 0.08 (0.02, 0.15) | -0.11 (-0.18 , -0.04) | 0.03 (-0.11 , 0.17) | 0.03 (-0.11 , 0.17) | 0.28 (0.22 , 0.35) | 0.12 (-0.02 , 0.27) | 0.36 (0.2 , 0.52) | 0.05 (-0.01 , 0.11) | NA | 0.04 (-0.03 , 0.1) | NA | NA | 8678.5 | 0.93 | 0.09 |
| -0.12  (-0.2 , -0.05) | -0.02  (-0.13, 0.09) | 0.09 (0.02, 0.15) | -0.11 (-0.18 , -0.03) | 0.04 (-0.1 , 0.17) | 0.04 (-0.1 , 0.17) | 0.28 (0.22 , 0.35) | 0.12 (-0.02 , 0.27) | 0.35 (0.19 , 0.52) | NA | NA | 0.02 (-0.04 , 0.08) | NA | NA | 8679.1 | 1.51 | 0.07 |
| -0.13  (-0.2, -0.05) | -0.03  (-0.14, 0.09) | 0.09 (0.02, 0.15) | -0.11 (-0.18 , -0.03) | 0.03 (-0.11 , 0.17) | 0.03 (-0.11 , 0.17) | 0.28 (0.22 , 0.35) | 0.13 (-0.02 , 0.27) | 0.36 (0.2 , 0.52) | 0.05 (-0.01 , 0.11) | NA | NA | 0.02 (-0.04 , 0.09) | NA | 8679.1 | 1.54 | 0.07 |
| -0.13  (-0.2, -0.05) | -0.02  (-0.13, 0.09) | 0.09 (0.02, 0.15) | -0.11 (-0.18 , -0.03) | 0.04 (-0.1 , 0.17) | 0.04 (-0.1 , 0.17) | 0.29 (0.22 , 0.35) | 0.12 (-0.02 , 0.27) | 0.36 (0.19 , 0.52) | NA | NA | NA | 0.01 (-0.05 , 0.08) | NA | 8679.4 | 1.78 | 0.06 |
| -0.12  (-0.2,  -0.05) | -0.02 (-0.13 , 0.09) | 0.09 (0.02 , 0.15) | -0.11 (-0.18 , -0.03) | 0.03 (-0.1 , 0.17) | 0.03 (-0.1 , 0.17) | 0.28 (0.22 , 0.35) | 0.12 (-0.02 , 0.27) | 0.36 (0.19 , 0.52) | NA | NA | NA | NA | -0.01 (-0.07 , 0.05) | 8679.4 | 1.84 | 0.06 |
| -0.12  (-0.2,  -0.05) | -0.02 (-0.13 , 0.09) | 0.09 (0.02 , 0.15) | -0.11 (-0.18 , -0.03) | 0.03 (-0.11 , 0.17) | 0.03 (-0.11 , 0.17) | 0.29 (0.22 , 0.35) | 0.12 (-0.02 , 0.27) | 0.36 (0.2 , 0.52) | NA | -0.04 (-0.1 , 0.02) | NA | NA | -0.01 (-0.07 , 0.05) | 8679.5 | 1.95 | 0.05 |
| -0.12  (-0.2,  -0.05) | -0.02 (-0.14 , 0.09) | 0.09 (0.02 , 0.15) | -0.11 (-0.18 , -0.03) | 0.03 (-0.11 , 0.17) | 0.03 (-0.11 , 0.17) | 0.28 (0.22 , 0.35) | 0.13 (-0.02 , 0.27) | 0.36 (0.2 , 0.52) | 0.04 (-0.02 , 0.1) | NA | NA | NA | -0.01 (-0.07 , 0.05) | 8679.5 | 1.96 | 0.05 |
| -0.13 (-0.2,  -0.05) | -0.02 (-0.13 , 0.09) | 0.09 (0.02 , 0.15) | -0.11 (-0.18 , -0.03) | 0.03 (-0.1 , 0.17) | 0.03 (-0.1 , 0.17) | 0.29 (0.22 , 0.35) | 0.12 (-0.02 , 0.27) | 0.36 (0.2 , 0.52) | NA | -0.04 (-0.1 , 0.02) | 0.01 (-0.05 , 0.08) | NA | NA | 8679.5 | 1.99 | 0.05 |

† BUILD = Building Density (200m), MOD = Modified Open (400m), MOW = Mowed (100m), ROAD = Road Distance Decay, SEAS(D) = Season (Dispersal), SEAS(P) = Season (Pup rearing), YEAR = Year, COM = Commercial (200m)

**Table A3.7.** The coefficients, confidence intervals and model parameters from the top-ranked ordinal regression models assessing human concern of coyotes.

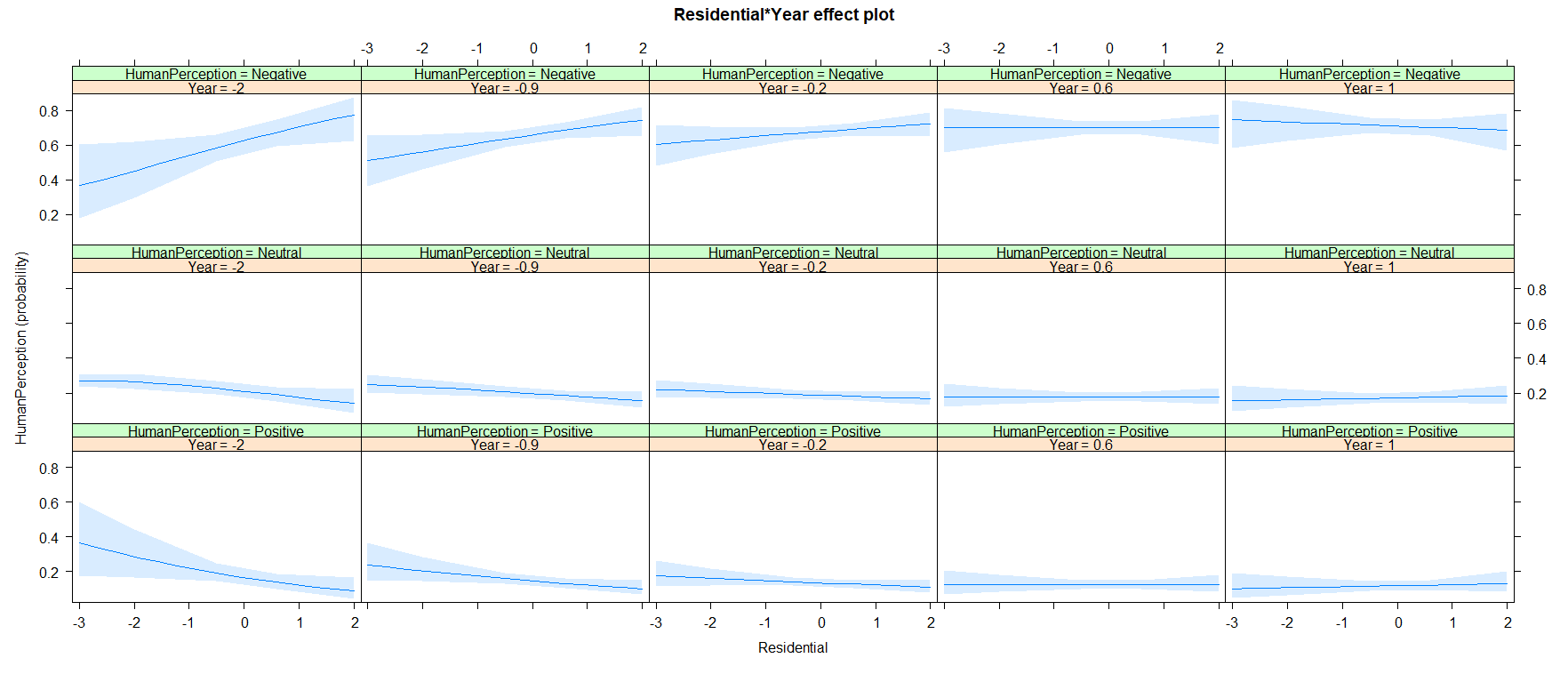
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables†**  **ß (2.5% C.I. , 97.5 C.I.)** | | | | | | | | | | **Model Parameters** | | |
| **RES** | **YEAR** | **RES: YEAR** | **MOD** | **SEAS(D)** | **SEAS(P)** | **MOD: YEAR** | **NAT** | **MOW** | **COM** | **AICc** | **ΔAICc** | **wgtAICc** |
| 0.17 (0.04 , 0.3) | 0.14 (0.01 , 0.27) | -0.12 (-0.25 , 0) | 0.16 (0.03 , 0.3) | 0.33 (0.04 , 0.62) | 0.18 (-0.16 , 0.52) | NA | NA | NA | NA | 1788.9 | 0.00 | 0.10 |
| 0.17 (0.04 , 0.29) | 0.13 (0 , 0.26) | -0.13 (-0.25 , 0) | 0.16 (0.03 , 0.3) | 0.32 (0.03 , 0.61) | 0.17 (-0.17 , 0.51) | -0.09 (-0.23 , 0.04) | NA | NA | NA | 1789.1 | 0.30 | 0.08 |
| 0.17 (0.04 , 0.29) | 0.13 (0 , 0.26) | -0.13 (-0.26 , -0.01) | 0.15 (0.02 , 0.29) | NA | NA | -0.1 (-0.24 , 0.03) | NA | NA | NA | 1789.7 | 0.84 | 0.06 |
| 0.14 (0 , 0.28) | 0.13 (0 , 0.26) | -0.13 (-0.25 , 0) | 0.16 (0.03 , 0.3) | 0.33 (0.04 , 0.62) | 0.18 (-0.16 , 0.52) | NA | -0.07 (-0.21 , 0.06) | NA | NA | 1789.8 | 0.94 | 0.06 |
| 0.17 (0.04 , 0.3) | 0.14 (0.01 , 0.26) | -0.13 (-0.25 , 0) | 0.15 (0.02 , 0.28) | NA | NA | NA | NA | NA | NA | 1789.9 | 0.95 | 0.06 |
| 0.16 (0.03 , 0.29) | 0.14 (0.01 , 0.26) | -0.12 (-0.25 , 0.01) | 0.13 (-0.02 , 0.28) | 0.33 (0.04 , 0.62) | 0.18 (-0.16 , 0.52) | NA | NA | -0.07 (-0.21 , 0.07) | NA | 1789.9 | 1.05 | 0.06 |
| 0.14 (0 , 0.28) | 0.13 (0 , 0.26) | -0.13 (-0.26 , -0.01) | 0.16 (0.03 , 0.3) | 0.32 (0.03 , 0.61) | 0.17 (-0.17 , 0.51) | -0.09 (-0.22 , 0.05) | -0.07 (-0.2 , 0.07) | NA | NA | 1790.2 | 1.38 | 0.05 |
| 0.15 (0.01 , 0.29) | 0.14 (0.01 , 0.27) | -0.13 (-0.25 , 0) | 0.15 (0.01 , 0.29) | 0.33 (0.04 , 0.62) | 0.17 (-0.16 , 0.51) | NA | NA | NA | -0.05 (-0.19 , 0.08) | 1790.3 | 1.45 | 0.05 |
| 0.16 (0.03 , 0.29) | 0.13 (0 , 0.26) | -0.12 (-0.25 , 0) | 0.13 (-0.01 , 0.28) | 0.32 (0.03 , 0.61) | 0.17 (-0.16 , 0.51) | -0.09 (-0.22 , 0.05) | NA | -0.07 (-0.2 , 0.07) | NA | 1790.3 | 1.48 | 0.05 |
| 0.09 (-0.06 , 0.25) | 0.13 (0.01 , 0.26) | -0.13 (-0.26 , -0.01) | 0.15 (0.01 , 0.29) | 0.33 (0.04 , 0.62) | 0.17 (-0.16 , 0.52) | NA | -0.1 (-0.25 , 0.04) | NA | -0.09 (-0.23 , 0.06) | 1790.4 | 1.57 | 0.04 |
| 0.14 (0.01 , 0.28) | 0.13 (0.01 , 0.26) | -0.13 (-0.26 , -0.01) | 0.15 (0.02 , 0.29) | 0.31 (0.02 , 0.61) | 0.17 (-0.17 , 0.51) | -0.09 (-0.23 , 0.04) | NA | NA | -0.06 (-0.19 , 0.08) | 1790.5 | 1.67 | 0.04 |
| 0.18 (0.06 , 0.31) | 0.15 (0.02 , 0.28) | NA | 0.16 (0.03 , 0.3) | 0.34 (0.05 , 0.63) | 0.19 (-0.15 , 0.53) | NA | NA | NA | NA | 1790.6 | 1.69 | 0.04 |
| 0.06 (-0.1 , 0.21) | 0.13 (0 , 0.26) | -0.13 (-0.26 , 0) | NA | 0.31 (0.02 , 0.6) | 0.17 (-0.16 , 0.52) | NA | -0.12 (-0.26 , 0.03) | -0.13 (-0.26 , -0.01) | -0.12 (-0.26 , 0.02) | 1790.6 | 1.84 | 0.04 |
| 0.13 (-0.01 , 0.27) | 0.13 (0 , 0.26) | -0.12 (-0.25 , 0) | 0.13 (-0.02 , 0.28) | 0.33 (0.04 , 0.62) | 0.18 (-0.16 , 0.52) | NA | -0.08 (-0.21 , 0.06) | -0.07 (-0.21 , 0.07) | NA | 1790.7 | 1.88 | 0.04 |
| 0.15 (0.02 , 0.28) | 0.14 (0.01 , 0.26) | -0.12 (-0.25 , 0.01) | NA | 0.31 (0.02 , 0.6) | 0.18 (-0.16 , 0.52) | NA | NA | -0.12 (-0.25 , 0) | NA | 1790.8 | 1.91 | 0.04 |
| 0.16 (0.03 , 0.29) | 0.13 (0.01 , 0.26) | -0.12 (-0.25 , 0) | 0.12 (-0.03 , 0.27) | NA | NA | NA | NA | -0.07 (-0.21 , 0.07) | NA | 1790.8 | 1.94 | 0.04 |
| 0.09 (-0.06 , 0.25) | 0.13 (0 , 0.26) | -0.14 (-0.26 , -0.01) | 0.15 (0.01 , 0.29) | 0.32 (0.03 , 0.61) | 0.17 (-0.17 , 0.51) | -0.09 (-0.23 , 0.05) | -0.1 (-0.24 , 0.05) | NA | -0.09 (-0.23 , 0.06) | 1790.7 | 1.95 | 0.04 |
| 0.14 (0.01 , 0.28) | 0.13 (0 , 0.26) | -0.13 (-0.26 , 0) | 0.15 (0.02 , 0.29) | NA | NA | NA | -0.07 (-0.2 , 0.07) | NA | NA | 1790.9 | 1.97 | 0.04 |
| 0.16 (0.03 , 0.29) | 0.13 (0 , 0.26) | -0.13 (-0.26 , 0) | 0.12 (-0.03 , 0.27) | NA | NA | -0.1 (-0.23 , 0.04) | NA | -0.07 (-0.21 , 0.07) | NA | 1790.8 | 1.98 | 0.04 |
| 0.14 (0.01 , 0.28) | 0.13 (0 , 0.25) | -0.13 (-0.26 , -0.01) | 0.15 (0.02 , 0.29) | NA | NA | -0.1 (-0.23 , 0.04) | -0.06 (-0.2 , 0.07) | NA | NA | 1790.9 | 2.00 | 0.04 |

† MOD = Modified Open (1600m), RES = Residential (800m), SEAS(D) = Season (dispersal), SEAS(P) = Season (pup rearing), YEAR = Year, NAT = Natural (1600m), MOW = Mowed (800m), COM = Commercial

**Graphical user interface, application

Description automatically generated**

**Figure A3.1.** Interaction plot between season and modified open land cover (within 400m) for models of coyote boldness. The plot was generated using the *Effect* function from the package effects (Fox and Hong 2009) on an ordered logistic regression model created using the function *polr* from the package MASS (Venables and Ripley 2002).



**Figure A3.2.**  Interaction plot between year and the proportion of residential area within 800 m for human concern models. The plot was generated using the *Effect* function from the package effects (Fox and Hong 2009) on an ordered logistic regression model created using the function *polr* from the package MASS (Venables and Ripley 2002).