**08/1/2024**

**Revised CWD detection probabilities for FID 10953B using data from individual deer records – adjusting sample size instead of the population size.**

The number of deer in the facility was adjusted using the individual CWD testing data. Deer with known negative status were ‘removed’ from the population so as to improve the CWD detection probability. For example, OGQA was born in June 2018 and tested for CWD in February 2023 (antemortem test, negative). We now know OGQA was in the population as a fawn until May 2019, and as an adult until 2023, and its CWD status was negative. We estimated annual CWD detection probabilities by incorporating this information in our analysis.

Earlier, we had removed such untested but known CWD negative deer from the population (denominator). We have now modified our approach by keeping the population (denominator) unchanged but adding the untested but known CWD negative deer to the numerator. In other words, we increase the sample size (numerator) because if these deer were tested, the result would have been negative.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | Adult pop | Fawn pop | Adjusted adult sample size | Adjusted fawn sample size |
| 2012 | 0 | 0 | 0 | 0 |
| 2013 | 0 | 0 | 0 | 0 |
| 2014 | 44 | 25 | 1 | 0 |
| 2015 | 114 | 47 | 26 | 0 |
| 2016 | 114 | 49 | 50 | 0 |
| 2017 | 107 | 61 | 34 | 0 |
| 2018 | 149 | 44 | 16 | 3 |
| 2019 | 136 | 82 | 28 | 9 |
| 2020 | 154 | 73 | 41 | 48 |
| 2021 | 163 | 116 | 163 | 52 |
| 2022 | 199 | 54 | 199 | 10 |

Annual CWD Detection Probability. The revised detection probabilities are calculated for the mid-year population, when fawns of the previous year transition to adult class.

Blue column: Mean annual detection probability without using individual deer data.

Grey column: Mean annual detection probability using individual deer data – untested but known negative deer removed from the denominator (population)

Gold column: Mean annual detection probability using individual deer data – untested but negative deer added to the sample size (numerator)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year | DP fawns | DP fawns revised (July 2024) | DP fawns (Aug 2024) | DP adults | DP adults revised (July 2024) | DP adults (Aug 2024) | DP total | DP total revised (July 2024) | DP total (Aug 2024) |
| 2012 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2013 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2014 | 0 | 0 | 0 | 3 | 2 | 2 | 2 | 2 | 2 |
| 2015 | 0 | 0 | 0 | 39 | 22 | 23 | 15 | 14 | 16 |
| 2016 | 0 | 0 | 0 | 56 | 42 | 42 | 27 | 29 | 29 |
| 2017 | 0 | 0 | 0 | 27 | 31 | 31 | 15 | 22 | 22 |
| 2018 | 0 | 0 | 6 | 8 | 8 | 11 | 5 | 6 | 9 |
| 2019 | 0 | 0 | 10 | 6 | 10 | 20 | 5 | 6 | 19 |
| 2020 | 0 | 0 | 64 | 4 | 5 | 26 | 2 | 5 | 39 |
| 2021 | 1 | 3 | 45 | 56 | >95 | >95 | 26 | 54 | 79 |
| 2022 | 1 | 3 | 19 | 60 | >95 | >95 | 31 | 58 | 82 |

The detection probability estimates improve considerably for the total population in 2021 and 2022. **Based on the analysis, this** **facility can be considered free of CWD in 2022 with a high degree of confidence (82%).**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year | DP fawns (rev1) | DP fawns (rev2) | DP fawns (rev3) | DP adults (rev1) | DP adults (rev2) | DP adults (rev3) | DP total (rev1) | DP total (rev2) | DP total (rev3) |
| 2012 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2013 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2014 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | 2 |
| 2015 | 0 | 0 | 15 | 22 | 23 | 28 | 14 | 16 | 29 |
| 2016 | 0 | 0 | 0 | 42 | 42 | 64 | 29 | 29 | 43 |
| 2017 | 0 | 0 | 11 | 31 | 31 | 36 | 22 | 22 | 30 |
| 2018 | 0 | 6 | 53 | 8 | 11 | 33 | 6 | 9 | 38 |
| 2019 | 0 | 10 | 78 | 10 | 20 | 51 | 6 | 19 | 56 |
| 2020 | 0 | 64 | >95 | 5 | 26 | 79 | 5 | 39 | 84 |
| 2021 | 3 | 45 | >95 | >95 | >95 | >95 | 54 | 79 | >95 |
| 2022 | 3 | 19 | >95 | >95 | >95 | >95 | 58 | 82 | >95 |