

| Areas and Counting Methods                           |                |      |        |           |              |                            |         | Direct and Sweep Count Info      |                                             |                        |                        |                        |                        |                        |                        | EGK Density            |                                 |                 |                 |              |              |                |                    | EGK Population Size    |                |                    |                    |              |              |        |    |  |
|------------------------------------------------------|----------------|------|--------|-----------|--------------|----------------------------|---------|----------------------------------|---------------------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|---------------------------------|-----------------|-----------------|--------------|--------------|----------------|--------------------|------------------------|----------------|--------------------|--------------------|--------------|--------------|--------|----|--|
| Site                                                 | Site Area (ha) | Year | Season | Month     | Count date   | Count Method               | Who     | Number of people in Sweep Counts | Number of Component Counts (Dc and Sc only) | EGK population Count 1 | EGK population Count 2 | EGK population Count 3 | EGK population Count 4 | EGK population Count 5 | EGK population Count 6 | EGK population Count 7 | EGK Density (EGK/ha) in Reserve | EGK Density LCL | EGK Density UCL | Lower 95% CI | Upper 95% CI | EGK Density SE | 95% CI for density | Natural log of density | EGK Population | EGK Population LCL | EGK Population UCL | Lower 95% CI | Upper 95% CI | CV (%) | SE |  |
| Ainslie Majura KMU                                   | 2,117          | 2015 | Winter | June      | 02-Jun-15    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 2.10                            | 1.50            | 3.00            | 0.60         | 0.90         | 0.38           |                    | 0.74                   | 4499           | 3176               | 6351               |              |              |        |    |  |
| Ainslie Majura KMU                                   | 2100           | 2016 | Autumn | May       | 02-May-16    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 2.80                            | 2.00            | 3.40            | 0.80         | 0.60         | 0.36           |                    | 1.03                   | 5941           | 4200               | 7140               |              |              |        |    |  |
| Ainslie Majura KMU                                   | 2109           | 2017 | Autumn | April     | 10-Apr-17    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 2.15                            | 1.63            | 2.82            | 0.51         | 0.67         | 0.30           |                    | 0.76                   | 4527           | 3445               | 5947               | 3446         | 5948         |        |    |  |
| Ainslie Majura KMU (Campbell Park (aka West Majura)) | 231            | 2016 | Autumn | May       | 21-May-16    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 5.40                            | 4.60            | 6.50            | 0.80         | 1.10         | 0.48           |                    | 1.69                   | 1260           | 1063               | 1502               |              |              |        |    |  |
| Ainslie Majura KMU (Campbell Park (aka West Majura)) | 231            | 2016 | Spring | September | 04-Sep-16    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 5.90                            | 5.20            | 6.80            | 0.70         | 0.90         | 0.41           |                    | 1.77                   | 1375           | 1201               | 1571               |              |              |        |    |  |
| Ainslie Majura KMU (Campbell Park (aka West Majura)) | 231            | 2016 | Summer | December  | Count not do | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        |                                 |                 |                 |              |              |                |                    |                        |                |                    |                    |              |              |        |    |  |
| Ainslie Majura KMU (Campbell Park (aka West Majura)) | 231            | 2017 | Autumn | March     | 17-Mar-17    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 4.56                            | 3.92            | 5.30            | 0.64         | 0.74         | 0.35           |                    |                        | 1055           |                    |                    |              |              |        |    |  |
| Ainslie Majura KMU (Campbell Park (aka West Majura)) | 231            | 2017 | Winter | July      | 21-Jul-17    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 5.79                            | 5.08            | 6.60            | 0.71         | 0.81         | 0.39           |                    |                        | 1340           |                    |                    |              |              |        |    |  |
| Ainslie Majura KMU (Canberry Fair)                   | 97             | 2016 | Autumn | May       | 22-May-16    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 1.60                            | 1.20            | 2.30            | 0.40         | 0.70         | 0.28           |                    | 0.47                   | 158            | 116                | 223                |              |              |        |    |  |
| Ainslie Majura KMU (Canberry Fair)                   | 97             | 2016 | Spring | September | 04-Sep-16    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 0.90                            | 0.60            | 1.40            | 0.30         | 0.50         | 0.20           |                    | -0.11                  | 90             | 58                 | 136                |              |              |        |    |  |
| Ainslie Majura KMU (Canberry Fair)                   | 97             | 2016 | Summer | December  | Count not do | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        |                                 |                 |                 |              |              |                |                    |                        |                |                    |                    |              |              |        |    |  |
| Ainslie Majura KMU (Canberry Fair)                   | 97             | 2017 | Autumn | March     | 18-Mar-17    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 1.72                            | 1.22            | 2.41            | 0.49         | 0.69         | 0.30           |                    |                        | 168            |                    |                    |              |              |        |    |  |
| Ainslie Majura KMU (Canberry Fair)                   | 97             | 2017 | Winter | July      | 24-Jul-17    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 1.21                            | 0.84            | 1.75            | 0.37         | 0.54         | 0.23           |                    |                        | 118            |                    |                    |              |              |        |    |  |
|                                                      |                |      |        |           |              |                            |         |                                  |                                             |                        |                        |                        |                        |                        |                        |                        |                                 |                 |                 |              |              |                |                    |                        |                |                    |                    |              |              |        |    |  |
| Callum Brae KMU (incl. Jerra W, Isaacs, Mugga)       | 2,033          | 2013 | Spring | September | 09-Sep-13    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 1.17                            | 1.00            | 1.36            | 0.17         | 0.19         | 0.09           |                    | 0.16                   | 2374           | 2039               | 2764               | 335          | 390          |        |    |  |
| Callum Brae Nature Reserve                           | 143            | 2008 | Spring | November  | 15-Nov-08    | Direct Count               | ACT Gov |                                  | 1                                           | 183                    |                        |                        |                        |                        |                        |                        | 1.28                            |                 |                 |              |              |                |                    | 0.25                   | 183            |                    |                    |              |              |        |    |  |
| Callum Brae Nature Reserve                           | 141            | 2009 | Winter | August    | 28-Aug-09    | Pellet Count               | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 2.05                            | 1.36            | 2.75            | 0.69         | 0.70         | 0.35           | 0.69               | 0.72                   | 289            | 191                | 387                | 98           | 98           |        |    |  |
| Callum Brae Nature Reserve                           | 143            | 2011 | Autumn | May       | 10-May-11    | Pellet Count               | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 2.94                            | 2.14            | 3.73            | 0.80         | 0.79         | 0.41           | 0.80               | 1.08                   | 421            | 306                | 535                | 115          | 114          |        |    |  |
| Callum Brae Nature Reserve                           | 143            | 2012 | Summer | February  | 01-Feb-12    | Road based Distance Method | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 1.70                            | 1.22            | 2.36            | 0.48         | 0.66         | 0.29           |                    | 0.53                   | 243            | 174                | 338                | 69           | 95           |        |    |  |
| Callum Brae Nature Reserve                           | 143            | 2013 | Summer | February  | 20-Feb-13    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 2.01                            | 1.55            | 2.60            | 0.46         | 0.59         | 0.27           |                    | 0.70                   | 288            | 222                | 372                | 66           | 84           |        |    |  |
| Callum Brae Nature Reserve                           | 143            | 2013 | Summer | February  | 20-Feb-13    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 1.76                            | 1.41            | 2.20            | 0.35         | 0.44         | 0.20           |                    | 0.57                   | 252            | 202                | 314                | 50           | 62           |        |    |  |
| Callum Brae Nature Reserve                           | 143            | 2014 | Winter | August    | 25-Aug-14    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 2.56                            | 1.96            | 3.34            | 0.60         | 0.78         | 0.35           |                    | 0.94                   | 367            | 281                | 479                | 86           | 112          | 13.39  |    |  |
| Callum Brae Nature Reserve                           | 143            | 2015 | Autumn | April     | 17-Apr-15    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 2.00                            | 1.40            | 2.80            | 0.60         | 0.80         | 0.36           |                    | 0.69                   | 283            | 200                | 400                | 83           | 117          | 14.39  |    |  |
| Callum Brae Nature Reserve                           | 143            | 2016 | Autumn | April     | 22-Apr-16    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 2.40                            | 2.00            | 2.90            | 0.40         | 0.50         | 0.23           |                    | 0.88                   | 343            | 286                | 415                | 57           | 72           | 15.39  |    |  |
| Callum Brae Nature Reserve                           | 143            | 2017 | Autumn | April     | 27-Apr-17    | Walked Line Transect       | ACT Gov |                                  |                                             |                        |                        |                        |                        |                        |                        |                        | 2.01                            | 1.58            | 2.56            | 0.43         | 0.55         | 0.25           |                    | 0.70                   | 288            | 226                | 366                | 62           | 78           | 16.39  |    |  |
|                                                      |                |      |        |           |              |                            |         |                                  |                                             |                        |                        |                        |                        |                        |                        |                        |                                 |                 |                 |              |              |                |                    |                        |                |                    |                    |              |              |        |    |  |
| Crace KMU                                            | 165            | 2012 | Summer | February  | 22-Feb-12    | Direct Count               | ACT Gov |                                  | 2                                           | 130                    | 134                    |                        |                        |                        |                        |                        | 0.70                            | 0.68            | 0.72            | 0.02         | 0.02         | 0.01           | 0.02               | -0.36                  | 132            | 128                | 136                | 4            | 4            |        |    |  |
| Crace KMU                                            | 189            | 2013 | Autumn | March     | 03-Mar-13    | Direct Count               | ACT Gov |                                  | 2                                           | 145                    | 146                    |                        |                        |                        |                        |                        | 0.77                            | 0.76            | 0.77            | 0.01         | 0.00         | 0.00           | 0.01               | -0.26                  | 146            | 145                | 146                | 1            | 0            |        |    |  |
| Crace KMU                                            | 189            | 2013 | Spring | October   | 29-Oct-13    | Direct Count               | ACT Gov |                                  | 1                                           | 191                    |                        |                        |                        |                        |                        |                        | 1.01                            |                 |                 |              |              |                |                    | 0.01                   | 191            |                    |                    |              |              |        |    |  |
| Crace KMU                                            | 188            | 2014 | Winter | June      | 20-Jun-14    | Direct Count               | ACT Gov | 5                                | 2                                           | 235                    | 217                    |                        |                        |                        |                        |                        | 1.20                            |                 |                 |              |              |                |                    | 0.18                   | 226            |                    |                    |              |              |        |    |  |
| Crace KMU                                            | 188            | 2014 | Spring | September | 29-Sep-14    | Direct Count               | ACT Gov | 4                                | 4                                           | 226                    | 239                    | 219                    | 257                    |                        |                        |                        | 1.25                            | 1.16            | 1.34            | 0.09         | 0.09         | 0.04           |                    | 0.22                   | 235            | 219                | 252                | 16           | 16           |        | 8  |  |
| Crace KMU                                            | 180            | 2015 | Autumn | April     | 13-Apr-15    | Direct Count               | ACT Gov | 4                                | 2                                           | 246                    | 251                    |                        |                        |                        |                        |                        | 1.38                            |                 |                 |              |              |                |                    | 0.32                   | 249            |                    |                    |              |              |        |    |  |
| Crace KMU                                            | 180            | 2016 | Winter | June      | 15-Jun-16    | Direct Count               | ACT Gov | 3                                | 1                                           | 189                    |                        |                        |                        |                        |                        |                        | 1.05                            |                 |                 |              |              |                |                    |                        | 189            |                    |                    |              |              |        |    |  |
| Crace KMU                                            | 180            | 2017 | Autumn | April     | 19-Apr-17    | Direct Count               | ACT Gov | 3                                | 2                                           | 230                    | 149                    |                        |                        |                        |                        |                        | 1.05                            |                 |                 |              |              |                |                    |                        | 190            |                    |                    |              |              |        |    |  |
| Crace Nature Reserve                                 | 165            | 2008 | Spring | October   | 02-Oct-08    | Direct Count               | ACT Gov |                                  | 7                                           | 120                    | 125                    | 122                    | 120                    | 124                    | 126                    | 127                    | 0.75                            | 0.74            | 0.76            | 0.01         | 0.01         | 0.01           | 0.02               | -0.29                  | 123            | 121                | 125                | 2            | 2            |        |    |  |
| Crace Nature Reserve                                 | 165            | 2009 | Winter | August    | 13-Aug-09    | Direct Count               | ACT Gov |                                  | 2                                           | 130                    | 150                    |                        |                        |                        |                        |                        | 0.85                            | 0.73            | 0.97            | 0.12         | 0.12         | 0.06           | 0.12               | -0.16                  | 140            | 120                | 160                | 20           | 20           |        |    |  |
|                                                      |                |      |        |           |              |                            |         |                                  |                                             |                        |                        |                        |                        |                        |                        |                        |                                 |                 |                 |              |              |                |                    |                        |                |                    |                    |              |              |        |    |  |
| Goorooyarro Dunnarts Flat Exlosure                   | 112            | 2013 | Autumn | March     | 07-Mar-13    | Sweep Count                | ACT Gov |                                  | 1                                           | 189                    |                        |                        |                        |                        |                        |                        | 1.67                            |                 |                 |              |              |                |                    | 0.51                   | 189            |                    |                    |              |              |        |    |  |

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|                                                                                                                                                                                                                                                                                                                                                   | Hyperlink to File (as at 11/3/14)                                                                            |  |  |  |  |  |
| * Auditing exposed some minor errors in some counts. Corrected values are in the "EGK density" column. Also site areas were slightly revised in some cases leading to minor changes in density estimation. The earlier density estimates in this (which?) column were used to calculate carrying capacities, target densities and numbers to cull |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              |  |  |  |  |  |
| Analysed using grazed/ungrazed covariates; 10% truncation; half-normal with cosine adjustment.                                                                                                                                                                                                                                                    | <a href="#">4_Kangaroo Walked Line Transect Counts 2013\Kangaroo Count WLT Results Summary for 2013.xlsx</a> |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              |  |  |  |  |  |
| this was a trial of the road based distance method, density estimate is expected to be an underestimate, work to correct this estimate will be completed mid 201:                                                                                                                                                                                 |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              |  |  |  |  |  |
| Re-analysed using grazed/ungrazed covariates; 10% truncation; half-normal with cosine adjustment.                                                                                                                                                                                                                                                 | <a href="#">4_Kangaroo Walked Line Transect Counts 2013\Kangaroo Count WLT Results Summary for 2013.xlsx</a> |  |  |  |  |  |
| <a href="#">Final 2014 WLT results 2015_02_04 (version 1).xlsb</a>                                                                                                                                                                                                                                                                                |                                                                                                              |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              |  |  |  |  |  |
| a first count of 85 kangaroos was disregarded as it was deemed unreliable                                                                                                                                                                                                                                                                         |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              |  |  |  |  |  |
| 127 roos moved out of area under fence. Apply for 740 in full reserve. Special CC applies at GNR                                                                                                                                                                                                                                                  |                                                                                                              |  |  |  |  |  |

|                                                                       |       |      |        |           |           |                            |                |          |     |      |      |      |      |  |  |  |      |       |      |      |       |      |      |       |      |         |         |         |         |       |  |      |
|-----------------------------------------------------------------------|-------|------|--------|-----------|-----------|----------------------------|----------------|----------|-----|------|------|------|------|--|--|--|------|-------|------|------|-------|------|------|-------|------|---------|---------|---------|---------|-------|--|------|
| Goorooyarro Dunnarts Flat Exclosure                                   | 112   | 2014 | Spring | September | 09-Sep-14 | Sweep Count                | ACT Gov        | 15 or 13 | 4   | 102  | 94   | 86   | 90   |  |  |  | 0.91 |       |      | 0.06 |       | 0.03 |      | -0.09 | 102  |         |         |         |         |       |  | 3.42 |
| Goorooyarro Dunnarts Flat Exclosure                                   | 112   | 2014 | Spring | September | 09-Sep-14 | Pellet Count               | ACT Gov        |          |     |      |      |      |      |  |  |  | 0.28 | 0.02  | 0.07 | 0.02 | 0.02  | 0.01 |      |       | 32   | 16      | 48      | 16      | 16      |       |  |      |
| Goorooyarro Dunnarts Flat Exclosure                                   | 112   | 2014 | Spring | November  | 06-Nov-14 | Sweep Count                | ACT Gov        |          | 2   | 116  | 106  |      |      |  |  |  | 1.04 |       |      |      |       |      |      |       | 116  |         |         |         |         |       |  |      |
| Goorooyarro Dunnarts Flat Exclosure                                   | 112   | 2015 | Autumn | April     | 15-Apr-15 | Sweep Count                | ACT Gov        | 12       | 2   | 89   | 84   |      |      |  |  |  | 0.79 |       |      |      |       |      |      |       | 89   |         |         |         |         |       |  |      |
| Goorooyarro Dunnarts Flat Exclosure                                   | 112   | 2016 | Autumn | April     | 20-Apr-16 | Sweep Count                | ACT Gov        | 14       | 2   | 37   | 56   |      |      |  |  |  | 0.42 |       |      |      |       |      |      |       | 47   |         |         |         |         |       |  |      |
| Goorooyarro Dunnarts Flat Exclosure                                   | 112   | 2017 | Autumn | May       | 15-May-17 | Sweep Count                | ACT Gov        | 15       | 1   | 244  |      |      |      |  |  |  | 2.18 |       |      |      |       |      |      |       | 244  |         |         |         |         |       |  |      |
| Goorooyarro Forest Exclosure                                          | 38    | 2013 | Autumn | March     | 07-Mar-13 | Sweep Count                | ACT Gov        |          | 2   | 40   | 39   |      |      |  |  |  | 1.05 | 1.02  | 1.05 | 0.03 | 0.00  | 0.01 | 0.03 | 0.05  | 40   | 39      | 40      | 1       | 0       |       |  |      |
| Goorooyarro Forest Exclosure                                          | 38    | 2014 | Spring | September | 09-Sep-14 | Sweep Count                | ACT Gov        | 4 or 5   | 4   | 7    | 7    | 7    | 7    |  |  |  | 0.19 |       |      |      |       |      |      | -1.68 | 7    |         |         |         |         |       |  |      |
| Goorooyarro Exclosures                                                | 151   | 2012 | Autumn | April     | 01-Apr-12 | Sweep Count                | ACT Gov        |          | 1   | 126  |      |      |      |  |  |  | 0.83 |       |      |      |       |      | 1.16 | -0.18 | 126  |         |         |         |         |       |  |      |
| Goorooyarro Forest Exclosure                                          | 38    | 2015 | Autumn | April     | 07-Apr-15 | Sweep Count                | ACT Gov        | 3        | 2   | 4    | 4    |      |      |  |  |  | 0.11 |       |      |      |       |      |      | -2.24 | 4    |         |         |         |         |       |  |      |
| Goorooyarro Forest Exclosure                                          | 38    | 2016 | Autumn | April     | 08-Apr-16 | Sweep Count                | ACT Gov        | 5        | 1   | 7    |      |      |      |  |  |  | 0.19 |       |      |      |       |      |      |       | 7    |         |         |         |         |       |  |      |
| Goorooyarro Forest Exclosure                                          | 38    | 2017 | Autumn | May       | 15-May-17 | Sweep Count                | ACT Gov        | 8        | 2   | 86   | 49   |      |      |  |  |  | 2.26 |       |      |      |       |      |      |       | 86   |         |         |         |         |       |  |      |
| Goorooyarro KMU                                                       | 1,391 | 2013 | Summer | February  | 26-Feb-13 | Walked Line Transect       | ACT Gov        |          |     |      |      |      |      |  |  |  | 0.86 | 0.66  | 1.13 | 0.20 | 0.27  | 0.12 |      | -0.15 | 1200 | 919     | 1567    | 281     | 367     |       |  |      |
| Goorooyarro KMU                                                       | 1,391 | 2013 | Winter | June      | 28-Jun-13 | Walked Line Transect       | ACT Gov        |          |     |      |      |      |      |  |  |  | 1.18 | 1.03  | 1.35 | 0.15 | 0.17  | 0.08 |      | 0.17  | 1642 | 1433    | 1882    | 209     | 240     |       |  |      |
| Goorooyarro KMU                                                       | 1,391 | 2013 | Autumn | March     | 27-Mar-13 | Walked Line Transect       | ACT Gov        |          |     |      |      |      |      |  |  |  | 1.14 | 0.81  | 1.62 | 0.33 | 0.48  | 0.21 |      | 0.13  | 1173 | 827     | 1646    | 346     | 473     |       |  |      |
| Goorooyarro KMU                                                       | 1,391 | 2015 | Autumn | May       | 27-May-16 | Walked Line Transect       | ACT Gov        |          |     |      |      |      |      |  |  |  | 0.80 | 0.50  | 1.20 | 0.30 | 0.40  | 0.18 |      | -0.22 | 817  | 696     | 1669    |         |         |       |  |      |
| Goorooyarro KMU                                                       | 1006  | 2016 | Autumn | May       | 21-May-16 | Walked Line Transect       | ACT Gov        |          |     |      |      |      |      |  |  |  | 1.40 | 1     | 1.9  | 0.40 | 0.50  | 0.23 |      | 0.34  | 1392 | 1006    | 1911    |         |         |       |  |      |
| Goorooyarro KMU                                                       | 871   | 2017 | Autumn | April     | 21-Apr-17 | Walked Line Transect       | ACT Gov        |          |     |      |      |      |      |  |  |  | 0.91 | 0.674 | 1.24 | 0.24 | 0.33  | 0.14 |      | -0.09 | 796  | 587     | 1080    |         |         |       |  |      |
| Goorooyarro KMU excluding roo exclosures                              | 1,019 | 2014 | Winter | August    | 07-Aug-14 | Walked Line Transect       | ACT Gov        |          |     |      |      |      |      |  |  |  | 0.60 | 0.45  | 0.82 | 0.15 | 0.22  | 0.09 |      | -0.51 | 616  | 454     | 835     | 162     | 219     | 15.23 |  |      |
| Goorooyarro Nature Reserve                                            | 746   | 2011 | Autumn | May       | 01-May-11 | Pellet Count               | ACT Gov + ANU  |          |     |      |      |      |      |  |  |  | 1.99 | 1.35  | 2.64 | 0.64 | 0.65  | 0.33 | 0.65 | 0.69  | 1488 | 1006    | 1971    | 482     | 483     |       |  |      |
| Goorooyarro Nature Reserve excluding roo exclosures                   | 577   | 2009 | Spring | September | 29-Sep-09 | Pellet Count               | ACT Gov + ANU  |          |     |      |      |      |      |  |  |  | 2.17 | 1.72  | 2.63 | 0.45 | 0.46  | 0.23 | 0.45 | 0.77  | 1255 | 993     | 1517    | 262     | 262     |       |  |      |
| Goorooyarro Nature Reserve excluding roo exclosures                   | 576   | 2012 | Summer | February  | 21-Feb-12 | Road based Distance Method | ACT Gov        |          |     |      |      |      |      |  |  |  | 1.99 | 1.44  | 2.77 | 0.56 | 0.78  | 0.34 |      | 0.69  | 1149 | 827     | 1596    | 322     | 447     |       |  |      |
| Goorooyarro Nature Reserve excluding roo exclosures                   | 551   | 2013 | Summer | February  | 22-Feb-13 | Walked Line Transect (6)   | ACT Gov        |          |     |      |      |      |      |  |  |  | 2.08 | 1.45  | 2.94 | 0.63 | 0.86  | 0.38 |      | 0.73  | 1145 | 799     | 1618    | 346     | 473     |       |  |      |
| Gungaderra KMU                                                        | 336   | 2013 | Spring | September | 06-Sep-13 | Sweep Count                | ACT Gov        | 15       | 2   | 627  | 663  |      |      |  |  |  | 1.92 |       |      |      |       |      | 0.10 | 0.65  | 645  | 610     | 680     | 35      | 35      |       |  |      |
| Gungaderra KMU                                                        | 342   | 2014 | Winter | June      | 27-Jun-14 | Sweep Count                | ACT Gov + Vols | 13-15    | 4   | 752  | 720  | 761  | 755  |  |  |  | 2.18 | 2.13  | 2.24 | 0.05 | 0.05  | 0.03 | 0.05 | 0.78  | 747  | 729     | 765     | 18      | 18      |       |  | 9    |
| Gungaderra KMU                                                        | 342   | 2014 | Winter | August    | 07-Aug-14 | Walked Line Transect       | ACT Gov        |          |     |      |      |      |      |  |  |  | 2.44 | 1.85  | 3.21 | 0.59 | 0.77  | 0.35 |      |       | 888  | 674     | 1170    |         |         | 13.65 |  |      |
| Gungaderra KMU                                                        | 342   | 2014 | Spring | September | 09-Sep-14 | Pellet Count               | ACT Gov        |          |     |      |      |      |      |  |  |  | 2.17 | 0.66  | 1.92 | 0.63 | 0.63  | 0.32 |      |       | 742  | 378     | 1105    | 364     | 363     |       |  | 110  |
| Gungaderra KMU                                                        | 342   | 2015 | Autumn | April     | 04-May-15 | Sweep Count                | ACT Gov        | 14       | 2   | 761  | 769  |      |      |  |  |  | 2.24 |       |      |      |       |      |      |       | 765  | too few | too few | too few | too few | reps  |  |      |
| Gungaderra KMU                                                        | 364   | 2016 | Autumn | May       | 04-May-16 | Sweep Count                | ACT Gov        | 16-17    | 3   | 354  | 424  | 451  |      |  |  |  | 1.13 |       |      |      |       |      |      |       | 410  |         |         |         |         |       |  |      |
| Gungaderra KMU                                                        | 364   | 2016 | Winter | July      | 20-Jul-16 | Sweep Count                | ACT Gov        |          | 2   | 366  | 402  |      |      |  |  |  | 1.06 |       |      |      |       |      |      |       | 384  |         |         |         |         |       |  |      |
| Gungaderra KMU                                                        | 364   | 2017 | Autumn | April     | 12-Apr-17 | Sweep Count                | ACT Gov        | 22-19    | 2   | 344  | 364  |      |      |  |  |  | 0.97 |       |      |      |       |      |      |       | 354  |         |         |         |         |       |  |      |
| Jerrabomberra East                                                    |       | 2012 |        |           |           | Pellet Count               |                |          |     |      |      |      |      |  |  |  | 2.69 |       |      |      |       |      | 1.12 | 0.99  | 259  |         |         |         |         |       |  |      |
| Jerrabomberra East + Qbn NR                                           | 233   | 2015 | Autumn | April     | 09-Apr-15 | Direct Count               | ACT Gov        | 10-11    | 2   | 1551 | 1535 |      |      |  |  |  | 6.62 |       |      |      |       |      |      |       | 1543 |         |         |         |         |       |  |      |
| Jerrabomberra East + Qbn NR                                           | 233   | 2016 | Autumn | April     | 27-Apr-16 | Sweep Count                | ACT Gov        | 11       | 4   | 1281 | 1606 | 1338 | 1116 |  |  |  | 5.73 |       |      |      |       |      | 0.73 |       | 1335 |         |         |         |         |       |  |      |
| Jerrabomberra East + Qbn NR                                           | 233   | 2017 | Autumn | May       | 08-Jun-17 | Sweep Count                | ACT Gov        | 10       | 2   | 1568 | 1579 |      |      |  |  |  | 6.75 |       |      |      |       |      |      |       | 1574 |         |         |         |         |       |  |      |
| Jerrabomberra East 1 - KMU incl Qbn NR in NSW UNRELIABLE JUNE 20      | 233   | 2014 | Winter | July      | 15-May-14 | Direct Count               | ACT Gov        |          | 2   | 1036 | 1141 |      |      |  |  |  | 4.67 |       |      |      |       |      |      | 1.54  | 1089 |         |         |         |         |       |  | 53   |
| Jerrabomberra East 1 - KMU incl Qbn NR in NSW ACCEPTABLE OCT 201      | 233   | 2014 | Spring | October   | 17-Oct-14 | Direct Count               | ACT Gov        |          | 3   | 1373 | 1491 | 1487 |      |  |  |  | 6.22 | 5.89  | 6.54 | 0.33 | 0.33  | 0.17 | 0.33 | 1.83  | 1450 | 1375    | 1526    | 76      | 76      |       |  | 39   |
| Jerrabomberra East 2 - Nature Reserve before exclosure built          | 99    | 2008 | Spring | November  | 14-Nov-08 | Direct Count               | ACT Gov        | 2        | 237 | 230  |      |      |      |  |  |  | 2.36 | 2.29  | 2.43 | 0.07 | 0.07  | 0.04 | 0.07 | 0.86  | 234  | 227     | 240     | 7       | 7       |       |  |      |
| Jerrabomberra East 2 - Nature Reserve before exclosure built          | 99    | 2009 | Spring | October   | 08-Oct-09 | Direct Count               | ACT Gov        | 4        | 358 | 371  | 278  | 199  |      |  |  |  | 3.05 | 2.26  | 3.83 | 0.79 | 0.78  | 0.40 | 0.09 | 1.12  | 302  | 223     | 380     | 78      | 78      |       |  |      |
| Jerrabomberra East 2 - Nature Reserve Outside Exclosures              | 97    | 2012 | Summer | December  | 19-Dec-12 | Pellet Count               | ACT Gov        |          |     |      |      |      |      |  |  |  | 1.73 | 1.01  | 2.48 | 0.72 | 0.70  | 0.36 |      | 0.55  | 167  | 98      | 286     | 60      | 60      |       |  |      |
| Jerrabomberra East 2 - Nature Reserve Outside Exclosures              | 97    | 2012 | Summer | December  | 19-Dec-12 | Pellet Count               | ACT Gov        |          |     |      |      |      |      |  |  |  | 3.07 |       |      | 1.79 | 4.32  | 0.65 |      | 1.12  | 296  |         |         | 174     | 419     |       |  |      |
| Jerrabomberra East 2 - Nature Reserve Outside Exclosures              | 97    | 2014 | Spring | September | 09-Sep-14 | Pellet Count               | ACT Gov        |          |     |      |      |      |      |  |  |  | 6.33 | 3.99  | 8.61 | 2.31 | 2.31  | 1.18 |      |       | 611  | 387     | 835     | 224     | 224     |       |  |      |
| Jerrabomberra East 2 - Nature Reserve Outside Exclosures              | 218   | 2014 | Spring | October   | 17-Oct-14 | Sweep Count                | ACT Gov        | 8        | 3   | 908  | 1033 | 1122 |      |  |  |  | 4.68 |       |      |      |       |      | 0.56 | 1.54  | 1021 |         |         |         |         |       |  | 62   |
| Jerrabomberra East 2 - Nature Reserve Outside Exclosures AREA ANOM    | 112   | 2013 | Winter | July      | 25-Jul-13 | Pellet Count               |                |          |     |      |      |      |      |  |  |  | 5.23 | 1.53  | 1.53 | 3.70 | -3.70 | 0.78 |      | 1.65  | 507  | 359     | 655     | 148     | 148     |       |  |      |
| Jerrabomberra East 2 - Nature Reserve Outside Exclosures AREA ANOM    | 97    | 2013 | Winter | July      | 25-Jul-13 | Pellet Count               |                |          |     |      |      |      |      |  |  |  | 5.23 | 3.70  | 6.75 | 1.53 | 1.53  | 0.78 |      | 1.65  | 507  | 359     | 655     | 148     | 148     |       |  |      |
| Jerrabomberra East 2 - Nature Reserve Outside Exclosures AREA ANOM    | 97    | 2013 | Winter | July      | 25-Jul-13 | Pellet Count               |                |          |     |      |      |      |      |  |  |  | 5.77 |       |      | 4.08 | 7.44  | 0.86 |      | 1.75  | 559  |         |         | 396     | 722     |       |  |      |
| Jerrabomberra East 2 - Nature Reserve Outside Exclosures Part of coun | 97    | 2014 | Spring | October   | 17-Oct-14 | Sweep Count                | ACT Gov        | 8        |     | 0    | 0    | 0    |      |  |  |  | 0.00 |       |      |      |       | 0.00 |      |       | 0    |         |         |         |         |       |  |      |
| Jerrabomberra East 2 - Nature Reserve Outside Exclosures Part of coun | 97    | 2014 | Winter | June      | 20-Jun-14 | Direct Count               | ACT Gov        |          | 2   | 693  | 662  |      |      |  |  |  | 6.98 |       |      |      |       |      |      | 1.94  | 678  |         |         |         |         |       |  |      |
| Jerrabomberra East 3 - contiguous areas (Qbn NR and Poplars) Part of  | 84    | 2014 | Winter | June      | 20-Jun-14 | Direct Count               | ACT Gov        |          | 2   | 343  | 479  |      |      |  |  |  | 4.89 |       |      |      |       |      |      | 1.59  | 411  |         |         |         |         |       |  |      |
| Jerrabomberra East 3 - contiguous areas (Qbn NR and Poplars) Part of  | 84    | 2014 | Spring | October   | 17-Oct-14 | Direct Count               | ACT Gov        | 4        | 3   | 465  | 458  | 365  |      |  |  |  | 5.11 |       |      |      |       |      |      | 1.63  | 429  |         |         |         |         |       |  |      |
| Jerrabomberra East 4 - Nature Reserve Exclosure                       | 15    | 2012 | Summer |           |           | Direct Count               | ACT Gov        |          |     |      |      |      |      |  |  |  | 0.00 | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 |      | #NUM! | 0    | 0       | 0       | 0       | 0       |       |  |      |
| Jerrabomberra East 4 - Nature Reserve Exclosure                       | 15    | 2013 | Winter | July      | 25-Jul-13 | Direct Count               |                |          | 1   | 12   |      |      |      |  |  |  | 0.80 |       |      |      |       |      |      | -0.22 | 12   |         |         |         |         |       |  |      |
| Jerrabomberra East 4 - Nature Reserve Exclosure                       | 15    | 2013 | Winter | July      | 25-Jul-13 | Pellet Count               |                |          |     |      |      |      |      |  |  |  | 0.65 | 0.27  | 1.07 | 0.28 | 0.42  | 0.20 |      | -0.42 | 10   | 4       | 16      | 6       | 6       |       |  |      |
| Jerrabomberra East 4 - Nature Reserve Exclosure                       | 15    | 2013 | Winter | July      | 25-Jul-13 | Pellet Count               |                |          |     |      |      |      |      |  |  |  | 0.39 |       |      | 0.13 | 0.60  | 0.12 |      | -0.94 | 6    |         |         | 2       | 9       |       |  |      |
| Jerrabomberra East 4 - Nature Reserve Exclosure                       | 15    | 2014 | Winter | June      | 20-Jun-14 | Direct Count               |                |          | 1   | 5    |      |      |      |  |  |  | 0.33 |       |      |      |       |      |      | -1.10 | 5    |         |         |         |         |       |  |      |
| Jerrabomberra East 4 - Nature Reserve Exclosure                       | 15    | 2014 | Spring | October   | 17-Oct-14 | Direct Count               | ACT Gov        |          | 4   | 5    | 5    | 7    | 4    |  |  |  | 0.35 |       |      |      |       |      |      | -1.05 | 5    |         |         |         |         |       |  | 1    |
| Jerrabomberra East 4 - Nature Reserve Exclosure                       | 15    | 2016 | Autumn | April     | 27-Apr-16 | Direct Count               | ACT Gov        |          | 1   | 108  |      |      |      |  |  |  | 7.20 |       |      |      |       |      |      | 1.97  | 108  |         |         |         |         |       |  |      |
| Jerrabomberra East Exclosure                                          | 15    | 2015 |        |           |           |                            |                |          |     |      |      |      |      |  |  |  | 1.00 |       |      |      |       |      |      | 0.00  | 15   |         |         |         |         |       |  |      |

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| 4 Redneck Wallabies and 1 Swamp Wallaby counted.                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                              |  |  |  |  |  |
| Apply for 740 in full reserve. Special CC applies at GNR.                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| special research carrying capacity, in addition the number to cull is low because the numbers had to be worked out by DF before exact areas were know                                                                                                                                                                                                                                                                                                                                         |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| 29 Roos jumped through enclosure fence on first count                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                              |  |  |  |  |  |
| Re-analysed using grazed/ungrazed covariates; 10% truncation; half-normal with cosine adjustment.                                                                                                                                                                                                                                                                                                                                                                                             | <a href="#">4_Kangaroo Walked Line Transect Counts 2013\Kangaroo Count WLT Results Summary for 2013.xlsx</a> |  |  |  |  |  |
| Analysed using grazed/ungrazed and open/woody covariates; 10% truncation; half-normal with cosine adjustment                                                                                                                                                                                                                                                                                                                                                                                  | <a href="#">4_Kangaroo Walked Line Transect Counts 2013\Kangaroo Count WLT Results Summary for 2013.xlsx</a> |  |  |  |  |  |
| <del>Re-analysed</del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                              |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| <a href="#">Final 2014 WLT results 2015_02_04 (version 1).xlsb</a>                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| this was a trial of the road based distance method, density estimate is expected to be an underestimate, work to correct this estimate will be completed mid 2013. This site has a special carrying capacity for research purposes                                                                                                                                                                                                                                                            |                                                                                                              |  |  |  |  |  |
| Apply for 740 in full reserve. Special CC applies at GNR.                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                              |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| <a href="#">Final 2014 WLT results 2015_02_04 (version 1).xlsb</a>                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| Count found in "2013 roo counts and cull numbers" file; no date givenbut must be before 22/2/2013, and probably within 2012 or 2013                                                                                                                                                                                                                                                                                                                                                           |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| a first count of 107 was disregarded as it was deemed unreliable                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| <del>Imm-grat-on-stues</del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Density calculated from pellet count data using HM-based correction to establish pellet discovery rate       |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <a href="#">1_Pellet Counts\Density from Pellet Counts Winter 2012.xls</a>                                   |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Density calculated from pellet count data using HM-based correction to establish pellet discovery rate       |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <a href="#">1_Pellet Counts\Density from Pellet Counts Winter 2012.xls</a>                                   |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Density calculated from pellet count data using HM-based correction to establish pellet discovery rate       |  |  |  |  |  |
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| <a href="#">Final 2014 WLT results 2015_02_04 (version 1).xlsb</a>                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                              |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| This was a trial of the road based distance method, density estimate is expected to be an underestimate, work to correct this estimate will be completed mid 2013. Carrying capacity and target density are different to what was reported for 2012 cull, the numbers reported were for the whole Jerrabomberra West NR including the kangaroo enclosure area, the carrying capacity and target density given here are for Jerrabomberra West NR excluding the area of the kangaroo enclosure |                                                                                                              |  |  |  |  |  |
| Unreliable population estimate (CV=59%)                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <a href="#">1_Pellet Counts\Density from Pellet Counts Summer 2012 14.xls</a>                                |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Density calculated from pellet count data using HM-based correction to establish pellet discovery rate       |  |  |  |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                              |  |  |  |  |  |
| Sweep count result did not meet reliability criterion. Lower value used.                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                              |  |  |  |  |  |

|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|---------------------|-----|------|--------|-----------|-----------|----------------------------|---------|--|--|---|-----|--|--|--|--|--|--|--|------|------|------|------|------|------|------|------|-------|------|-----|-----|-----|-----|--|--|--|--|
| Kama Nature Reserve | 154 | 2008 | Spring | November  | 15-Nov-08 | Direct Count               | ACT Gov |  |  | 1 | 180 |  |  |  |  |  |  |  | 1.17 |      |      |      |      |      |      |      | 1.62  | 0.16 | 180 |     |     |     |  |  |  |  |
| Kama Nature Reserve | 155 | 2009 | Spring | September | 01-Sep-09 | Sweep Count                | ACT Gov |  |  |   |     |  |  |  |  |  |  |  | 1.40 |      |      |      |      |      |      |      |       | 0.33 | 216 |     |     |     |  |  |  |  |
| Kama Nature Reserve | 155 | 2011 | Winter | June      | 06-Jun-11 | Pellet Count               | ACT Gov |  |  |   |     |  |  |  |  |  |  |  | 1.54 | 0.06 | 3.02 | 1.48 | 1.48 | 0.75 | 1.47 | 0.43 | 239   | 10   | 467 | 229 | 228 |     |  |  |  |  |
| Kama Nature Reserve | 155 | 2012 | Summer | February  | 12-Feb-12 | Road based Distance Method | ACT Gov |  |  |   |     |  |  |  |  |  |  |  | 0.61 | 0.35 | 1.05 | 0.25 | 0.44 | 0.18 |      |      | -0.50 | 94   | 54  | 163 | 40  | 69  |  |  |  |  |
| Kama Nature Reserve | 150 | 2013 | Winter | July      | 24-Jul-13 | Pellet Count               | ACT Gov |  |  |   |     |  |  |  |  |  |  |  | 0.87 | 0.60 | 1.00 | 0.18 | 0.22 | 0.10 |      |      | -0.14 | 134  | 104 | 164 | 30  | 30  |  |  |  |  |
| Kama Nature Reserve | 150 | 2013 | Winter | July      | 24-Jul-13 | Pellet Count               | ACT Gov |  |  |   |     |  |  |  |  |  |  |  | 0.68 |      |      | 0.71 | 0.86 | 0.08 |      |      | -0.39 | 106  |     |     | 106 | 129 |  |  |  |  |
| Kama and leases KMU | 940 | 2017 | Autumn | May       | 09-May-17 | Walked Line Transect       | ACT Gov |  |  |   |     |  |  |  |  |  |  |  | 0.61 | 0.42 | 0.87 | 0.19 | 0.27 | 0.12 |      |      |       | 568  | 393 | 821 |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |
|                     |     |      |        |           |           |                            |         |  |  |   |     |  |  |  |  |  |  |  |      |      |      |      |      |      |      |      |       |      |     |     |     |     |  |  |  |  |

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